SWITCH
KOREA

Hu-Mecha Interface

Convenient Interface between Human & Mechatronics

ISO 9001
ISO 14001

"인간과 기술의 편리한 만남"

Convenient Interface between Human & Mechatronics

VISION_ 세계적 선도 기술의 IT Mechatronics 회사

PHILOSOPHY_ Hu-MechaInterface

SWITCH KOREA

History of Company

2009	05	Classified as a "Main-Biz" by the "Small and Medium Business Administration, KOREA"
2008	11	Classified as a "Inno-Biz" by the "Small and Medium Business Administration, KOREA"
2008	01	Starting to Manufacture HDMI Connector
2007	04	Acquired the ISO-14001 Environment Certificate(Qingdao NAMAE)
2006	08	Completing R/F Switch Development & Starting to Manufacture
1999	07	Designated as a Venture Business
1997	01	Chosen as the Excellent Labor-Management Company by the "Ministry of Labor, Korea"
1996	10	Acquired the ISO Quality Certificate(NAMAE: ISO-9001, Qingdao NAMAE: ISO-9002)
1995	12	Completed the 2nd Factory of Qingdao NAMAE Electronics Co., Ltd. In China
1994	03	Established the R&D Laboratory
1993	11	Completed the 1st Factory of Qingdao NAMAE Electronics Co., Ltd. In China
1992	02	Established Qingdao NAMAE Electronics Co., Ltd. In China
1991	05	Acquired Certificate with UL, CSA, VDE
1990	12	Designated as a Technology Advancement Company by the "Ministry of Trade & Industry, Korea"
1986	06	Designated as a Specialized Technology Enterprise by the "KIET, Korea"
1986	02	Designated as a Leading Enterprise of Mold Production by the "Administration of Industrial Promotion, Korea"
1977	09	Established

Award & Certificate

2005	10	Samsung Electric. S-Partner Certified
2005	10	LG Electronic. Eco-Partner Certified
2004	10	Samsung Electronic. Eco-Partner Certified
2001	12	Received the Excellent Company Award in the 11th Small & Medium Company Grand Prize Competition
2000	01	Achieved Zero Accident Performance by 500%;recognized by the Korea Industrial Safety Corporation
1999	01	Designated as the Company with Excellent Technological Competitive Power by the Small & Medium Industry Administration, Korea
1997	01	Chosen as the Excellent Labor-Management Company by the Ministry of Labor, Korea
1996	10	Acquired the ISO Certification (Namae: ISO-9001, Qingdao Namae: ISO-9002)
1995	12	Received the US$10 Million Export Tower Award from Korean Government
1992	05	Received the Bronze Tower Industrial Award
1985	02	Received a citation from the Trade & Industry Minister

Product Application

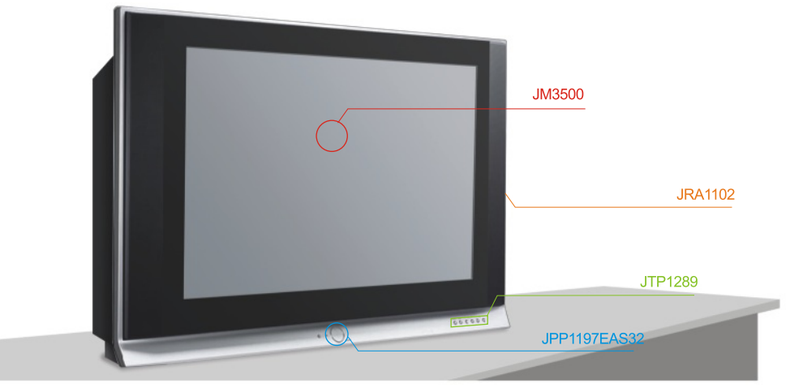
Total Solutions for You
with Innovative Ideas

LCD/PDP TV & Monitor

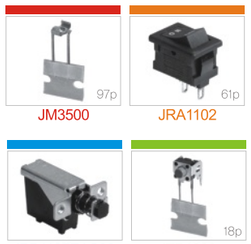
Ear Phone Set

Note Book PC

CD/DVD-ROM



CRT TV



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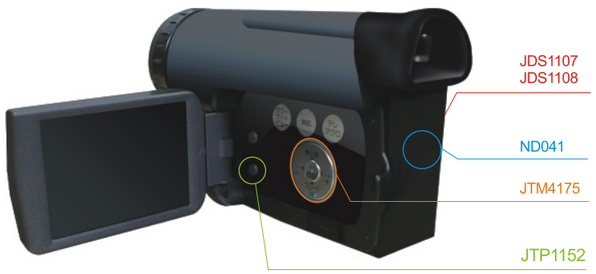


Camcorder

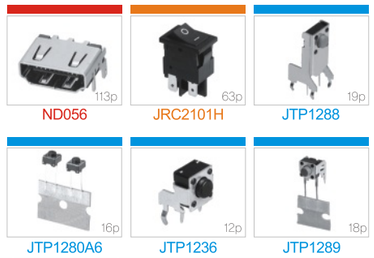
Mobile Phone

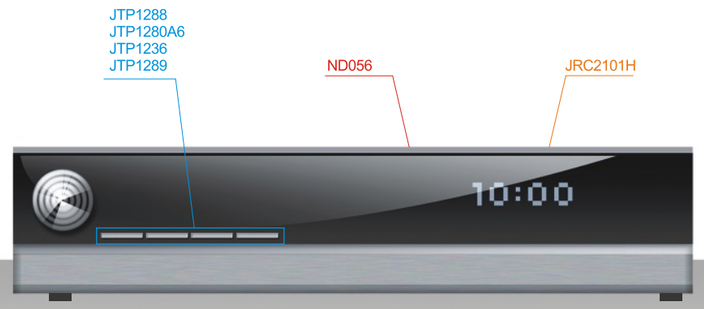
Mouse

Product Application

Total Solutions for You
with Innovative Ideas

Set-Top BOX





Multifunction Copier

Refrigerator

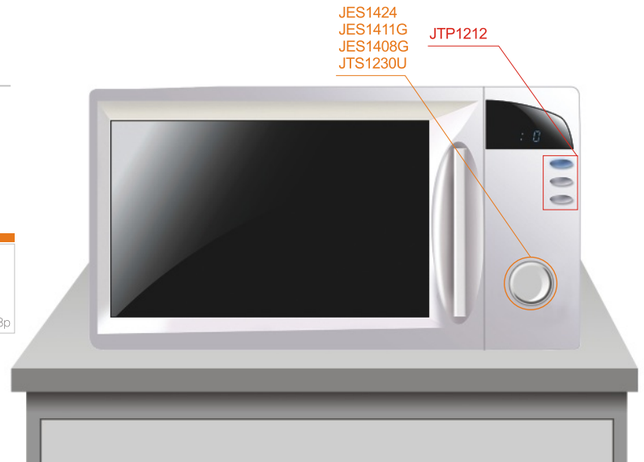
JTS 1138
JTS1230A

JTS 1138
JTS1230A
JTS1230WA, F

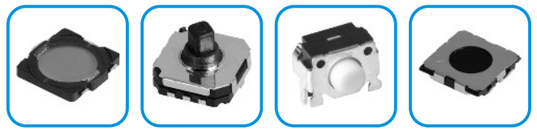
Air Conditioner

Washing Machine

Microwave Oven



TACTILE SWITCHES



CONTENTS

SPECIFICATIONS · · · · · 03
TACTILE SWITCHES · · · · · 04
TACTILE SWITCHES(MULTI WAY) · · · · · 26
TACTILE SWITCHES(SEALED) · · · · · 28
TACTILE SWITCHES(RUBBER STEM) · · · · · 30
BUTTON · · · · · 31

Common Specifications

1. Rating : DC 12V 50mA(Resistive Load)
2. Electrical Performance

Item	Test Condition	Performance
Contact Resistance	DC 5V 100mA	100mΩ Max.
Insulation Resistance	DC 100V for 1 minute	100mΩ Min.
Withstanding Voltage	AC 250V for 1 minute	Shall be Free from Dielectric Breakage

3. Mechanical Performance

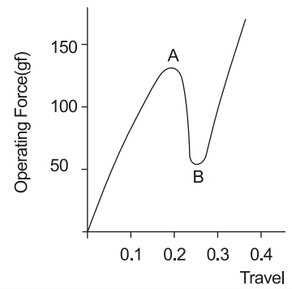
Item	Test Condition	Performance
Operating Force		As per Individual Specifications
Stop Strength	3kgf for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The Key Shall be Struck Lightly Vertically at it's Center at a Uniform Cycling Rate of 3 Operations Per Second	10m sec. Max.

4. Endurance

Item	Test Condition	Performance
Life Test	2-3 Cycles/Second with DC 5V 5mA Resistive Load Cycles of Operation: As per Individual Specifications	· Contact Resistance : 200mΩ Max. · Operating Force : ±30% Initial Value · Insulation Resistance : 10mΩ Min.
Dry Heat Proof	85±2℃ for 96 Hours After Test, Kept in Normal Condition for 30 Minutes	Equality to Initial Specifications
Moisture Resistance	60±2℃, 90~95% RH for 96 Hours After Test, Kept in Normal Condition for 30 Minutes	Equality to Initial Specifications
Cold Proof	-30℃ for 96 Hours After Test, Kept in Normal Condition for 30 Minutes	Equality to Initial Specifications

5. Solder Heat Resistance & Auto Soldering : 255℃ / 5 Seconds

Explanation of Terms

Item	Explanation	Figure
Operating Force	It refers to the maximum load at the time of switching over of the contacts.(point A in the figure)	
Return Force	It refers to the returning force of the stem after its full travel when pushed out.(point B in the figure)	
Click(Tactile Feedback)	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentary at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal	

Special Specifications

This specification is applied to sealed switch

1. Immersion test : MIL - STD - 202F Method 104A
This test conditions of successive cycles of immersions, each cycle consisting of immersion in a hot bath of fresh(tap) water at a temperature of 65 $^{+5}_{-5}$ ℃ followed by immersion in a cold bath.

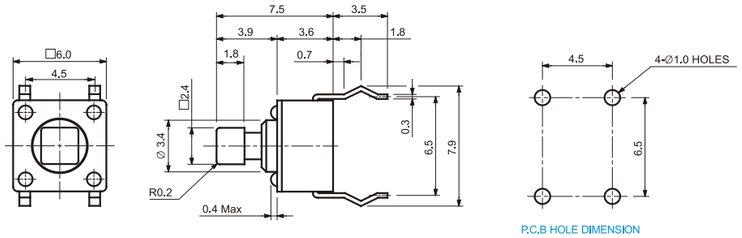
Number of cycles	Duration of each immersion	Immersion bath(cold)	Temperature of cold bath(℃)
2	15Min.	Fresh(tap) water	25 $^{+10}_{-5}$

2. Bubble test : MIL - STD - 202E Method 112 Test condition D
Immersion in a Flourocarbon liquid at 85℃ for 60 seconds.

TACTILE SWITCHES

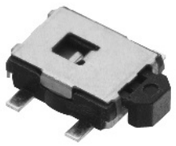
JTP 1034

1. Contact Resistance: 100mΩ Max.
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles
4. Operating Force: 160±50gf

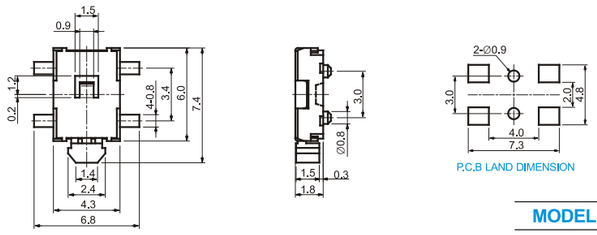


P.C.B HOLE DIMENSION

JTP 1100



1. Operating Force: 220^{+80}_{-70} gf
2. Travel: $0.30^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.

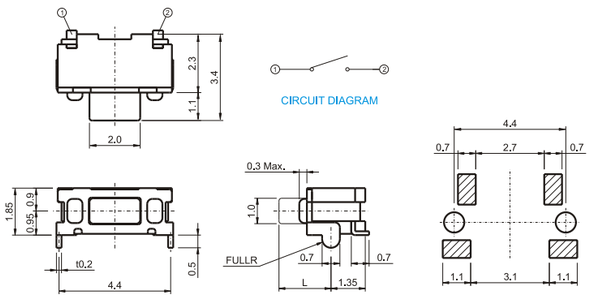


P.C.B LAND DIMENSION

MODEL NO.	REMARK
JTP 1100	With Boss
JTP 1100A	Without Boss

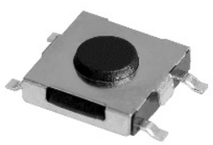
JTP 1102

1. Contact : Mechanical Contact
2. Rating : DC 12V, 50mA
3. Travel : 0.2±0.1mm
4. Operating Force: 160±50gf
5. Contact : 100mΩ
6. Life Cycles: 50,000 Cycles

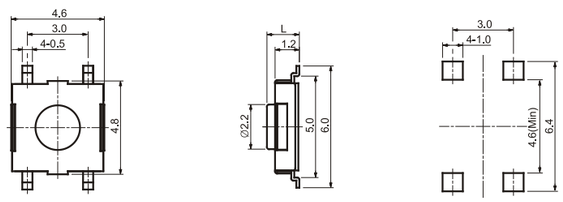


P.C.B LAND DIMENSION

JTP 1127



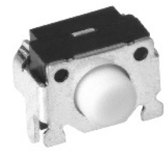
1. Rating: DC 12V, 50mA
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Contact Resistance: 50mΩ Max.
4. Life Cycles: 100,000 Cycles



P.C.B LAND DIMENSION

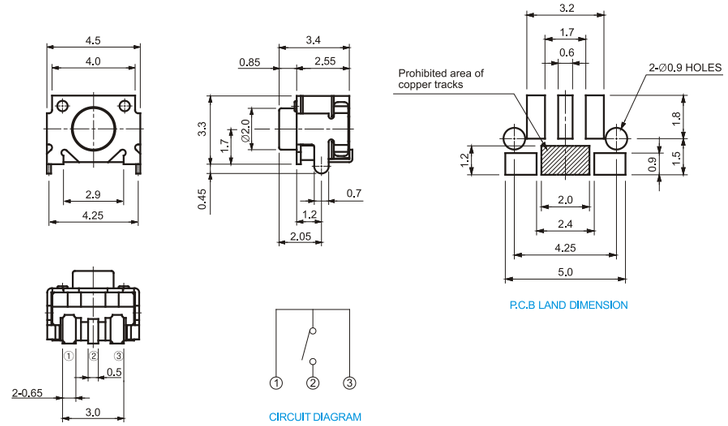
MODEL NO.	JTP1127W	JTP1127CK	JTP1127H
L (mm)	1.5	1.5	1.5
Operating Force	250±50gf	160±50gf	100±50gf
Stem Color	Black	Natural(Ivory)	Brown

JTP 1133R



1. Rating: 12VDC, 50mA
2. Contact Resistance: 500mΩ Max.
3. Travel: 0.2±0.1mm
4. Life Cycles: 100,000 Cycles
5. General Tolerance: ±0.3

MODEL NO.	Guide Boss
JTP 1133R	With Boss
JTP 1133RN	Without Boss

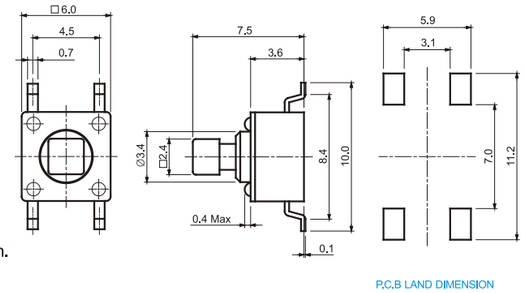


CIRCUIT DIAGRAM

P.C.B LAND DIMENSION

JTP 1134S

1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.



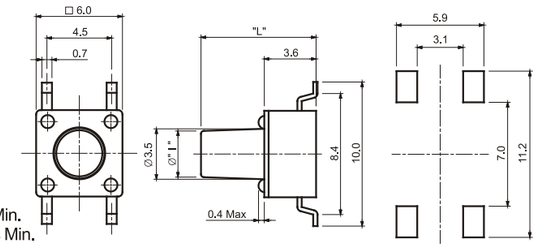
P.C.B LAND DIMENSION

Operating Force	Stem Color
100±50gf	Brown
160±50gf	Black
260±50gf	Natural

MODEL NO.	S
JTP 1134S	□2.4
JTP 1134SA	□2.8

JTP 1138

1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.
   1,000,000 Cycles Min.

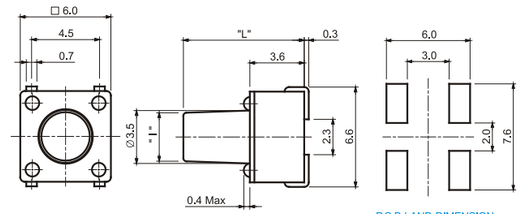


P.C.B LAND DIMENSION

Operating Force	Stem Color
100±50gf	Brown
160±50gf	Black
260±50gf	Natural(Ivory)

JTP 1138J

1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.



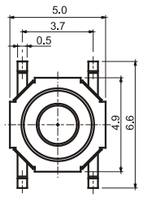
P.C.B LAND DIMENSION

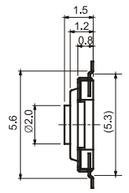
Operating Force	Stem Color
100±50gf	Brown
160±50gf	Black
260±50gf	Natural(Ivory)

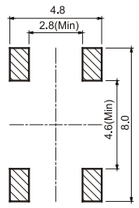
MODEL NO.	JTP1138	JTP1138A	JTP1138B	JTP1138C	JTP1138D	JTP1138E	JTP1138F	JTP1138P	JTP1138L
L	4.3	5.0	9.5	8.0	13.0	7.3	7.0	8.5	17.0

TACTILE SWITCHES

JTP 1140CK



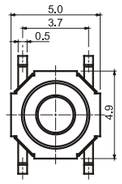


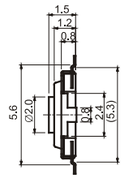


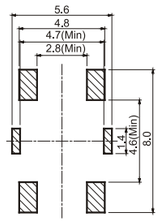
P.C.B LAND DIMENSION

1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Operating Force: 100±50gf, 160±50gf, 260±50gf
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 1,000,000 Cycles min. 500,000 Cycles min.

JTP 1140ECK



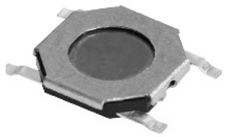


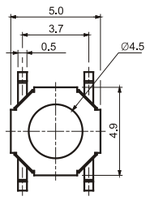


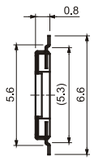
P.C.B LAND DIMENSION

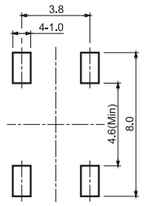
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Operating Force: 100±50gf, 160±50gf, 260±50gf
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 1,000,000 Cycles Min. 500,000 Cycles Min.

JTP 1141CK





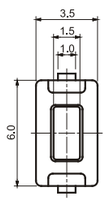


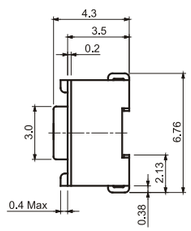


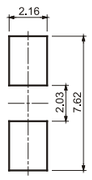
P.C.B LAND DIMENSION

1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Operating Force: 100±50gf, 160±50gf, 260±50gf
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 1,000,000 Cycles Min. 500,000 Cycles Min.

JTP 1143J





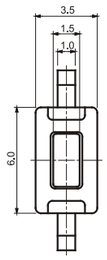


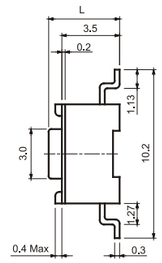
P.C.B LAND DIMENSION

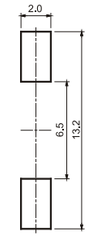
1. Contact Resistance: 100mΩ Max.
2. Travel: $0.25^{+0.2}_{-0.1}$ mm

MODEL NO.	JTP1143J	JTP1143HJ	JTP1143WJ
Operating Force	180±50gf	130±50gf	260±50gf
Stem Color	Black	Brown	Natural
Life Cycles	40,000	50,000	30,000

JTP 1143S, 1150S







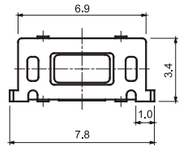
P.C.B LAND DIMENSION

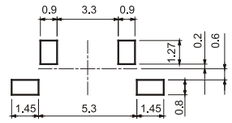
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm

Operating Force	Stem Color	Life
130±50gf	Brown	50,000Cycles
180±50gf	Black	40,000Cycles
260±50gf	Natural(Ivory)	30,000Cycles

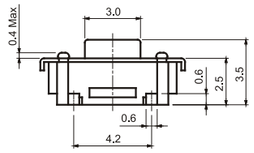
MODEL NO.	L
JTP 1143S	4.3
JTP 1150S	5.0

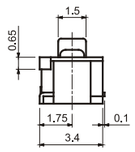
JTP 1144R





P.C.B LAND DIMENSION

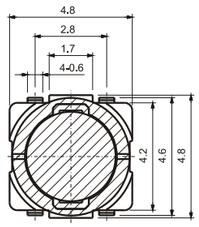


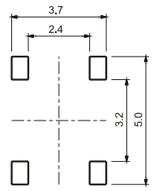


1. Contact: Mechanical Contact
2. Rating: DC 12V 50mA
3. Travel: $0.25^{+0.2}_{-0.1}$ mm
4. Contact Resistance: 100m Max.

Operating Force	Stem Color	Life
130±50gf	Gray	50,000Cycles
180±50gf	Natural(Ivory)	40,000Cycles
260±50gf	Black	30,000Cycles

JTP 1146

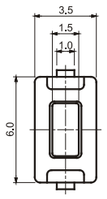


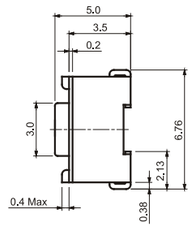


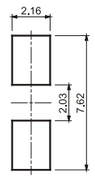
P.C.B LAND DIMENSION

1. Rating: DC 12V, 50mA
2. Contact Resistance: 100mΩ Max.
3. Travel: 0.2 ± 0.1mm
4. Operating Force: 160±50gf
5. Life Cycles: 500,000 Cycles

JTP 1150J







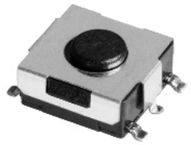
P.C.B LAND DIMENSION

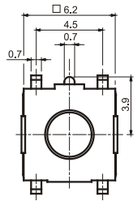
1. Contact Resistance: 100mΩ Max.
2. Travel: $0.25^{+0.2}_{-0.1}$ mm

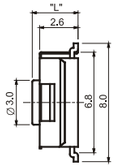
MODEL NO.	JTP1150J	JTP1150HJ	JTP1150WJ
Operating Force	180±50gf	130±50gf	260±50gf
Stem Color	Black	Brown	Natural(Ivory)
Case Color	Brown	Brown	Brown
Life Cycles	40,000	50,000	30,000

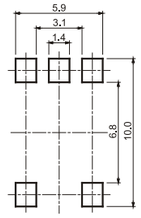
TACTILE SWITCHES

JTP 1161







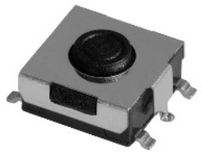


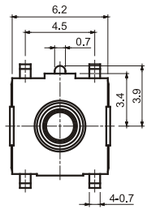
P.C.B LAND DIMENSION

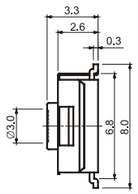
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Operating Force: 100±50gf, 160±50gf, 260±50gf
4. Life Cycles: 100,000 Cycles Min.

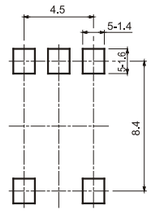
MODEL NO.	L
JTP 1161	3.1
JTP 1161A	4.3

JTP 1161L





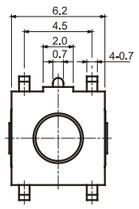


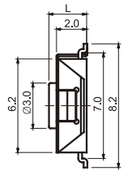


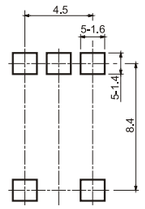
P.C.B LAND DIMENSION

1. Contact Resistance: 50mΩ Max.
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Operating Force: 160±50gf
4. Life Cycles: 500,000 Cycles

JTP 1164EB





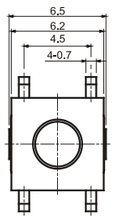


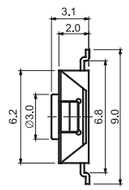
P.C.B LAND DIMENSION

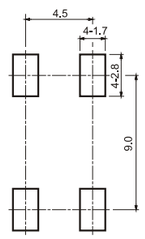
1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: $0.25^{+0.2}_{-0.1}$ mm
4. Life Cycles: 100,000 Cycles

MODEL NO.	JTP1164EB	JTP1164WE
L (mm)	3.1	2.5
Operating Force	160±50gf	260±50gf
Stem Color	Black	Violet
Case Color	Black	Black

JTP 1169B





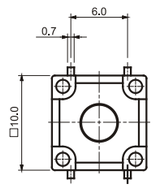


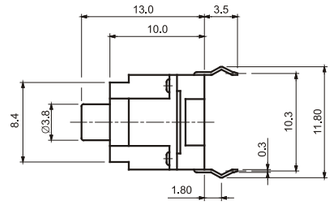
P.C.B LAND DIMENSION

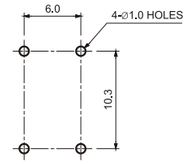
1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: $0.25^{+0.2}_{-0.1}$ mm
4. Operating Force: 160±50gf
5. Life Cycles: 100,000 Cycles

JTP 1210W

WATER PROOF



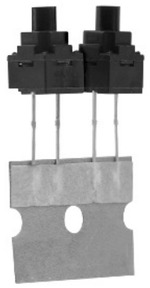




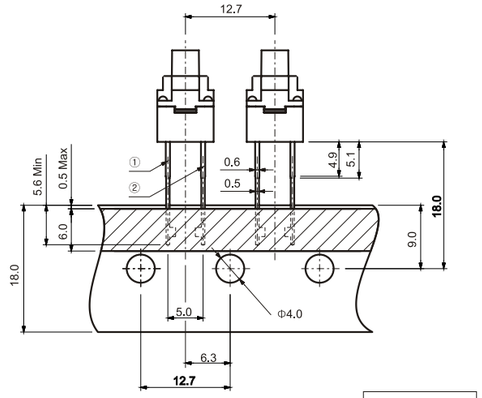
P.C.B HOLE DIMENSION

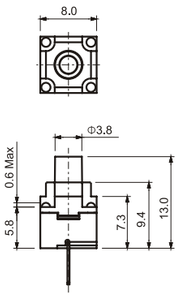
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Operating Force: 260±50gf
4. Life Cycles: 100,000 Cycles Min.

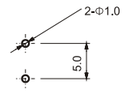
JTP 1210WR



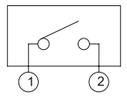
WATER PROOF







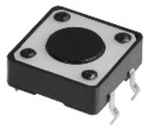
P.C.B HOLE DIMENSION

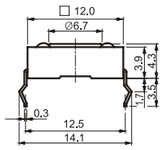


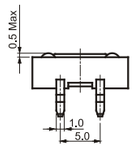
CIRCUIT DIAGRAM

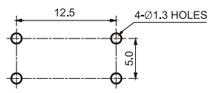
1. Contact: Mechanical Contact
2. Rating : DC 12V, 50mA
3. Travel: $0.3^{+0.2}_{-0.1}$ mm
4. Operating Force: 260±50gf
5. Contact : 100mΩ
6. Life Cycles: 100,000 Cycles

JTP 1212





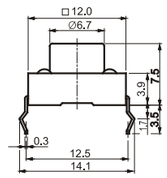


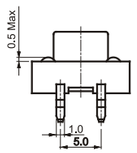


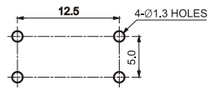
P.C.B HOLE DIMENSION

1. Contact: Mechanical Contact
2. Rating: DC 12V 50mA
3. Travel: 0.3±0.15mm
4. Operating Force: 160±50gf, 260±50gf
5. Contact Resistance: 100mΩ Max.
6. Life Cycles: 100,000 Cycles Min.

JTP 1212A







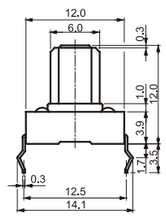
P.C.B HOLE DIMENSION

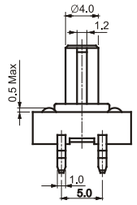
1. Contact: Mechanical Contact
2. Rating: DC 12V, 50mA
3. Travel: 0.3±0.15mm
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 100,000 Cycles Min.

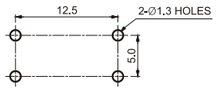
Operating Force	Stem Color
160±50gf	Black
260±50gf	Red

TACTILE SWITCHES

JTP 1212B





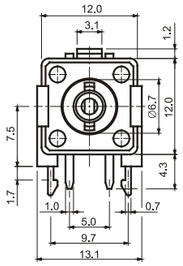


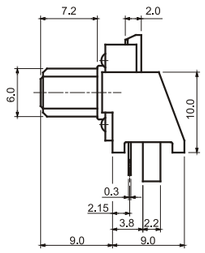
P.C.B HOLE DIMENSION

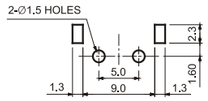
1. Contact: Mechanical Contact
2. Rating: DC 12V, 50mA
3. Travel: 0.3±0.15mm
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 100,000 Cycles Min.

Operating Force	Stem Color
160±50gf	Black
260±50gf	Red

JTP 1212BS





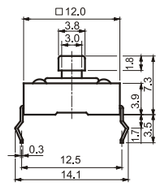


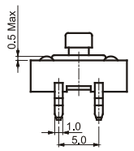
P.C.B HOLE DIMENSION

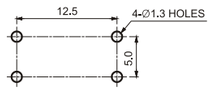
1. Contact: Mechanical Contact
2. Rating: DC 12V, 50mA
3. Travel: 0.3±0.15mm
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 100,000 Cycles Min.

Operating Force	Stem Color
160±50gf	Black
260±50gf	Red

JTP 1212F





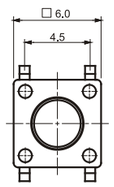


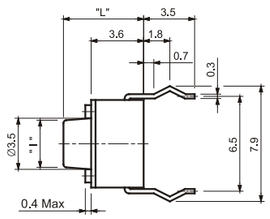
P.C.B HOLE DIMENSION

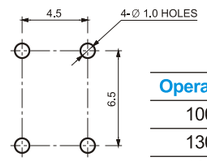
1. Contact: Mechanical Contact
2. Rating: DC 12V, 50mA
3. Travel: 0.3±0.15mm
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 100,000 Cycles Min.

Operating Force	Stem Color
160±50gf	Black
260±50gf	Red

JTP 1230







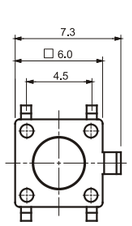
P.C.B HOLE DIMENSION

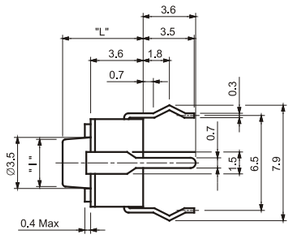
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 or 1,000,000 Cycles Min.

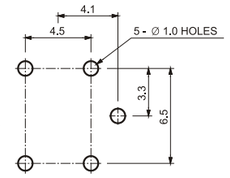
Operating Force	Stem Color
100±50gf	Brown
130±50gf	Gray
160±50gf	See Below
260±50gf	Red

MODEL NO.	JTP1230	JTP1230A	JTP1230B	JTP1230C	JTP1230D	JTP1230E	JTP1230F	JTP1230P	JTP1230L
L	4.3	5.0	9.5	8.0	13.0	7.3	7.0	8.5	17.0
COLOR	Black	Black	Black	White	Black	Ivory	Blue	Black	Black

JTP 1232







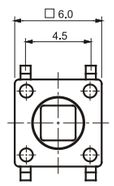
P.C.B HOLE DIMENSION

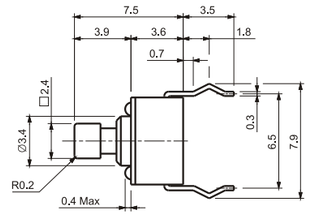
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.

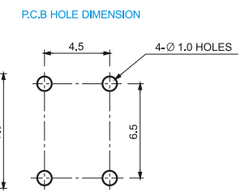
Operating Force	Stem Color
100±50gf	Brown
160±50gf	See Below
260±50gf	Red

MODEL NO.	JTP1232	JTP1232A	JTP1232B	JTP1232C	JTP1232D	JTP1232E	JTP1232F	JTP1232P	JTP1232L
L	4.3	5.0	9.5	8.0	13.0	7.3	7.0	8.5	17.0
COLOR	Black	Black	Black	White	Black	Ivory	Blue	Black	Black

JTP 1234







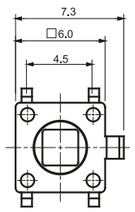
P.C.B HOLE DIMENSION

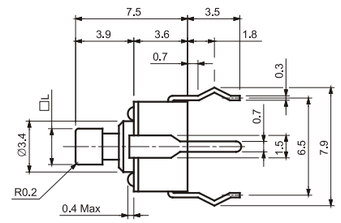
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.

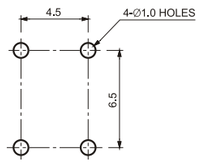
MODEL NO.	S
JTP 1234	□2.4
JTP 1234A	□2.8

Operating Force	Stem Color
100±50gf	Brown
160±50gf	Blue
260±50gf	Red

JTP 1235







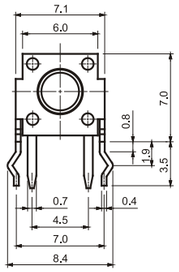
P.C.B HOLE DIMENSION

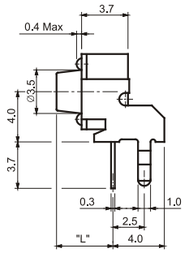
1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: $0.25^{+0.2}_{-0.1}$ mm
4. Operating Force: 160±50gf
5. Life Cycles: 100,000 Cycles

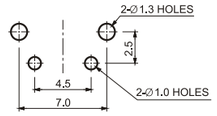
MODEL NO.	□ L	Stem Color
1235	2.4	Blue
1235A	2.8	Black

TACTILE SWITCHES

JTP 1236







P.C.B HOLE DIMENSION

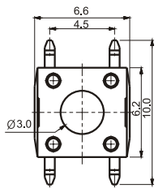
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.
   1,000,000 Cycles Min.

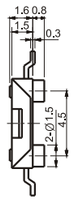
Operating Force	Stem Color
100±50gf	Brown
160±50gf	See Below
260±50gf	Red

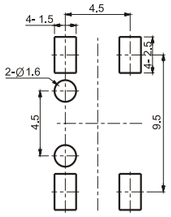
* JTP 1236HAP : Without Bracket

MODEL NO.	JTP1236	JTP1236A	JTP1236B	JTP1236C	JTP1236D	JTP1236E	JTP1236F	JTP1236P	JTP1236L
L	3.15	3.85	8.35	6.85	11.85	6.15	5.85	7.35	15.85
COLOR	Black	Black	Black	White	Black	Ivory	Blue	Black	Black

JTP 1237





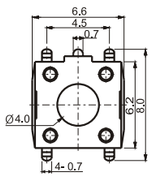


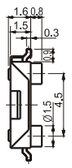
P.C.B LAND DIMENSION

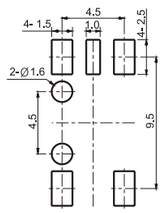
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Operating Force: 100^{+50}_{-0}gf Only
4. Life Cycles: 100,000 Cycles Min.

MODEL NO.	EARTH TERMINAL
JTP 1237	Without
JTP 1237E	With

JTP 1237AE





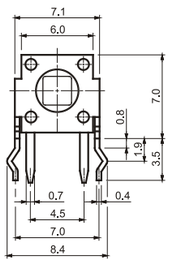


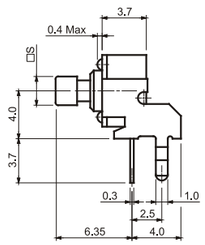
P.C.B LAND DIMENSION

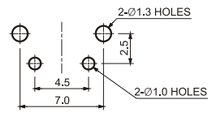
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Operating Force: 100^{+50}_{-0}gf Only
4. Life Cycles: 100,000 Cycles Min.

MODEL NO.	EARTH TERMINAL
JTP 1237A	Without
JTP 1237AE	With

JTP 1239







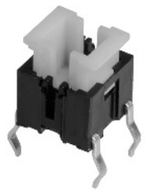
P.C.B HOLE DIMENSION

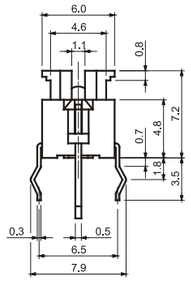
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.

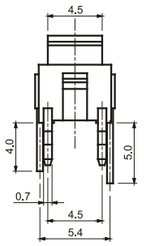
Operating Force	Stem Color
100±50gf	Brown
160±50gf	Blue
260±50gf	Red

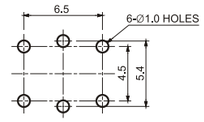
MODEL NO.	S
JTP 1239	□2.4
JTP 1239A	□2.8

JTP 1240, R.G.Y









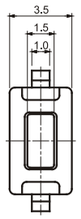
P.C.B HOLE DIMENSION

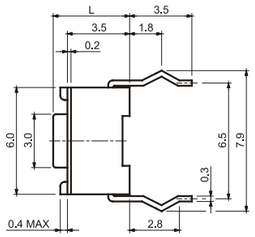
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles Min.

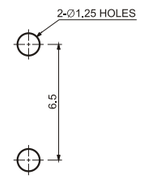
Operating Force	Stem Color
160±50gf	White
260±50gf	Gray

MODEL NO.	COLOR(LED)
JTP 1240	Without LED
JTP 1240RHT	High-Red
JTP 1240GT	Green
JTP 1240YT	Yellow

JTP 1243, JTP 1250W





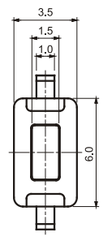


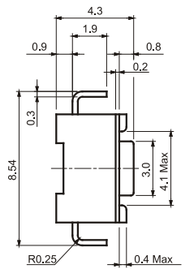
P.C.B HOLE DIMENSION

1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm

MODEL NO.	JTP1243H	JTP1243	JTP1243W	JTP1250H	JTP1250V	JTP1250W
L	4.3mm	4.3mm	4.3mm	5.0mm	5.0mm	5.0mm
Operating Force	130±50gf	180±50gf	260±50gf	130±50gf	180±50gf	260±50gf
Stem Color	Black	Black	Natural(White)	Natural(White)	Ivory	Natural(White)
Case Color	Natural(White)	Black	Natural(White)	Black	Black	Natural(White)
Life	50,000 Cycles	40,000 Cycles	30,000 Cycles	50,000 Cycles	40,000 Cycles	30,000 Cycles

JTP 1243E

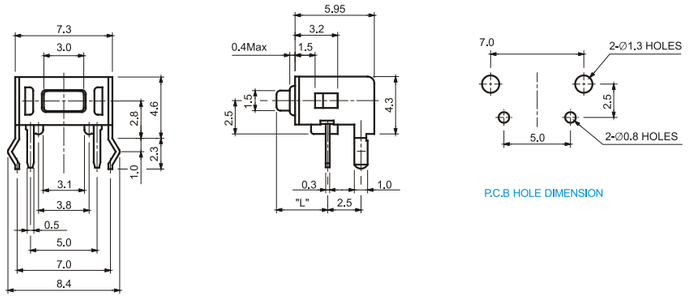




1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Operating Force: 130±50gf
4. Life Cycles: 50,000 Cycles Min.

TACTILE SWITCHES

JTP 1243V

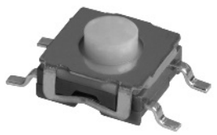


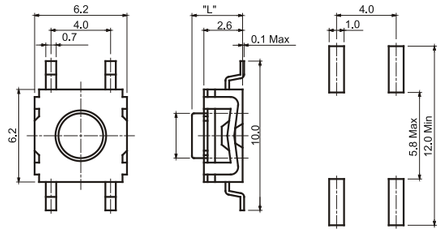
P.C.B HOLE DIMENSION

1. Rating: DC 12V, 50mA
2. Contact Resistance: 100mΩ Max.
3. Travel: 0.25 $^{+0.2}_{-0.1}$ mm
4. Operating Force: 180±50gf

MODEL NO.	JTP 1243V	JTP 1243VA	JTP 1243VB
L (mm)	3.15	3.85	4.05
Stem Color	Black	Black	Gray
Case Color	Black	Black	Black

JTP 1260



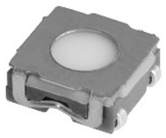


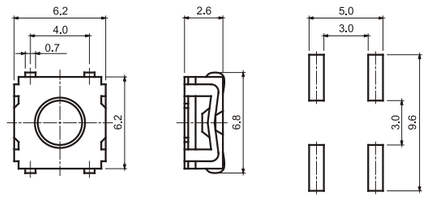
P.C.B LAND DIMENSION

1. Contact: Mechanical Contact
2. Travel: 0.25$^{+0.2}_{-0.1}$mm
3. Operating Force: 160±50gf, 260±50gf
4. Life Cycles: 100,000 Cycles Min.

MODEL NO.	L
JTP 1260	2.6
JTP 1260A	3.4

JTP 1260J



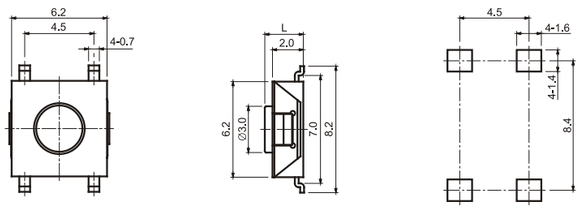


P.C.B LAND DIMENSION

1. Contact: Mechanical Contact
2. Travel: 0.25$^{+0.2}_{-0.1}$mm
3. Operating Force: 160±50gf, 260±50gf
4. Life Cycles: 100,000 Cycles Min.

MODEL NO.	L
JTP 1260	2.6
JTP 1260JA	3.4

JTP 1264

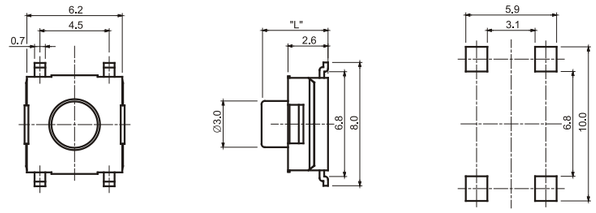


P.C.B LAND DIMENSION

1. Contact: Mechanical Contact
2. Rating: DC 12V, 50mA
3. Travel: 0.25$^{+0.2}_{-0.1}$mm
4. Contact Resistance: 50mmΩ Max.
5. JTP1164: Hole Contact Type

MODEL NO.	JTP1264K	JTP1264KA	JTP1264KE	JTP1264KAE	JTP1264HKE	JTP1264DKE	JTP1264KBE
L	2.5	2.0	2.5	2.0	2.5	2.5	3.1
Earth Terminal	X	X	O	O	O	O	O
Operating Force	160±50gf	160±50gf	160±50gf	160±50gf	100±50gf	50±15gf	160±50gf
Stem Color	Red	Red	Red	Red	Green	Ivory	Gray
Life	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	2,000,000	1,000,000

JTP 1263

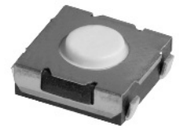


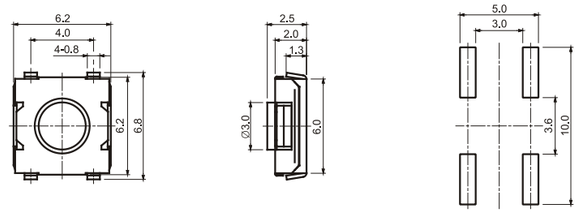
P.C.B LAND DIMENSION

1. Contact Resistance: 50mΩ Max.
2. Travel: 0.25 $^{+0.2}_{-0.1}$ mm
3. Life Cycles: 100,000 Cycles

MODEL NO.	JTP1263	JTP1263H	JTP1263W	JTP1263WAR
L (mm)	3.1	3.1	3.1	4.3
Operating Force	160±30gf	100±30gf	260±30gf	260±30gf
Stem Color	Ivory	Brown	Black	Red

JTP 1264DJ

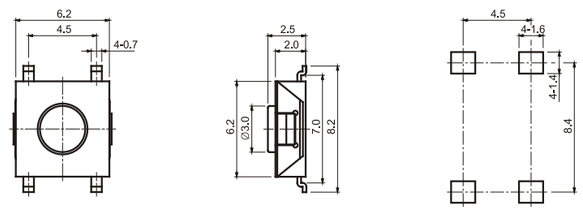




P.C.B LAND DIMENSION

1. Rating: 20mA, 15VDC(Max.)
2. Travel: 0.2±0.1mm
3. Operating Force: 50±15gf
4. Return Force: 10gf Min.
5. Contact Resistance: 100mΩ Max.
6. Life Cycles: 2,000,000 Cycles Min.

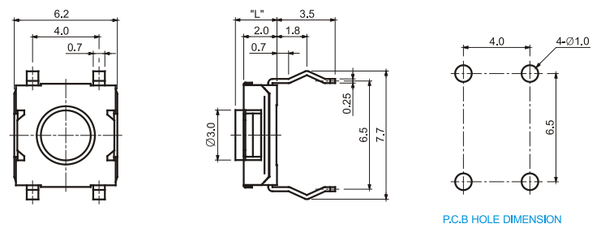
JTP 1264DK



P.C.B LAND DIMENSION

1. Rating: DC 12V, 50mA
2. Contact Resistance: 100mΩ Max.
3. Travel: 0.2±0.1mm
4. Operating Force: 50±15gf
5. Life Cycles: 2,000,000 Cycles

JTP 1265



P.C.B HOLE DIMENSION

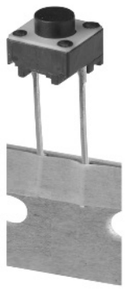
1. Rating: DC 15V, 20mA
2. Contact Resistance: 100mΩ Max.

MODEL NO.	JTP1265D	JTP1265H
L (mm)	2.5	2.5
Operating Force	50±15gf	100±30gf
Stem Color	Ivory	Green
Life Cycles	2,000,000	1,000,000
Travel	0.2±0.1	0.2±0.15/-0.1

TACTILE SWITCHES

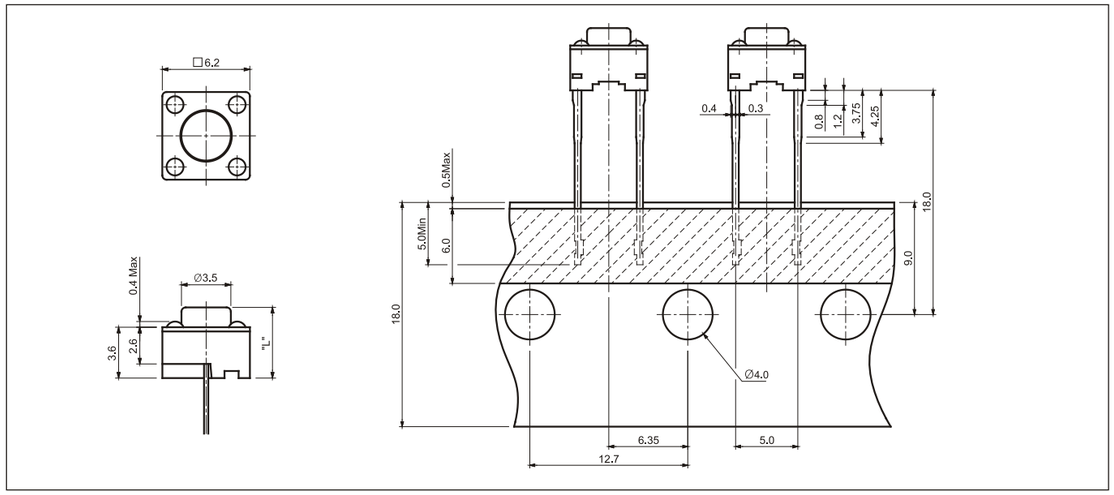
JTP 1280, JTP 1280A, JTP 1280B

JTP 1280



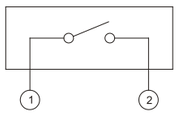
JTP 1280AP

JTP 1280B

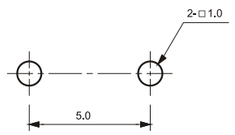


1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Life Cycles: 100,000 Cycles
   1,000,000 Cycles(JTP 1280K□Series)
4. JTP 1280□6: Hole Contact Type
   JTP 1280□: Non Hole Contact Type
   JTR 1280□: Rubber Stem Type

Circuit Diagram



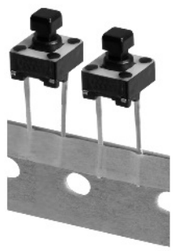
P.C.B Mounting Hole Dimension

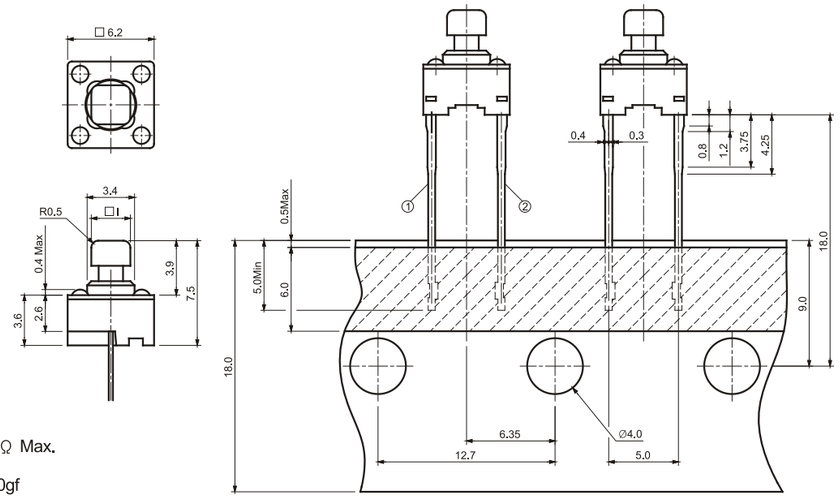


MODEL	Operating Force	Stem Color
JTP 1280H	100±30gf	Brown
JTP 1280X	130±50gf	Gray
JTP 1280	160±50gf	See Below
JTP 1280W	260±50gf	Red

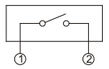
MODEL NO.	JTP 1280	JTP 1280A	JTP 1280B	JTP 1280C	JTP 1280D	JTP 1280E	JTP 1280F	JTP 1280N6	JTP 1280M
L	4.3	5.0	9.5	8.0	13.0	7.3	7.0	11.0	6.0
Stem Color	Black	Black	Black	White	Black	Ivory	Blue	Black	White

JTP 1284

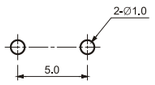




1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: $0.25^{+0.2}_{-0.1}$ mm
4. Operating Force: 160±50gf



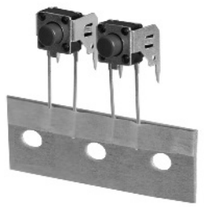
CIRCUIT DIAGRAM

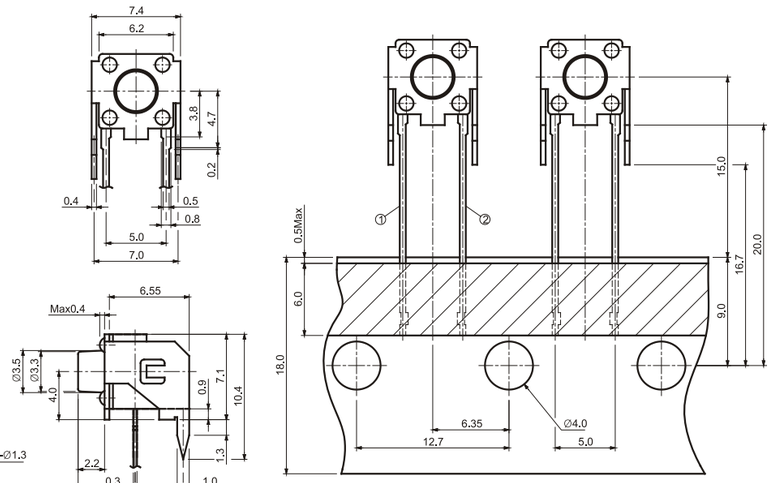


P.C.B HOLE DIMENSION

MODEL NO.	□ I	Stem Color
JTP 1284	2.4	Blue
JTP1284A	2.8	Black

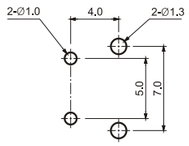
JTP 1285





1. Rating: DC 15V, 20mA
2. Contact Resistance: 50mΩ Max.
3. Travel: $0.25^{+0.2}_{-0.1}$mm
4. Operating Force: 160±50gf

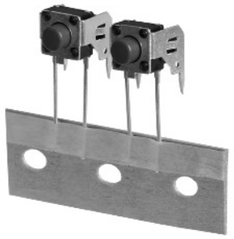
CIRCUIT DIAGRAM



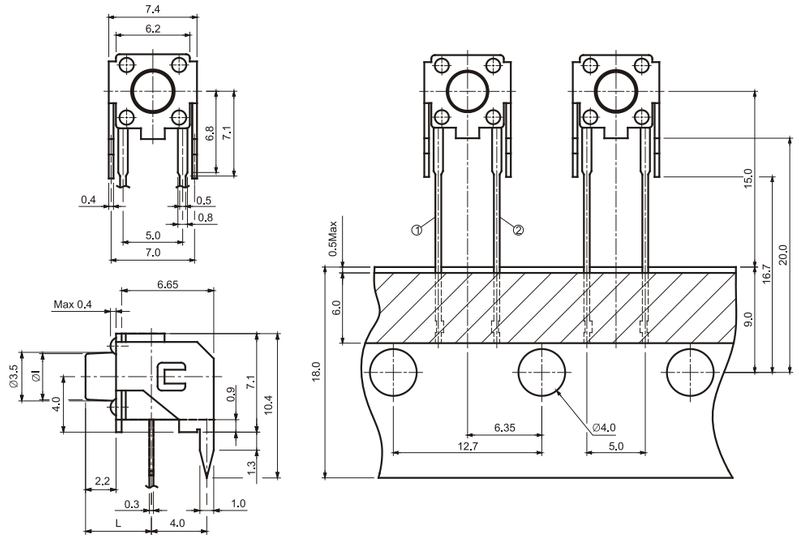
P.C.B HOLE DIMENSION

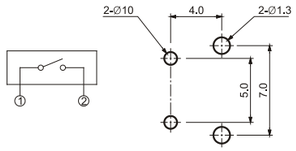
TACTILE SWITCHES

JTP 1286



1. Rating: DC 15V, 20mA
2. Contact Resistance: 50mΩ Max.
3. Travel: $0.25^{+0.2}_{-0.1}$ mm

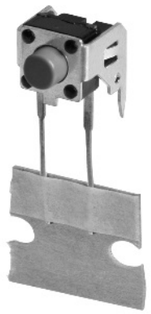




CIRCUIT DIAGRAM P.C.B HOLE DIMENSION

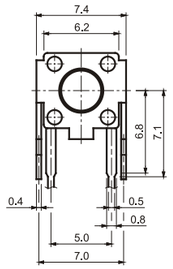
MODEL NO.	JTP 1286-31	JTP 1286HA	JTP 1286H	JTP 1286X	JTP 1286	JTP 1286W	JTP 1286C
L(mm)	3.15	3.85	4.75	4.75	4.75	4.75	6.85
I	Φ 3.5	Φ 3.5	Φ 3.3	Φ 3.3	Φ 3.3	Φ 3.3	Φ 3.2
Stem Color	Black	Brown	Brown	Dark Gray	Black	Red	White
Operating Force	160±50gf	100±30gf	100±30gf	130±30gf	160±50gf	260±50gf	160±50gf

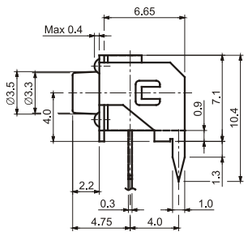
JTP 1289

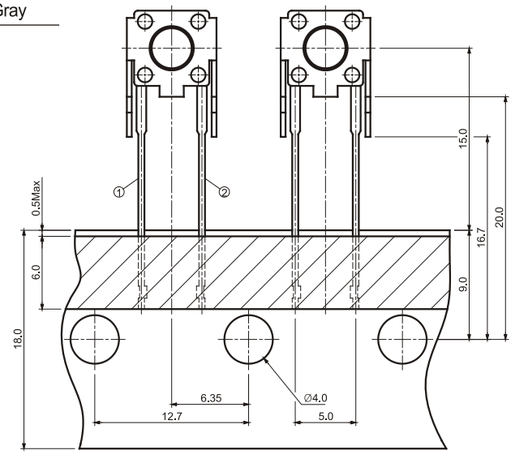


1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Life Cycles: 100,000 Cycles Min.
4. JTP 1289: Hole Contact Type

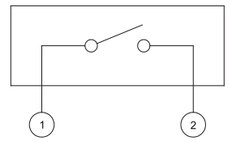
MODEL	Operating Force	Stem Color
JTP 1289X	130±30gf	Blue
JTP 1289	160±50gf	Dark Gray



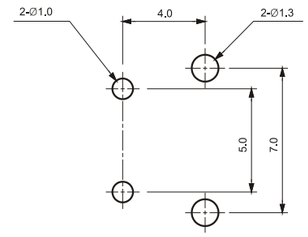




Circuit Diagram

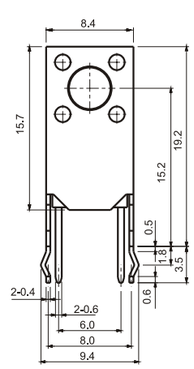


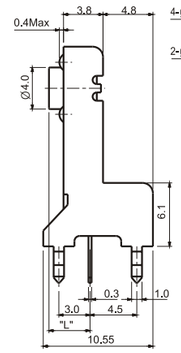
P.C.B Mounting Hole Dimension

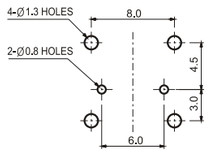


JTP 1288

1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$ mm
3. Life Cycles: 100,000 Cycles Min.
4. Auto Insert Type(P.C.B): 1288S Type







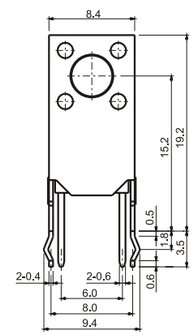
P.C.B HOLE DIMENSION

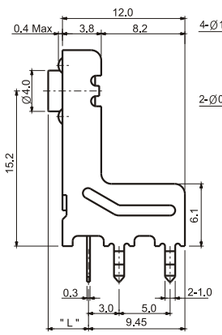
Operating Force	Stem Color
100±50gf	Brown
160±50gf	Blue
260±50gf	Red

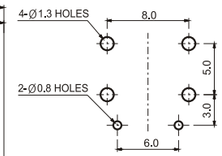
MODEL NO.	L
JTP 1288	3.95
JTP 1288A	8.35

JTP 1288ZH

1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: $0.25^{+0.2}_{-0.1}$ mm
4. Operating Force: 100±20gf
5. Life Cycles: 100,000Cycles



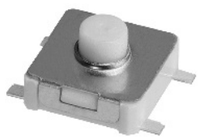


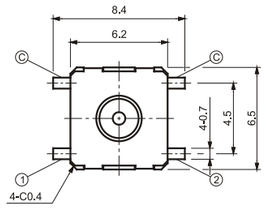


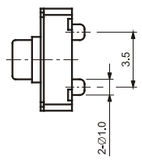
P.C.B HOLE DIMENSION

TACTILE SWITCHES

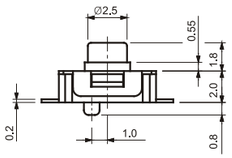
JTP 2100SW
(Double Action S/W)

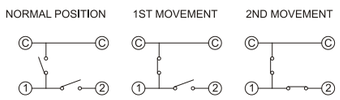




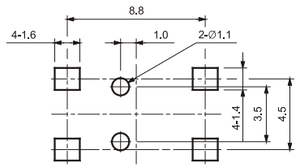


1. Rating: DC 30V, 20mA
2. Contact Resistance: 200mΩ Max.
3. Travel: 1st-0.3±0.1mm
   2nd-0.55±0.15mm
4. Life Cycles: 10,000 Cycles
5. Operating Force: 1st-100±40gf
   2nd-250±80gf



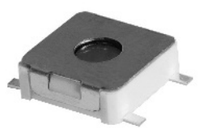


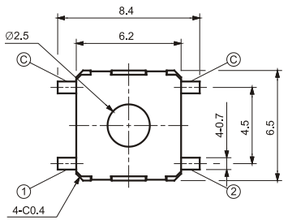
CIRCUIT DIAGRAM

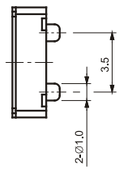


P.C.B HOLE DIMENSION

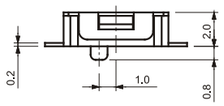
JTP 2100SWA
(Double Action S/W)

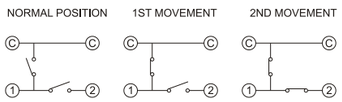




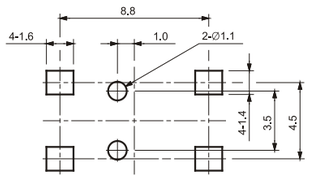


1. Rating: DC 30V, 20mA
2. Contact Resistance: 200mΩ Max.
3. Travel: 1st-0.3±0.1mm
   2nd-0.55±0.15mm
4. Life Cycles: 10,000 Cycles
5. Operating Force: 1st-100±40gf
   2nd-250±80gf



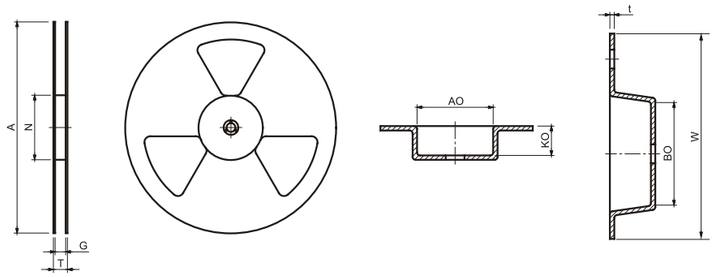


CIRCUIT DIAGRAM



P.C.B HOLE DIMENSION

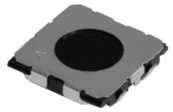
TAPING SPECIFICATION



MODEL NO.	REEL				POCKET							
	A	N	G	T	AO	BO	KO	t	W	PITCH	CAVITY	REMARK
JDS 1107LEM	330	100	16.4	21.4	7.9	6.8	2.75	0.4	16	12	1,500	
JDS 2107L(R)EM	330	100	24.4	29.4	13.9	9.20	2.7	0.4	24	12	1,500	
JDS 1108EM, AEM	330	60	16.4	21.4	7.7	8.4	3.15	0.3	16	12	1,900	
JDS 1108PEM	330	60	16.4	21.4	7.7	8.75	4.65	0.3	16	12	1,200	
JDS 1108REM	330	60	16.4	21.4	7.7	8.4	3.15	0.3	16	12	1,900	
JDS 4100EM	330	60	16.4	21.4	6.6	10.4	4.0	0.4	16	12	1,400	
JTP 1100EM	330	60	16.4	21.4	7.2	7.8	3.0	0.3	16	12	2,000	
JTP 1127EM	330	100	14.0	18.0	4.85	6.8	2.0	0.3	12	8	4,000	
JTP 1133REM	330	100	14.0	18.0	3.9	4.9	4.2	0.4	12	8	2,000	
JTP 1134S, SAEM	330	100	26.0	30.0	6.5	10.4	7.85	0.4	24	12	750	
JTP 1138AEM	330	60	16.4	21.4	6.6	10.5	5.2	0.4	16	12	1,000	
JTP 1138A6EM	330	60	16.4	21.4	6.6	10.5	5.2	0.4	16	12	1,200	
JTP 1138BEM	330	100	6.0	30.0	6.4	10.8	9.65	0.4	24	12	500	
JTP 1138EM	330	60	16.4	21.4	6.5	10.5	4.5	0.4	16	12	1,200	
JTP 1138FEM	330	100	26.0	30.0	6.5	10.4	7.85	0.4	24	12	750	
JTP 1138J, JAEM	330	60	16.4	21.4	6.3	7.0	5.5	0.5	16	12	1,100	
JTP 1138KEAEM	330	60	16.4	21.4	6.5	10.2	5.2	0.4	16	12	1,200	
JTP 1138MEM	330	100	26.0	30.0	6.4	10.3	6.45	0.4	24	12	800	
JTP 1138PEM	330	100	26.0	31.0	6.5	10.5	9.0	0.4	24	12	650	
JTP 1138REM	330	60	16.4	21.4	6.4	6.4	5.0	0.5	16	12	1,200	
JTP 1140EM	330	100	14.0	18.0	5.4	6.9	2.1	0.3	12	8	4,000	
JTP1143J, SEM	330	60	16.4	21.4	3.9	11.0	5.2	0.4	16	8	1,800	
JTP 1144WREM	330	100	16.4	21.4	4.0	8.2	3.75	0.4	16	8	2,300	
JTP 1146EM	330	100	14.0	18.0	5.1	5.1	0.8	0.3	12	8	6,500	
JTP 1150J, SEM	330	60	16.4	21.4	3.9	11.0	5.2	0.4	16	8	1,800	
JTP 1152EM	330	100	16.4	21.4	6.0	4.9	1.0	0.3	12	8	5,000	
JTP 1156,JEM	330	100	16.4	21.4	4.3	7.7	2.8	0.3	16	18	2,500	
JTP 1161AEM	330	100	26.0	31.0	7.0	8.4	4.5	0.4	16	12	1,200	
JTP 1164EM	330	60	16.4	21.4	6.6	8.5	2.8	0.4	16	12	2,000	
JTP 1237A, AEEM	330	60	16.4	21.4	7.5	8.9	2.75	0.3	16	12	2,200	
JTP 1237EM	330	60	16.4	21.4	7.5	10.5	2.75	0.3	16	12	2,200	
JTP 1243EEM	330	100	16.4	21.4	4.6	9.1	4.0	0.4	16	8	2,000	
JTP 1260AEM	330	60	16.4	21.4	6.7	10.7	3.9	0.4	16	12	1,500	
JTP 1260JAEM	330	60	16.4	21.4	7.0	7.4	3.8	0.3	16	12	1,600	
JTP 1260JEM	330	60	16.4	21.4	7.1	7.5	3.25	0.3	16	12	1,900	
JTP 1261G, KEM	330	60	16.4	21.4	7.0	8.5	3.6	0.4	16	12	1,500	
JTP 1264DJEM	330	100	12.4	17.4	6.75	7.25	2.9	0.3	12	8	2,800	
JTP 1264EM	330	60	16.4	21.4	6.6	8.5	2.8	0.4	16	12	2,000	
JTP 1290AEM	330	60	16.4	21.4	5.8	6.0	2.8	0.3	16	12	2,200	
JTP 2100EM	330	100	16.4	21.4	6.9	8.8	4.15	0.5	16	12	1,200	
JTP 2120EM	330	60	14.0	18.0	6.3	6.4	1.7	0.3	12	8	5,000	
JTM 4175EM	330	100	16.4	21.4	7.9	7.9	6.2	0.4	16	12	750	
JTS 1112SEM	330	60	26.0	30.0	12.7	16.0	4.7	0.4	24	16	650	
JTS 1112SFEM	330	100	26.0	30.0	12.7	16.0	7.7	0.4	24	16	450	
JTS 1135WSAEM	330	100	16.4	21.4	6.6	8.35	6.9	0.4	16	12	850	
JTS 1138AEM	330	60	16.4	21.4	6.6	10.5	5.2	0.4	16	12	1,200	
JTS 1143HJEM	330	100	26.0	30.0	4.9	10.8	4.3	0.4	24	8	1,800	
JTS 1150HJEM	330	100	26.0	30.0	4.9	10.8	5.0	0.4	24	8	1,700	
JTS 1230SEM	330	100	26.0	31.0	7.8	10.6	5.3	0.4	16	12	1,000	
JTS 1260, AEM	330	100	26.0	30.0	6.6	10.7	4.0	0.4	24	12	1,400	
JTS 1261EM	330	100	26.0	31.0	7.8	10.5	3.4	0.4	16	12	1,700	
JSS 1267EM	330	100	16.4	21.4	5.8	8.0	2.4	0.4	16	8	3,000	
JSE SMT SERIES	330	60	26.0	30.0	13.1	15.45	6.3	0.4	24	16	750	

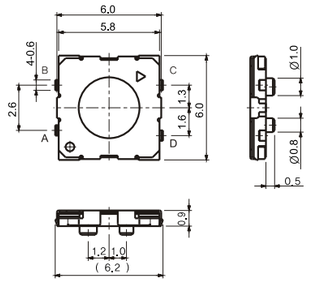
TACTILE SWITCHES

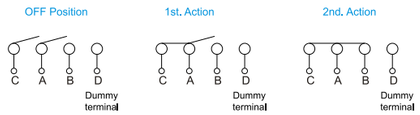
JTP 2120



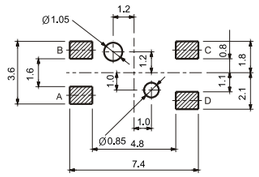
1. Rating: DC 12V, 50mA
2. Contact Resistance: 100mΩ Max.
3. Travel: 1st-0.4±0.15mm
   2nd-0.6±0.15mm
4. Life Cycles: 30,000 Cycles

MODEL NO.	Guide Boss	Operating Force		Case Color
		1st	2nd	
JTP 2120	Without Boss	70±30gf	160±50gf	Black
JTP 2120P	With Boss			
JTP 2120W	Without Boss	70±30gf	260±50gf	Ivory
JTP 2120WP	With Boss			

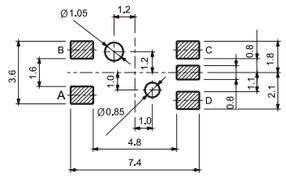




CIRCUIT DIAGRAM

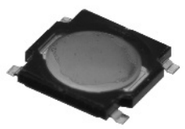


P.C.B SOLDER LAND DIMENSION
[Without Earth]

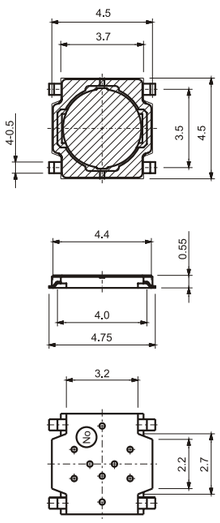


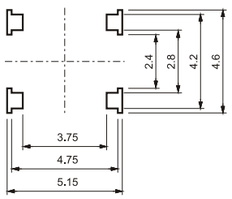
P.C.B SOLDER LAND DIMENSION
[With Earth]

JTP 1152

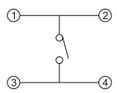


1. Rating: DC 15V, 50mA
2. Travel: 0.2±0.1mm
3. Contact Resistance: 200mΩ Max.





P.C.B MOUNTING SOLDER LAND DIMENSION

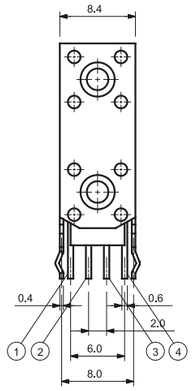


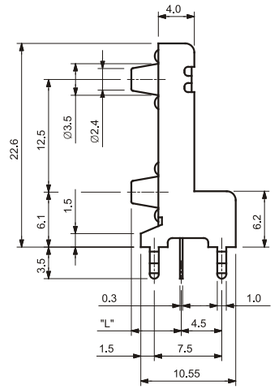
CIRCUIT DIAGRAM

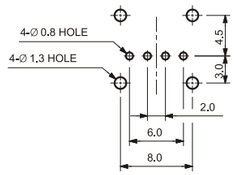
MODEL NO.	JTP 1152	JTP 1152H	JTP 1152W
Operating Force	160±50gf	100±30gf	250±50gf
Case Color	Black	Dark Gray	Brown
Life Cycles	500,000	1,000,000	200,000

JTP 2230

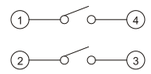
1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: 0.25+0.2 / -0.1mm
4. Life Cycles: 100,000 Cycles







P.C.B HOLE DIMENSION



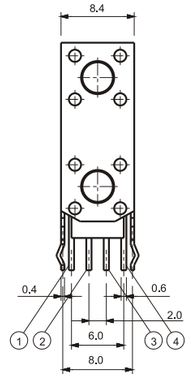
CIRCUIT DIAGRAM

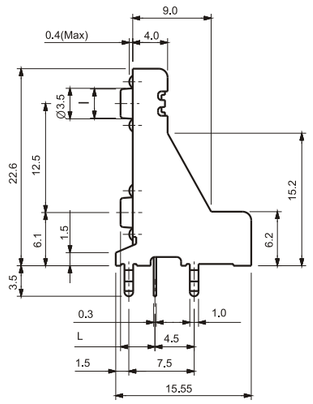
Operating Force	Stem Color
100±30gf	Brown
250±50gf	Red

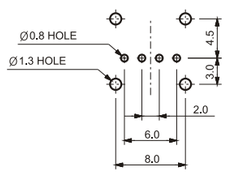
MODEL NO.	JTP 2230	JTP 2230A	JTP 2230B	JTP 2230C	JTP 2230D	JTP 2230E	JTP 2230F	JTP 2230P	JTP 2230L
L (mm)	3.15	3.85	8.35	6.85	11.85	6.15	5.85	7.35	15.85
I	3.50	3.50	3.10	3.20	2.87	3.25	3.30	3.09	2.80
Stem Color	Black	Black	Black	White	Black	Ivory	Blue	Black	Black
Operating Force	160±50gf								

JTP 2231□ 6

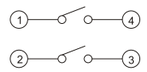
1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: 0.25+0.2/ -0.1mm
4. Operating Force: 160±50gf
5. Life Cycles: 100,000 Cycles







P.C.B HOLE DIMENSION



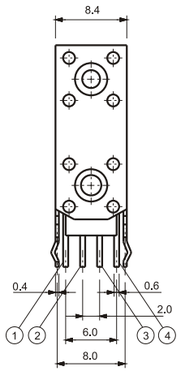
CIRCUIT DIAGRAM

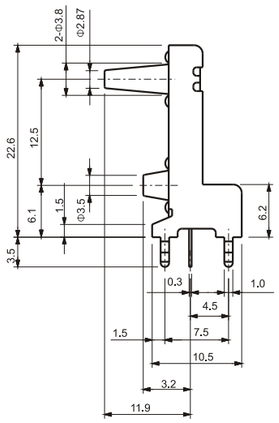
MODEL NO.	JTP 2231A6	JTP 2231F6
L (mm)	3.95	5.85
I	3.5	3.3
Stem Color	Black	Black

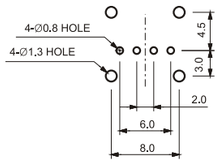
TACTILE SWITCHES

JTP 2232D

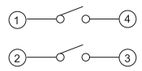
1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: 0.25+0.2 / -0.1mm
4. Operating Force: 160±50gf
5. Life Cycles: 100,000 Cycles





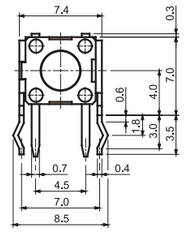


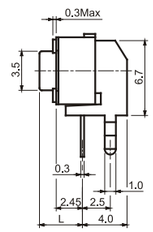
P.C.B HOLE DIMENSION

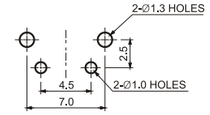


CIRCUIT DIAGRAM

JTP 32-11







P.C.B HOLE DIMENSION

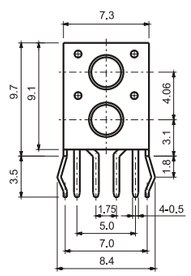
1. Contact : Mechanical Contact
2. Travel: 0.25 $^{+0.2}_{-0.1}$ mm
3. Life Cycles: 100,000 Cycles Min.

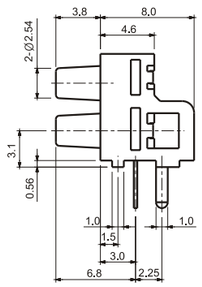
Operating Force	Stem Color
100±30gf	Brown
160±50gf	See Below
260±50gf	Red

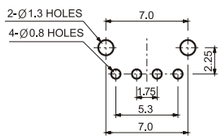
MODEL NO.	JTP32-11	JTP32-11A	JTP32-11B	JTP32-11C	JTP32-11D	JTP32-11E	JTP32-11F	JTP32-11P	JTP32-11L
L	3.15	3.85	8.35	6.85	11.85	6.15	5.85	7.35	15.85
COLOR	Black	Black	Black	White	Black	Ivory	Blue	Black	Black

JTP 2243

1. Contact: Mechanical Contact
2. Rating: DC 12V, 50mA
3. Travel: 0.25$^{+0.2}_{-0.1}$mm
4. Contact Resistance: 100mΩ Max
5. Operating Force: 180±50gf
6. Life Cycles: 30,000 Cycles Min.
7. Stem Color: Black

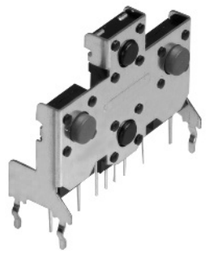




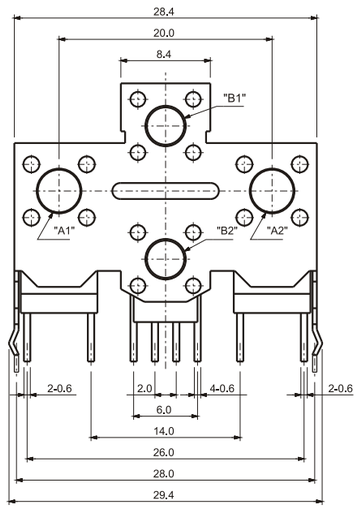


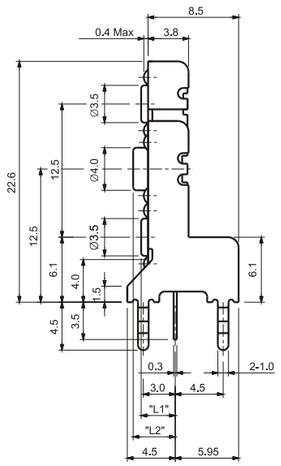
P.C.B HOLE DIMENSION

JTP 4188



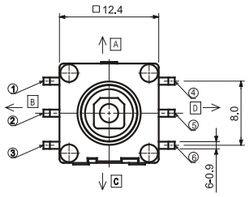
1. Rating: DC 12V, 50mA
2. Contact Resistance: 50mΩ Max.
3. Travel: 0.25+0.2 / -0.1mm
4. Operating Force: "A1, A2"-100±20gf
   "B1, B2"-160±50gf
5. Life Cycles: 100,000Cycles

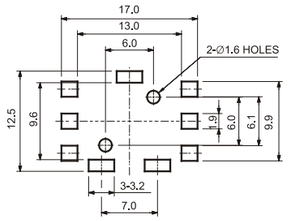




TACTILE SWITCHES MULTI WAY

JTM 4130



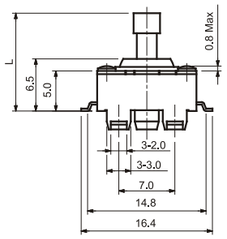


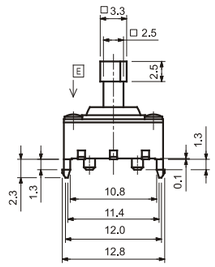
P.C.B LAND DIMENSION

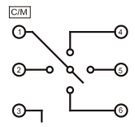
1. Contact: Mechanical Contact
2. Rating: DC 15V, 20mA
3. Travel: Lever : 8°±2°
   Push : 1.0±0.2mm
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 100,000 Cycles Min.
6. Operating Force: Center push: 500±150gf
   4-Directional: 280±100gf

MODEL NO.	L
JTM 4130	12.2
JTM 4130A	14.2
JTM 4130B	10.5

Operating Direction of Stem	Circuit Connection
A	1=4
B	1=2
C	1=6
D	1=5
E(PUSH)	1=3

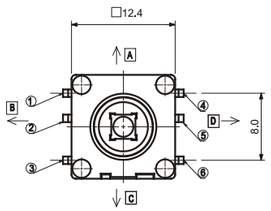


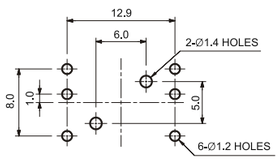




PUSH ON CIRCUIT DIAGRAM

JTM 4131A

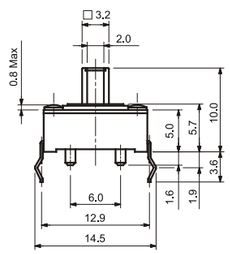


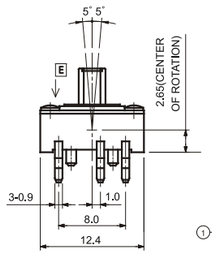


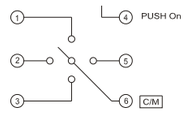
P.C.B HOLE DIMENSION

1. Contact: Mechanical Contact
2. Rating: DC 15V, 20mA
3. Travel: Lever: 5°+3°/−1°
   Push: 0.25±0.2mm
4. Contact Resistance: 100mΩ Max.
5. Life Cycles: 50,000 Cycles Min.
6. Operating Force: Center push: 350^{+100}_{-50}gf
   4-Directional: 250^{+70}_{-50}gf

Operating Direction of Stem	Circuit Connection
A	1=6
B	2=6
C	3=6
D	5=6
E(PUSH)	4=6





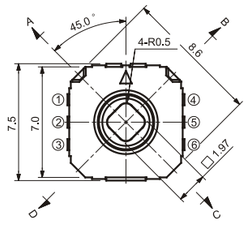


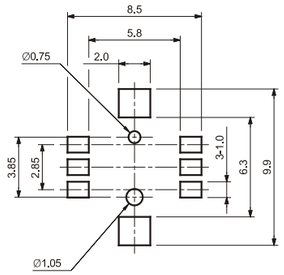
CIRCUIT DIAGRAM

JTM 4175

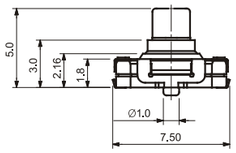
1. Rating: DC12V, 50mA Max.
2. Contact Resistance: 500mΩ Max.
3. Operating Spec.
   1) Center Push
      a) Operating Force: 260±70gf
      b) Stroke: 0.15±0.1mm
   2) 4-Way Direction
      a) Operating Force: 160±50gf
      b) Stroke: 0.2±0.1mm
4. Life Cycles: 200,000 Cycles

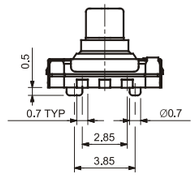
MODEL NO.	Guide Boss
JTM 4175	Without Boss
JTM 4175P	With Boss

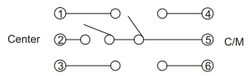




P.C.B LAND DIMENSION







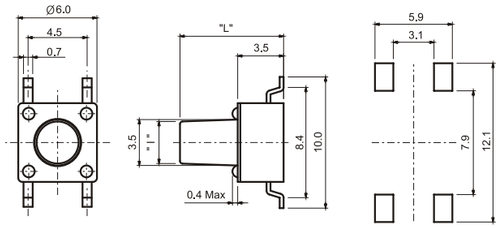
CIRCUIT DIAGRAM

Operating Direction	Circuit	Remarks
A	⑤ = ①	
B	⑤ = ④	
C	⑤ = ⑥	
D	⑤ = ③	
Center push	⑤ = ②	

TACTILE SWITCHES SEALED

JTS 1138

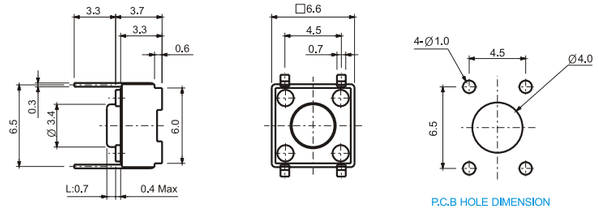
1. Contact: Mechanical Contact
2. Rating: DC 12V, 50mA
3. Travel: 0.2±0.1mm
4. Operating Force: 160±50gf
5. Contact: 100mΩ
6. Life Cycles: 1,000,000 Cycle



P.C.B LAND DIMENSION

JTS 1230US

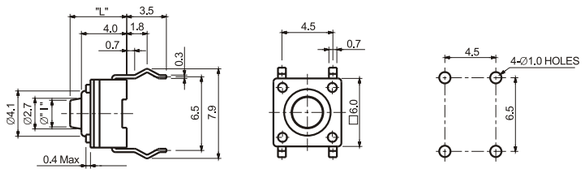
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Operating Force: 160±50gf
4. Life Cycles: 100,000 Cycles Min.



P.C.B HOLE DIMENSION

JTS 1230A

1. Contact: Mechanical Contact
2. Travel: 0.35±0.2mm
3. Operating Force: 160±50gf, 250^{+100}_{-50}gf
4. Life Cycles: 100,000 Cycles Min.



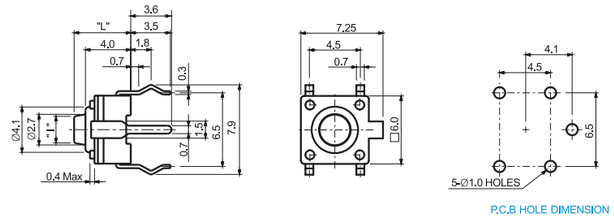
P.C.B HOLE DIMENSION

Operating Force	Stem Color
160±50gf	Black
260±50gf	Red

MODEL	L	I	Stem Color
JTS 1230A	5.0	2.70	Black
JTS 1230C	8.0	2.35	
JTS 1230F	6.9	2.35	

JTS 1232

1. Contact: Mechanical Contact
2. Travel: 0.35±0.2mm
3. Operating Force: 160±50gf, 250^{+100}_{-50}gf
4. Life Cycles: 100,000 Cycles Min.
5. Contact Resistance: 100mΩ Max.



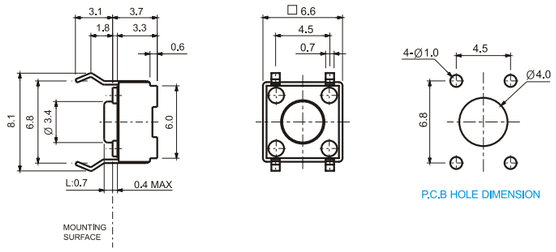
P.C.B HOLE DIMENSION

Operating Force	Stem Color
160±50gf	Black
260±50gf	Red

MODEL	L	I	Stem Color
JTS 1232	5.0	2.70	Black
JTS 1232C	8.0	2.35	

JTS 1230U

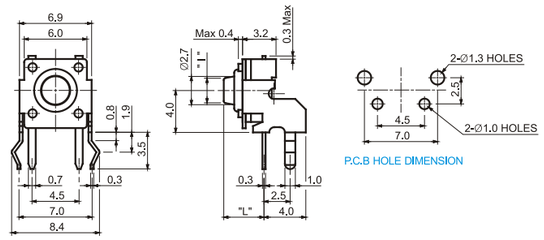
1. Contact: Mechanical Contact
2. Travel: $0.25^{+0.2}_{-0.1}$mm
3. Operating Force: 160±50gf
4. Life Cycles: 100,000 Cycles Min.
5. Contact Resistance: 100mΩ Max.



P.C.B HOLE DIMENSION

JTS 1236

1. Contact: Mechanical Contact
2. Travel: 0.35±0.2mm
3. Operating Force: 160±50gf, 250^{+100}_{-50}gf
4. Life Cycles: 100,000 Cycles Min.



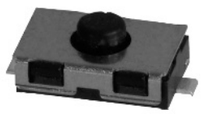
P.C.B HOLE DIMENSION

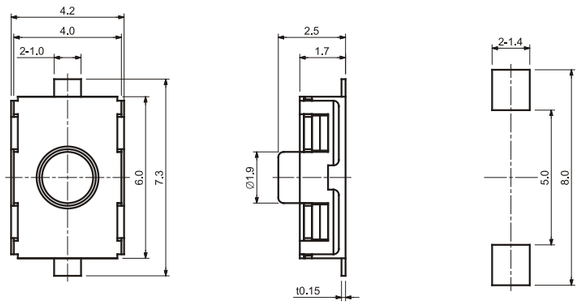
Operating Force	Stem Color
160±50gf	Black
260±50gf	Red

MODEL	L	I	Stem Color
JTS 1236	3.85	2.70	Black
JTS 1236C	6.85	2.35	

TACTILE SWITCHES RUBBER STEM

JTR 1156



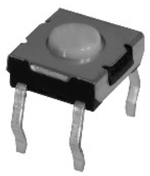


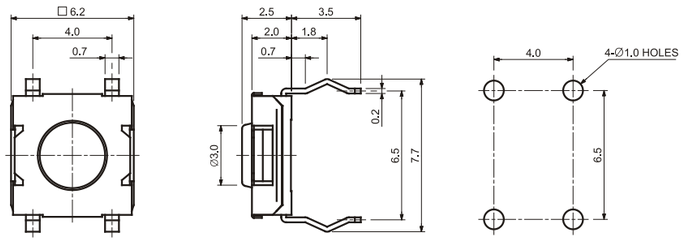
P.C.B LAND DIMENSION

1. Rating: DC 32V 50mA
2. Contact Resistance: 100mΩ Max.
3. Travel: 0.5±0.15mm
4. Life Cycles: 100,000 Cycles

MODEL NO.	Stem Color	Operating Force
JTR 1156	BLACK	160±50gf
JTR 1156W	RED	260±50gf

JTR 1265H

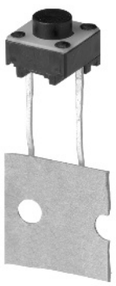


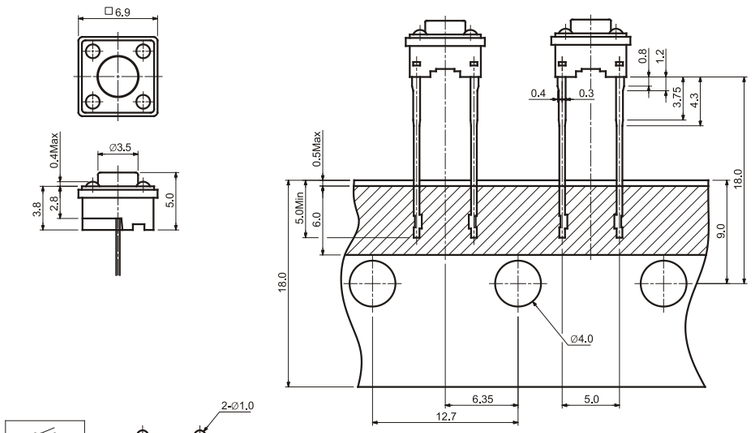


P.C.B HOLE DIMENSION

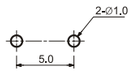
1. Rating: DC 15V 20mA
2. Contact Resistance: 100mΩ Max.
3. Travel: 0.35±0.15mm
4. Operating Force: 100±30gf
5. Life Cycles: 1,000,000 Cycles

JTR 1280HA





CIRCUIT DIAGRAM

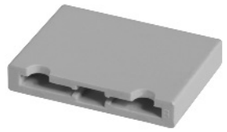


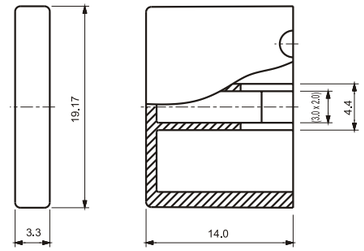
P.C.B HOLE DIMENSION

1. Rating: DC 12V 50mA Max.
2. Contact Resistance: 100mΩ Max.
3. Travel: 0.3 +0.2/−0.1mm
4. Operating Force: 100+70/−50gf
5. Life Cycles: 100,000 Cycles

BUTTON

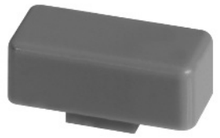
JC 0320

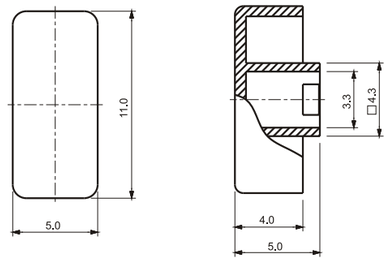




MODEL NO.	COLOR
JC 0320WH	White
JC 0320BA	Black
JC 0320RE	Red
JC 0320IV	Ivory
JC 0320BL	Blue
JC 0320GR	Gray

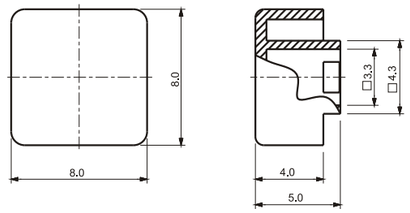
JC 0511





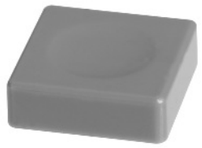
MODEL NO.	COLOR
JC 0511WH	White
JC 0511BA	Black
JC 0511RE	Red
JC 0511IV	Ivory
JC 0511BL	Blue
JC 0511GR	Gray

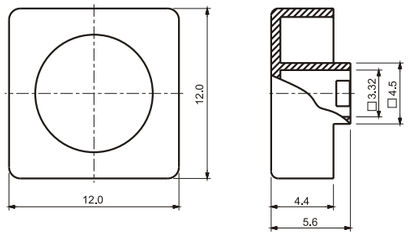
JC 0808



MODEL NO.	COLOR
JC 0808WH	White
JC 0808BA	Black
JC 0808RE	Red
JC 0808IV	Ivory
JC 0808BL	Blue
JC 0808GR	Gray

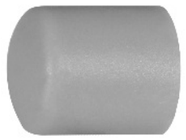
JC 1212

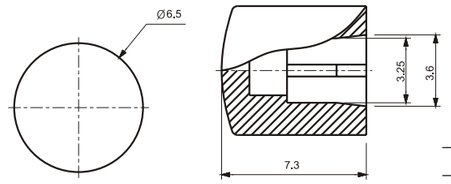




MODEL NO.	COLOR
JC 1212WH	White
JC 1218BA	Black
JC 1212RE	Red
JC 1212GIV	Ivory
JC 1212BL	Blue
JC 1212GR	Gray

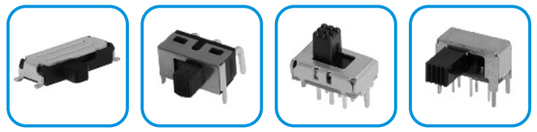
JC 2254





MODEL NO.	COLOR
JC 2254	Gray

SLIDE SWITCHES



CONTENTS

SPECIFICATIONS · · · · · 33

SLIDE SWITCHES · · · · · 34

Common Specifications

1. Rating : As per Individual Specifications

2. Electrical Performance

Item	Test Condition	Performance
Contact Resistance	DC 5V 1A	50mΩ Max.
Insulation Resistance	DC 500V for 1 minute	100MΩ Min.
Withstanding Voltage	AC 500V for 1 minute	Shall be Free from Dielectric Breakage

3. Mechanical Performance

Item	Test Condition	Performance
Operating Force		As per Individual Specifications
Terminal Strength	500gf for 1minute	No Terminal Rejection and Insulator Breakage
Lever Strength	2kgf for 15 seconds	No Deformation and Mechanical Problem Found

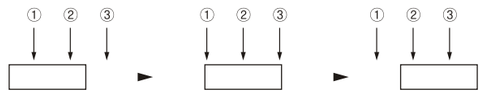
4. Endurance

Item	Test Condition	Performance
Life Test	10,000 Cycles Operations(15-20 Cycles/Minute) Without Load	· Contact Resistance : 100mΩ Max. · Operating Force : +10%, -30% Initial Value · Insulation Resistance : 10MΩ Min. · Withstand Voltage : AC 250V for 1Minute
Cold Proof	-30±3℃ for 96±5 Hours After Test, Kept in Normal Condition for 1Hour, to be Measured within 1Hour	Equality to Initial Specifications
Dry Heat Proof	85±2℃ 96±5 Hours After Test, Kept in Normal Condition for 1Hour, to be Measured within 1Hour	Equality to Initial Specifications
Moisture Resistance	60±2℃ 90-95% RH 96 Hours After Test, Kept in Normal Condition for 1Hour, to be Measured within 1Hour	Equality to Initial Specifications

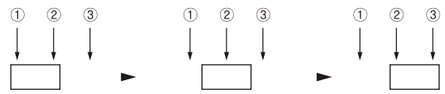
5. Solder Heat Resistance : Auto Soldering : 260±5℃ / 5±1 Seconds
Manual Soldering : 350±10℃ / 3 Seconds

Explanation of Change over Timing

Shorting	Non-Shorting
Switching action is accomplished after electrical connections have been made once across terminals during circuit selection. (Terminals ①,② and ③ electrically connected once)	Electrical connections are turned off once across terminals during circuit selection. (Terminals ①,② and ③ electrically connected once)

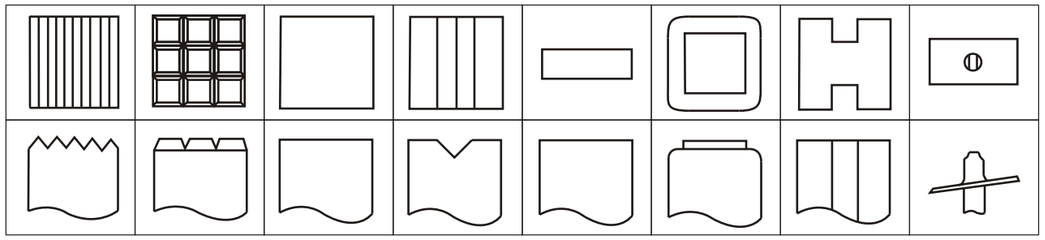


Stationary position — In course of switching — After switching



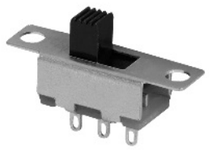
Stationary position — In course of switching — After switching

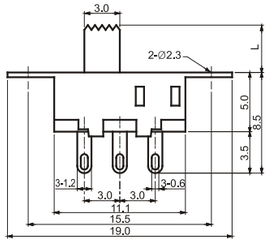
Knob Styles

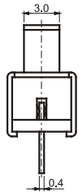


SLIDE SWITCHES

JSS 1201



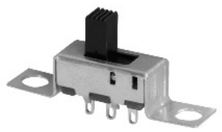


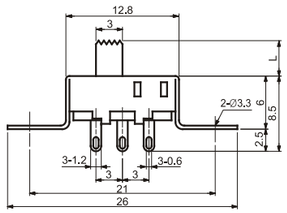


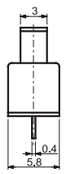
1. Rating: DC 30V 0.2A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 3mm
5. Operating Force: 200±100gf
6. Terminal: Lead Wiring or P.C. Board Terminal

MODEL NO.	L
JSS 1201 B040	4
JSS 1201 B055	5.5

JSS 1205



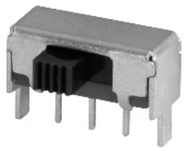


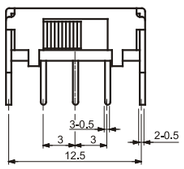


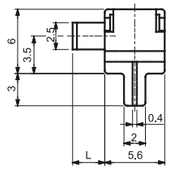
1. Rating: DC 30V 0.2A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 3mm
5. Operating Force: 200±100gf
6. Terminal: Lead Wiring or P.C. Board Terminal

MODEL NO.	L
JSS 1205 B040	4
JSS 1205 B055	5.5

JSS 1206



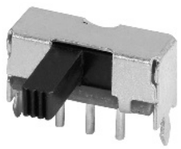


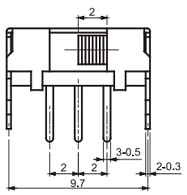


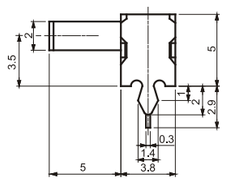
1. Rating: DC 30V 0.2A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2.5mm
5. Operating Force: 200±50gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 1206 S030	3
JSS 1206 S060	6

JSS 1213(VO)

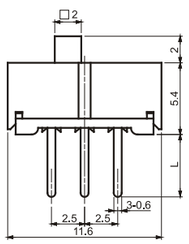


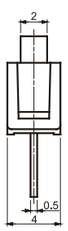




1. Rating: DC 30V 0.2A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 200±100gf
6. Terminal: P.C. Board Terminal

JSS 1218

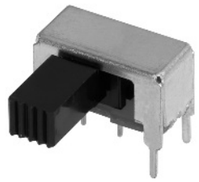


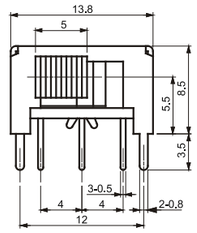


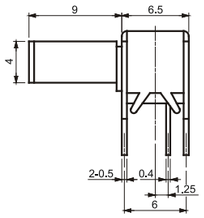
1. Rating: DC 30V 0.2A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2.5mm
5. Operating Force: 250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 1218	4.7
JSS 1218A	3.4

JSS 1219

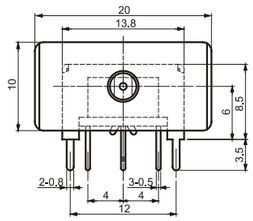


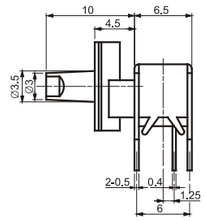




1. Rating: DC 15V 0.5A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 250±100gf
6. Terminal: P.C. Board Terminal

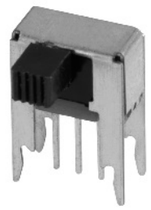
JSS 1219A

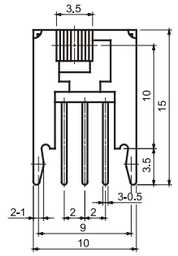


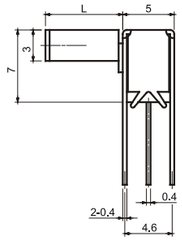


1. Rating: DC 15V 0.5A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 200$^{+150}_{-100}$gf
6. Terminal: P.C. Board Terminal

JSS 1246



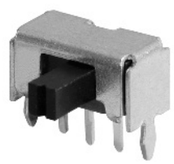


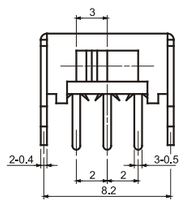


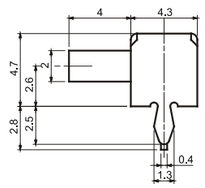
1. Rating: DC 12V 0.1A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 350±150gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 1246	5.0
JSS 1246A	7.5

JSS 1247

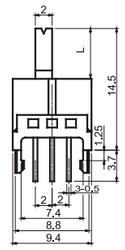


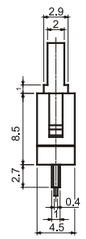




1. Rating: DC 30V 0.2A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 250±150gf
6. Terminal: P.C. Board Terminal

JSS 1248N



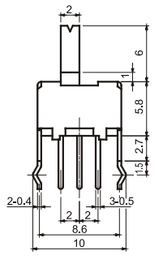


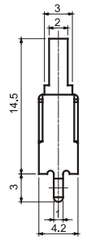
1. Rating: DC 12V 0.1A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 250±150gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 1248N	6.0
JSS 1248NA	4.1

SLIDE SWITCHES

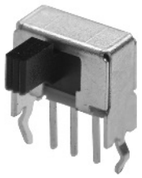
JSS 1249

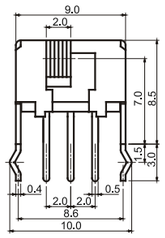


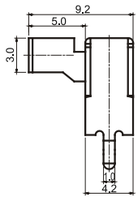


1. Rating: DC 12V 0.1A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 250±150gf
6. Terminal: P.C. Board Terminal

JSS 1249R



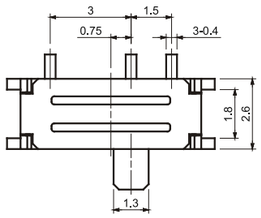


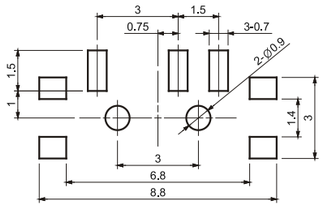


1. Rating: DC 12V 0.1A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 250±150gf
6. Terminal: P.C. Board Terminal

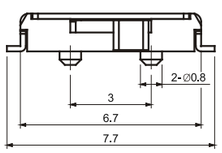
JSS 1267

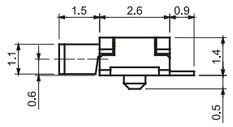
1. Rating: DC 4V 0.3A Max.
2. Circuit: 1C-2P
3. Timing: Non-Shorting
4. Contact Resistance
   4-1. Initial: 70mΩ Max.
   4-2. After life time: 140mΩ Max.
5. Travel: 1.5mm
6. Operating Force: 150±100gf
7. Life Cycles: 10,000 Cycles



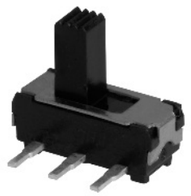


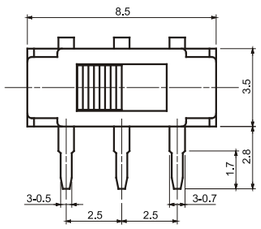
SOLDER LAND DIMENSIONS

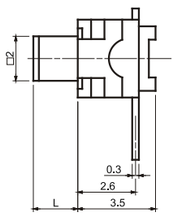




JSS 1270



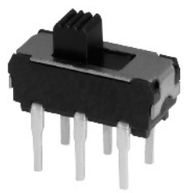


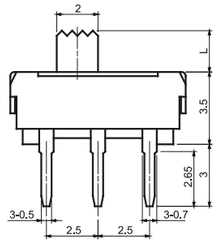


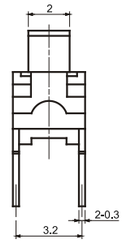
1. Rating: DC 30V 0.3A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 200±50gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 1270	2
JSS 1270A	4.4

JSS 1271



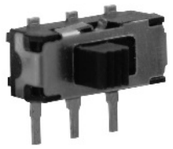


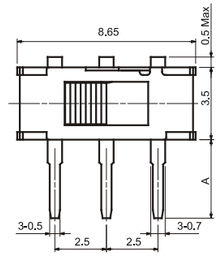


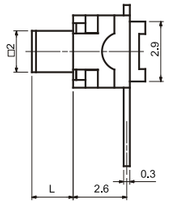
1. Rating: DC 30V 0.3A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 250±150gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 1271	2
JSS 1271A	4.4

JSS 1274



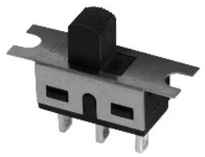


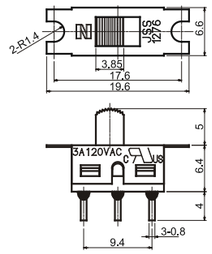


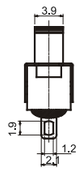
1. Rating: 0.3A 30V DC
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 150 $^{+150}_{-100}$ gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L	A
JSS 1274	2.0	2.8
JSS 1274A	4.4	2.8
JSS 1274L	2.0	3.7

JSS 1276

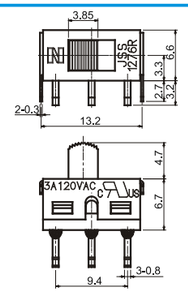


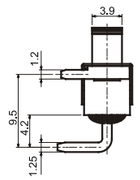




1. Rating: 3A 120VAC, 2A 250VAC
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2.2mm
5. Operating Force: 300±100gf
6. Safety Standard: UL, CUL

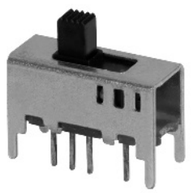
JSS 1276R

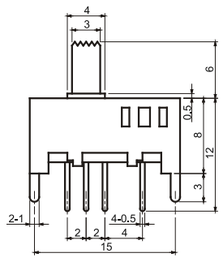


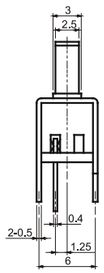


1. Rating: 3A 120VAC, 2A 250VAC
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 2.2mm
5. Operating Force: 300±100gf
6. Safety Standard: UL, CUL

JSS 1301



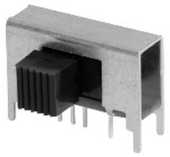
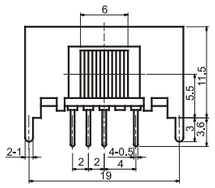
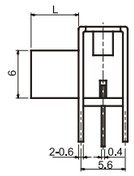




1. Operating Force: R←C→L:300±100gf
   R→C←L:200±100gf
2. Rating: 0.2A, 30V, DC
3. Circuit: 1C-3P
4. Travel: 2+2mm
5. Timing: Non -Shorting

SLIDE SWITCHES

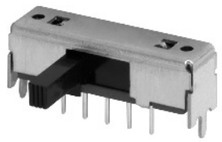
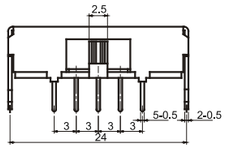
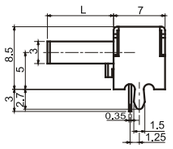
JSS 1302

1. Rating: DC 30V 0.2A
2. Circuit: 1C-3P
3. Timing: Non-Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 300±100gf
   L←C→R : 400±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 1302	6
JSS 1302A	9

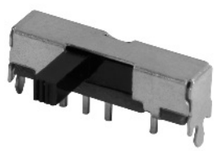
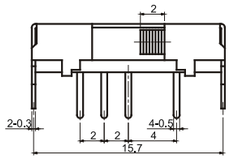
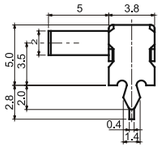
JSS 1307

1. Rating: DC 30V 0.2A
2. Circuit: 1C-3P
3. Timing: Non Shorting
4. Travel: 3+3mm
5. Operating Force: a→b←c : 190±100gf
   a←b→c : 210±100gf
6. Terminal: P.C. Board Terminal

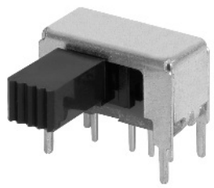
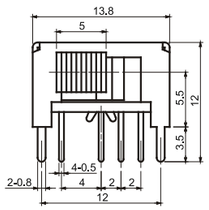
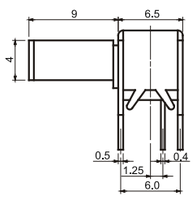
MODEL NO.	L
JSS 1307	9
JSS 1307A	6

JSS 1313

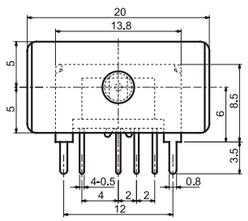
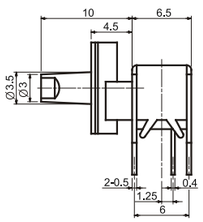
1. Rating: DC 12V 0.2A
2. Circuit: 1C-3P
3. Timing: Non-Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 100±50gf
   L←C→R : 150±100gf
6. Terminal: P.C. Board Terminal

JSS 1319

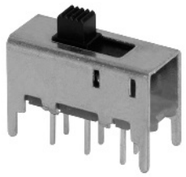
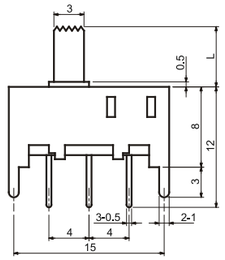
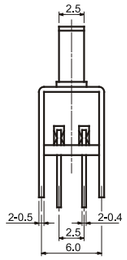
1. Rating: DC 15V 0.5A
2. Circuit: 1C-3P
3. Timing: Non-Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 250±100gf
   L←C→R : 300±100gf
6. Terminal: P.C. Board Terminal

JSS 1319A

1. Rating: DC 15V 0.5A
2. Circuit: 1C-3P
3. Timing: Non-Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 200$^{+150}_{-100}$gf
   L←C→R : 400±200gf
6. Terminal: P.C. Board Terminal

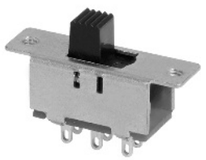
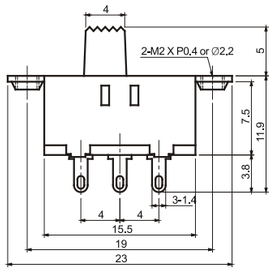
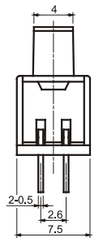
JSS 2201

1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 200$^{+100}_{-50}$gf, 750±150gf(*)
6. Terminal: P.C. Board Terminal

MODEL NO.	L
*JSS 2201 S030	3
*JSS 2201 S045	4.5
JSS 2201 S060	6
JSS 2201 S090	9
JSS 2201 S120	12

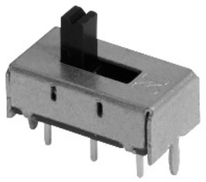
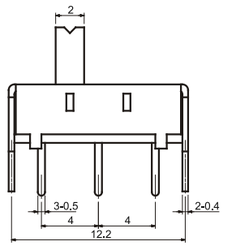
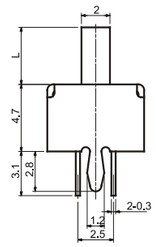
JSS 2202

1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 3mm
5. Operating Force: 200±100gf
6. Terminal: Lead Wiring

MODEL NO.	L
JSS 2202 B050	5
JSS 2202 B075	7.5
JSS 2202 B090	9

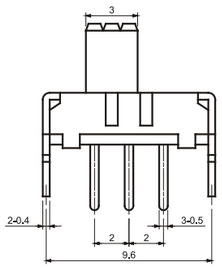
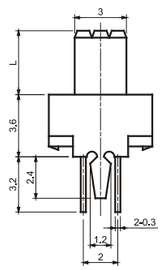
JSS 2205

1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2205	4
JSS 2205A	2

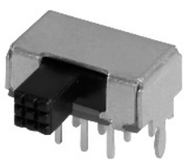
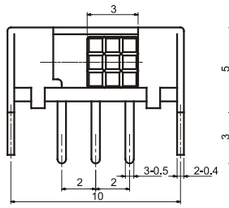
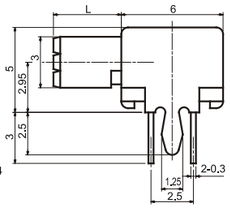
JSS 2207

1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Terminal: P.C. Board Terminal

MODEL NO.	L	O / force
JSS 2207	4	150gf±100gf
JSS 2207A	2	150gf±100gf
JSS 2207W	4	1000gf

JSS 2208

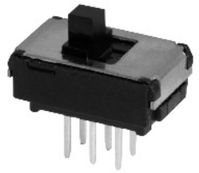




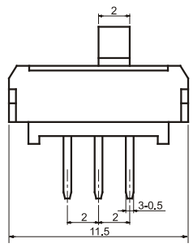
1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 200±100gf
6. Terminal: P.C. Board Terminal

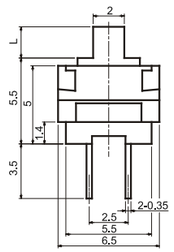
MODEL NO.	L
JSS 2208	4
JSS 2208A	6

SLIDE SWITCHES

JSS 2209



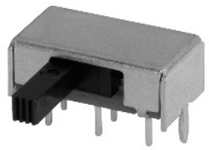


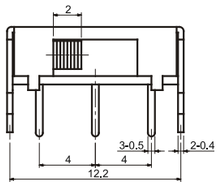


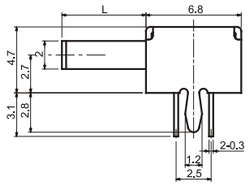
1. Rating: DC 12V 0.1A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 450±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2209	2
JSS 2209A	4

JSS 2210



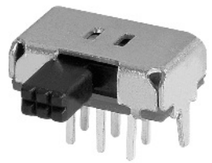


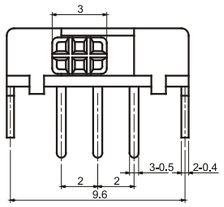


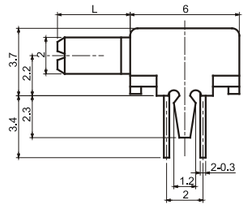
1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 200±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2210	6
JSS 2210A	4
JSS 2210D	2

JSS 2211



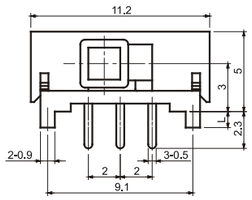


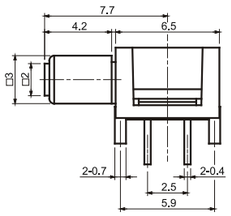


1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 350±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2211	4
JSS 2211A	2

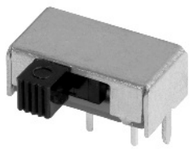
JSS 2214

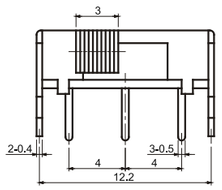


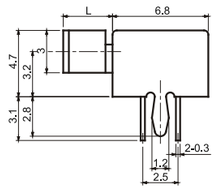


1. Rating: DC 15V 0.3A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 200±150gf
6. Terminal: P.C. Board Terminal

JSS 2215



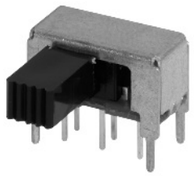


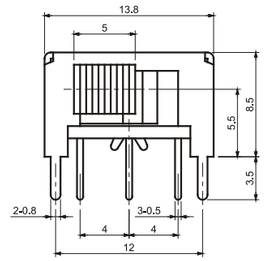


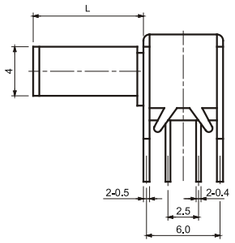
1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2215	3.5
JSS 2215A	6

JSS 2219



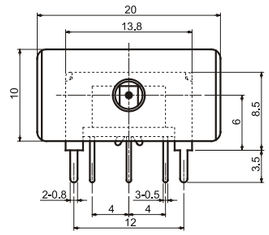


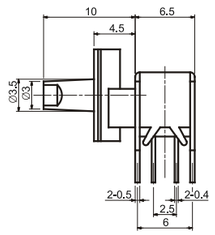


1. Rating: DC 15V 0.5A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2219	9
JSS 2219B	5

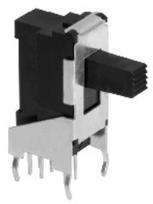
JSS 2219A

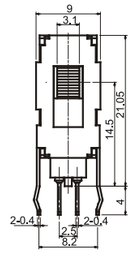


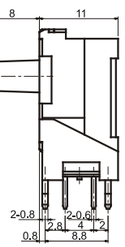


1. Rating: DC 15V 0.5A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 200 $^{+150}_{-100}$ gf
6. Terminal: P.C. Board Terminal

JSS 2255

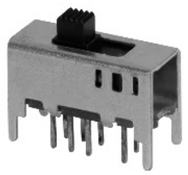


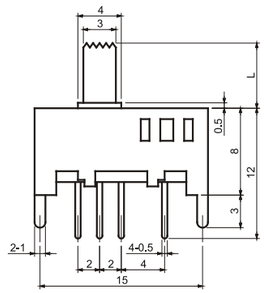


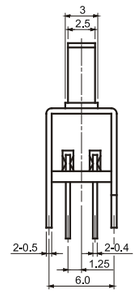


1. Rating: DC 50V 0.3A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force: 250±150gf
6. Terminal: P.C. Board Terminal

JSS 2301



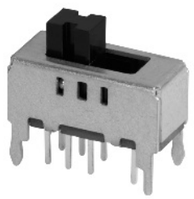


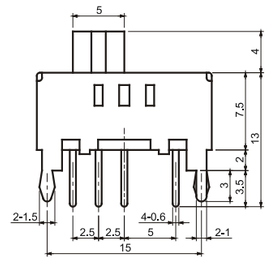


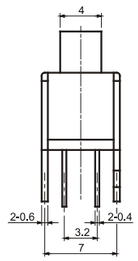
1. Rating: DC 30V 0.2A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 300±100gf
   L←C→R : 200±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2301 S030	3
JSS 2301 S045	4.5
JSS 2301 S060	6
JSS 2301 S090	9
JSS 2301 S120	12

JSS 2303



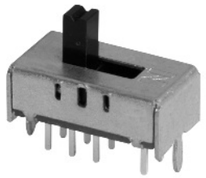
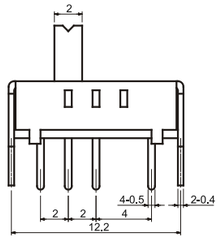
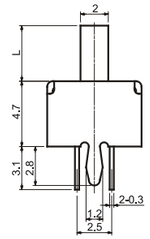




1. Rating: DC 30V 0.3A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2.5+2.5mm
5. Operating Force: L→C←R : 150±50gf
   L←C→R : 300±50gf
6. Terminal: P.C. Board Terminal

SLIDE SWITCHES

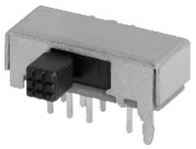
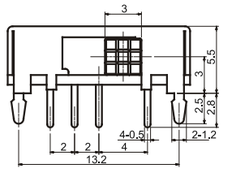
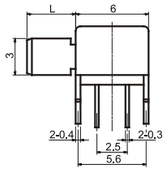
JSS 2305

1. Rating: DC 30V 0.2A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 250±100gf
   L←C→R : 300±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2305(VO)	4
JSS 2305A(VO)	2
JSS 2305C	7.7

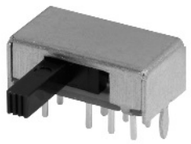
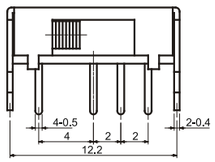
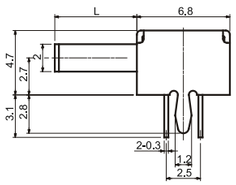
JSS 2308

1. Rating: DC 30V 0.2A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 200±100gf
   L←C→R : 300±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2308	4
JSS 2308A	6

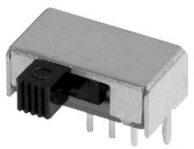
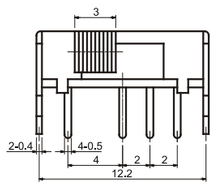
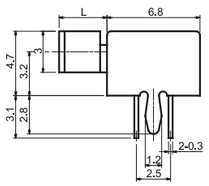
JSS 2310

1. Rating: DC 30V 0.2A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 200±100gf
   L←C→R : 250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2310	6
JSS 2310A	4
JSS 2310D	2

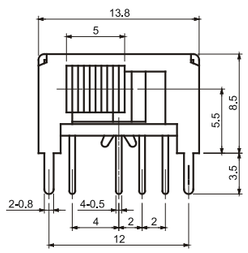
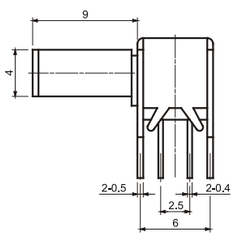
JSS 2315

1. Rating: DC 30V 0.2A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R : 250±100gf
   L←C→R : 300±100gf
6. Terminal: P.C. Board Terminal

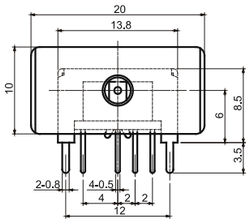
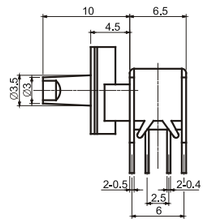
MODEL NO.	L
JSS 2315(VO)	3.5
JSS 2315A(VO)	6

JSS 2319

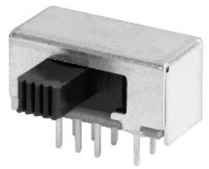
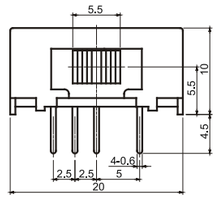
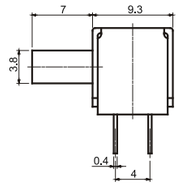
1. Rating: DC 15V 0.5A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R:250±100gf
   L←C→R:300±100gf
6. Terminal: P.C. Board Terminal

JSS 2319A

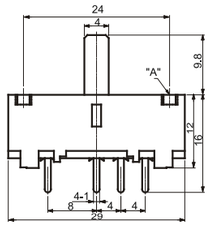
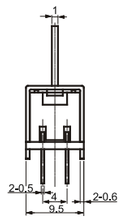
1. Rating: DC 15V 0.5A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R:200 $^{+150}_{-100}$ gf
   L←C→R:400±200gf
6. Terminal: P.C. Board Terminal

JSS 2322

1. Rating: DC 30V 0.2A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2.5+2.5mm
5. Operating Force: L→C←R:150±50gf
   L←C→R:300±100gf
6. Terminal: P.C. Board Terminal

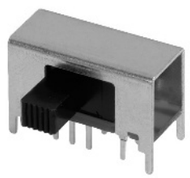
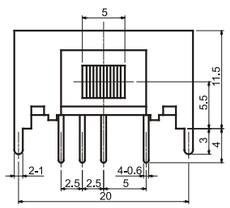
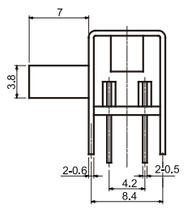
JSS 2323

1. Rating: DC 30V 0.3A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 4+4mm
5. Operating Force: L→C←R:150±100gf
   L←C→R:250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	"A"
JSS 2323	-
JSS 2323A	M2.6XP0.45
JSS 2323H	Without Holes

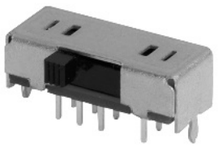
JSS 2324

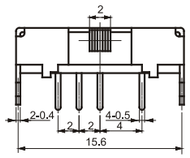




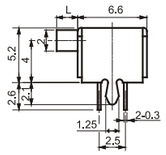
1. Rating: DC 30V 0.3A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2.5+2.5mm
5. Operating Force: L→C←R:300±150gf
   L←C→R:400±200gf
6. Terminal: P.C. Board Terminal

SLIDE SWITCHES

JSS 2325



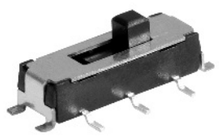


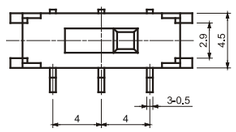


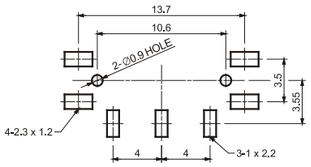
1. Rating: DC 12V 0.1A
2. Circuit: 2C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R:200±100gf
   L←C→R:250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 2325	2
JSS 2325A	6
JSS 2325 B	4

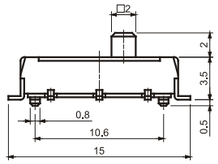
JSS 2353

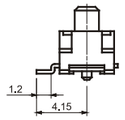






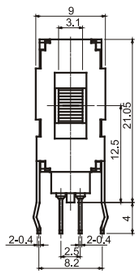
P.C.B LAND DIMENSIONS

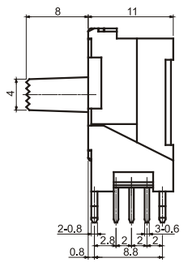




1. Rating: DC 12V 0.1A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Travel: 4mm
5. Operating Force:
   L←R 200±100gf
6. Momentary Type

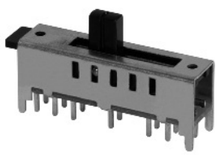
JSS 2355

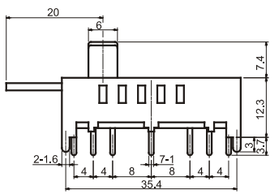


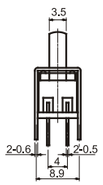


1. Rating: DC 50V 0.3A
2. Circuit: 2C-3P
3. Timing: Non -Specified
4. Travel: 2+2mm
5. Operating Force: L←C→R: 350 $^{+200}_{-100}$gf
   L→C←R: 250±100gf
6. Terminal: P.C. Board Terminal

JSS 2501

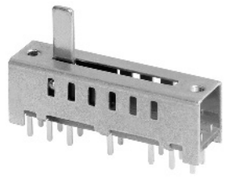


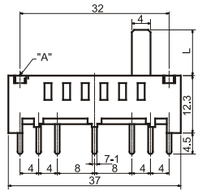


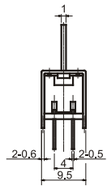


1. Rating: DC 30V 0.3A
2. Circuit: 2C-5P
3. Timing: Non Shorting
4. Travel: 4+4+4+4mm
5. Operating Force: 300±100gf

JSS 2601



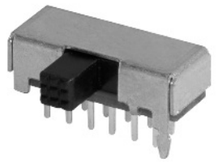


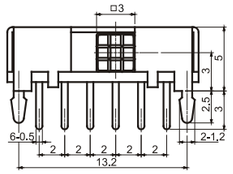


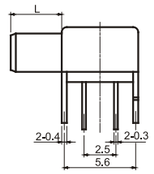
1. Rating: DC 30V 0.3A
2. Circuit: 2C-6P
3. Timing: Non Specified
4. Travel: 4mm
5. Operating Force: 300±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L	"A"
JSS 2601	9.8	-
JSS 2601C	6.5	-
JSS 2601A	9.8	M2.6XP0.45

JSS 4208



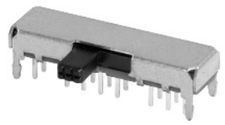


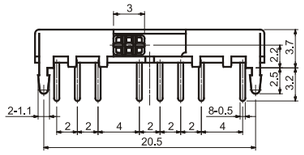


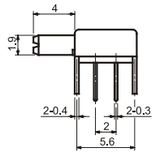
1. Rating: DC 30V 0.2A
2. Circuit: 4C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 250±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 4208(VO)	4
JSS 4208A(VO)	6

JSS 4311

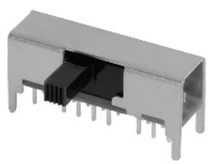


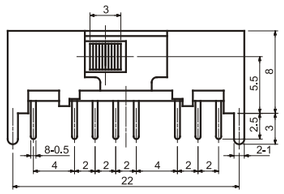


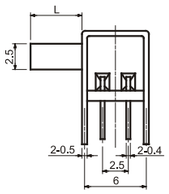


1. Rating: DC 30V 0.2A
2. Circuit: 4C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R:250±100gf
   L←C→R:300±100gf
6. Terminal: P.C. Board Terminal

JSS 4319(VO)



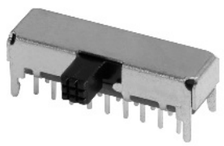


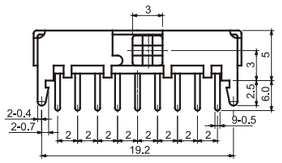


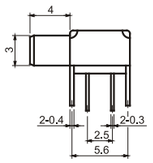
1. Rating: DC 30V 0.2A
2. Circuit: 4C-3P
3. Timing: Non Specified
4. Travel: 2+2mm
5. Operating Force: L→C←R 150±100gf
   L←C→R 200±100gf
6. Terminal: P.C. Board Terminal

MODEL NO.	L
JSS 4319(VO)	5
JSS 4319A(VO)	6

JSS 6201

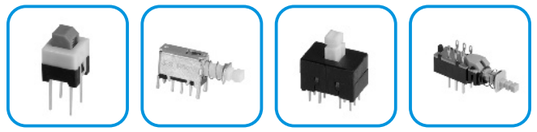






1. Rating: DC 30V 0.2A
2. Circuit: 6C-2P
3. Timing: Non Shorting
4. Travel: 2mm
5. Operating Force: 250±100gf
6. Terminal: P.C. Board Terminal

PUSH SWITCHES



CONTENTS

SPECIFICATIONS · · · · · 47
JPS SERIES · · · · · 48
JPA, JPG SERIES · · · · · 53

Common Specifications

1. Rating : As per Individual Specifications
2. Electrical Performance

Item	Test Condition	Performance
Contact Resistance	DC 5V 1A	As per Individual Specifications
Insulation Resistance	DC 500V for 1 minute	100MΩ Min.
Withstanding Voltage	AC 500V for 1 minute	Shall be Free from Dielectric Breakage

3. Mechanical Performance

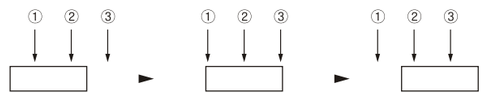
Item	Test Condition	Performance
Operating Force		As per Individual Specifications
Terminal Strength	JPS Series: 500gf for 1minute JPA Series: 500gf for 1minute JPG Series: 300gf for 1minute	No Terminal Rejection and Insulator Breakage

4. Endurance

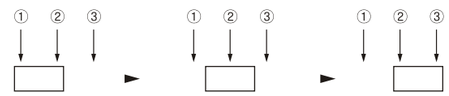
Item	Test Condition	Performance
Life Test	10,000 Cycle Operations(15~20 Cycles/Minute) Without Load	· Contact Resistance JPS, JPA Series: 100mΩ Max. JPS Series: 50mΩ · Operating Force: $^{+10\%}_{-30\%}$ Initial Value · Insulation Resistance: 10MΩ Min. · Withstand Voltage: AC 250V for 1 minute
Cold Proof	-30±3℃ for 96±5 Hours After Test, Kept in Normal Condition for 1Hour, to be Measured within 1Hour	· Contact Resistance JPS, JPA Series: 200mΩ Max. JPG Series: 50mΩ Max. · Insulation Resistance JPS, JPA Series: 100MΩ Min. JPG Series: 10MΩ Min. · Withstand Voltage: AC 500V for 1 minute
Dry Heat Proof	85±2℃ for 96±5 Hours After Test, Kept in Normal Condition for 1Hour, to be Measured within 1Hour	

Explanation of Changeover Timing

Shorting	Non-Shorting
Switching action is accomplished after electrical connections have been made once across terminals during circuit selection. (Terminals ①,② and ③ are electrically connected once)	Electrical connections are turned off once across terminals during circuit selection. (Terminals ①,② and ③ are electrically turned off once)



Stationary position — In course of switching — After switching



Stationary position — In course of switching — After switching

Operating Mode

Interlock (lock release)	When a button is pushed, the other key having previously been locked is released and the pushed key is locked
Self-lock (latching)	Operation independent from other keys. A key is locked when it is pushed, and released when pushed again.
Non-lock (momentary)	A key is held pushed while it is being pressed down, and released when the pressing force is eliminated.
Reset	Operation for releasing the key locked in the interlock mode. A key previously locked is released when this reset key is depressed, and locked again when the key is released. This mode is available only in the switch with 0 or 2 poles.

Product Code Explanation

JPS 2 2 54 NS

Operating Mode and Changeover Timing

Operation Mode	Non Lock		Self Lock	
Change Over Timing	Shorting	Non Shorting	Shorting	Non Shorting
Code	NS	N	S	-

Serial Number

No. of Positions

No. of Positions	1	2
Code	1	2

No. of Poles

No. of Poles	1	2
Code	1	2

Series

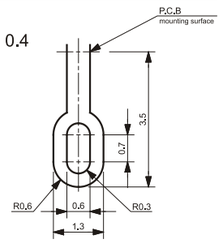
Table of Products

Series	JPS 1257, 1258		JPS 2256, 2259		JPS2271, 2281, 2285, 2286	
No. of Poles	1		2		2	
No. of Positions	2		2		2	
Operation Mode	Self Lock	Non Lock	Self Lock	Non Lock	Self Lock	Non Lock
Timing	Shorting or Non Shorting					
Terminal Styles	For Printed Circuit Board or Lead Wiring				For Printed Circuit Board	

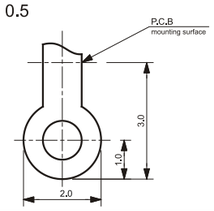
Style of Terminal and Shaft End

Terminal for lead wiring

1. Thickness: 0.4

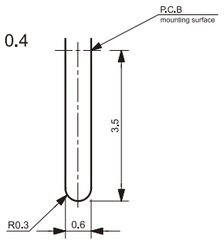


2. Thickness: 0.5

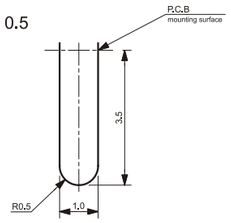


Terminal for P.C. Board

1. Thickness: 0.4

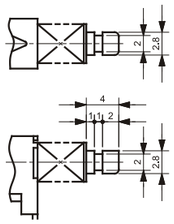


2. Thickness: 0.5

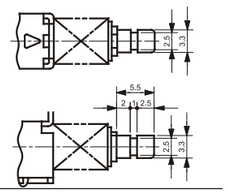


Shaft End Style

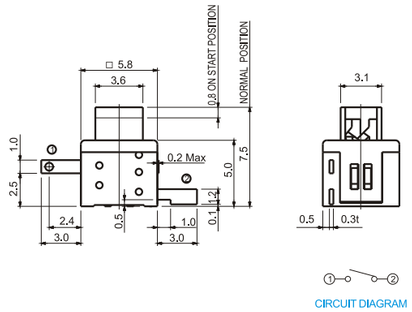
"A" TYPE



"B" TYPE

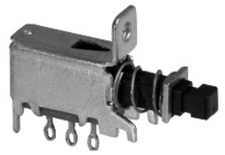


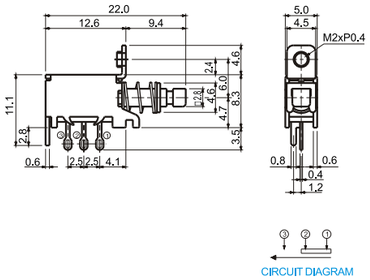
JPS 1126



1. Rating: DC 30V 0.2A
2. Circuit: 1C-1P
3. Timing: Non Shorting
4. Operating Mode: Self Lock
5. Travel: Full 1.8mm
   Lock 1.0mm
6. Operating Force: 150±50gf
7. Contact Resistance:
   7-1. 50mΩ (Max.): Initial
   7-2. 100mΩ (Max.): After life test at rating
8. Life Cycle: 10,000 Cycles

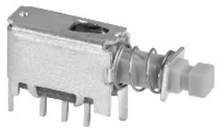
JPS 1257

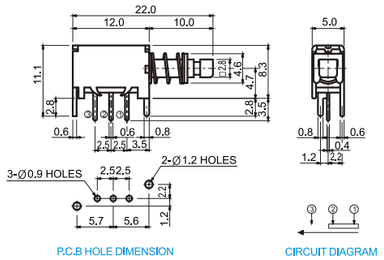




1. Rating: DC 30V 0.3A
2. Circuit: 1C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: Lead Wiring or P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 230±100gf
8. Shaft End Style: "A" Type

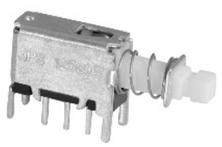
JPS 1258

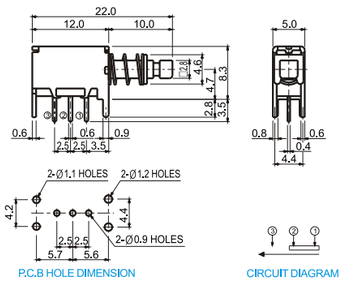




1. Rating: DC 30V 0.3A
2. Circuit: 1C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: Lead Wiring or P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 230±100gf
8. Shaft End Style: "A" Type

JPS 1258DS

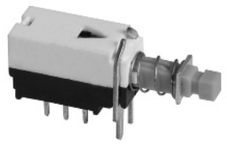


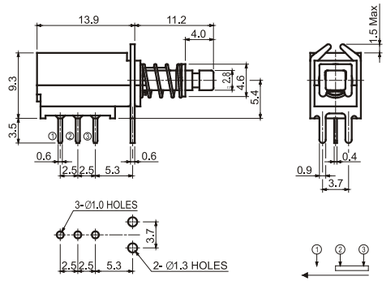


1. Rating: DC 30V 0.3A
2. Circuit: 1C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 230±100gf
8. Shaft End Style: "A" Type

PUSH SWITCHES JPS SERIES

JPS 1275



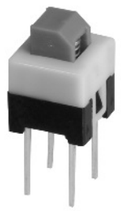


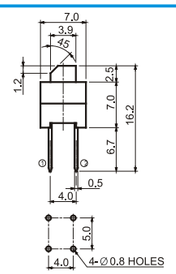
P.C.B HOLE DIMENSION

CIRCUIT DIAGRAM

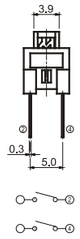
1. Rating: DC 30V 0.3A
2. Circuit: 1C-2P
3. Timing: Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
6. Stroke: Full 3.0mm
   Lock 2.0mm
7. Operating Force: 200±100gf
8. Shaft End Style: "A" Type
9. Life Cycles: 5,000Cycles

JPS 2171





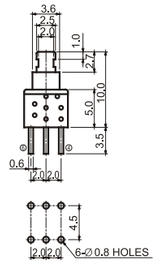
P.C.B HOLE DIMENSION



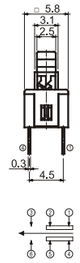
CIRCUIT DIAGRAM

1. Rating: DC 3V, 1.25A(On), D.3A(Off)
2. Circuit: 2C-1P
3. Timing: Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 1.8mm
   Lock 1.0mm
7. Operating Force: 140±50gf

JPS 2225



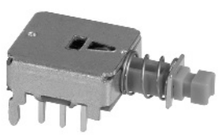
P.C.B HOLE DIMENSION

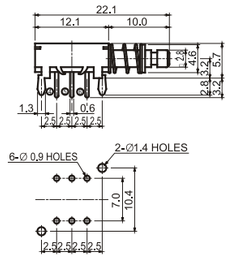


CIRCUIT DIAGRAM

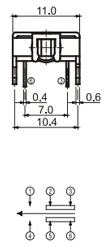
1. Rating: DC 30V 0.2A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
6. Stroke: Full 1.8mm
   Lock 1.0mm
7. Operating Force: 150±50gf
8. Life Cycles: 10,000Cycles

JPS 2251





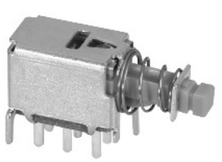
P.C.B HOLE DIMENSION

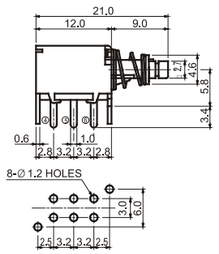


CIRCUIT DIAGRAM

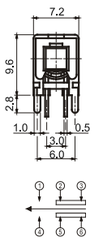
1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 330±100gf
8. Shaft End Style: "A" Type

JPS 2254





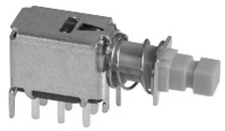
P.C.B HOLE DIMENSION

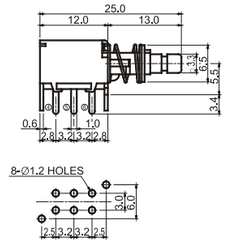


CIRCUIT DIAGRAM

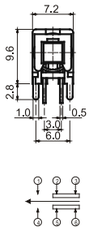
1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: Lead Wiring or P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 300±150gf

JPS 2254A





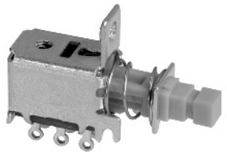
P.C.B HOLE DIMENSION

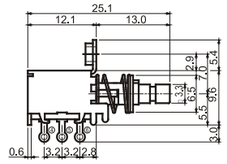


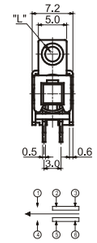
CIRCUIT DIAGRAM

1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: Lead Wiring or P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 300±150gf
8. Shaft End Style: "B" Type

JPS 2256



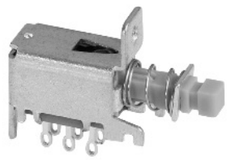


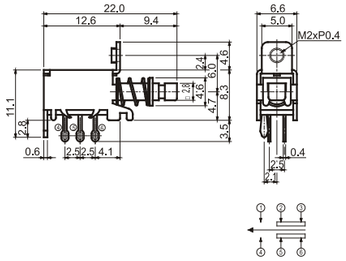


CIRCUIT DIAGRAM

1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: Lead Wiring or P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. "L": M2.6 X P0.45 or ϕ2.8 HOLE
8. Operating Force: 300±150gf
9. Shaft End Style: "B" Type

JPS 2258

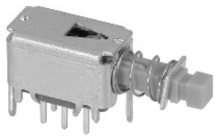


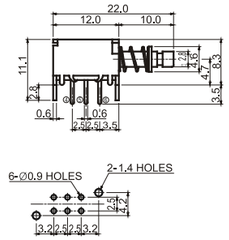


CIRCUIT DIAGRAM

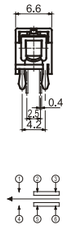
1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: Lead Wiring or P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 330±100gf
8. Shaft End Style: "A" Type

JPS 2259





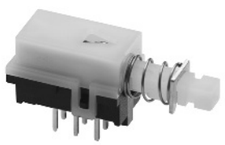
P.C.B HOLE DIMENSION

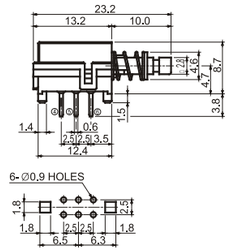


CIRCUIT DIAGRAM

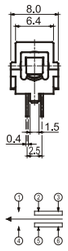
1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 330±100gf
8. Shaft End Style: "A" Type

JPS 2259M





P.C.B HOLE DIMENSION

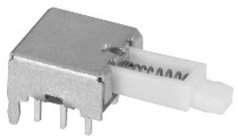


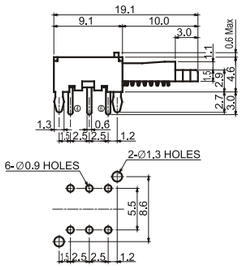
CIRCUIT DIAGRAM

1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.5mm
   Lock 2.5mm
7. Operating Force: 260±100gf

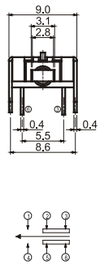
PUSH SWITCHES JPS SERIES

JPS 2262





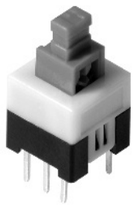
P.C.B HOLE DIMENSION

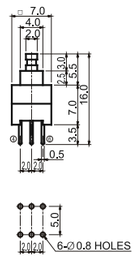


CIRCUIT DIAGRAM

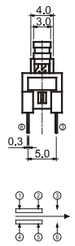
1. Rating: DC 30V 0.3A
2. Circuit: 2C-2P
3. Timing: Shorting or Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 2.5mm
   Lock 1.5mm
7. Operating Force: 200±100gf

JPS 2271





P.C.B HOLE DIMENSION



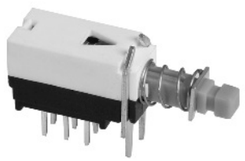
CIRCUIT DIAGRAM

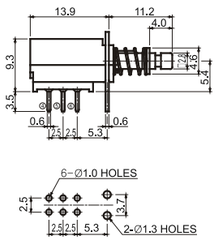
1. Rating: DC 30V, 0.1A
2. Circuit: 2C-2P
3. Timing

MODEL NO.	O / force	Timing
JS 2271	140±50gf	Non Shorting
JPS 2271H	100±50gf	
JPS 2271W	230±50gf	

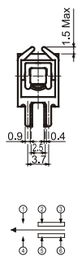
4. Operating Mode: Self Lock, Non-Lock
5. Stroke: Full 1.8mm
   Lock 1.0mm

JPS 2275





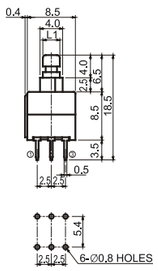
P.C.B HOLE DIMENSION



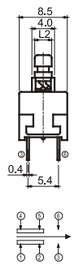
CIRCUIT DIAGRAM

1. Rating: DC 30V, 0.3A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Terminal: P.C. Board Terminal
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 3.0mm
   Lock 2.0mm
7. Operating Force: 200±100gf

JPS 2281



P.C.B HOLE DIMENSION

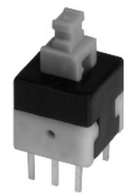


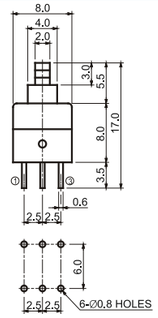
CIRCUIT DIAGRAM

1. Rating: DC 30V, 0.1A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Operating Mode: Self lock, Non-lock
   Non-lock with Click
5. Stroke: Full 2.5mm
   Lock: 1.5mm
6. Operating Force: 220±50gf

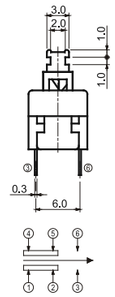
MODEL NO.	L1	L2
JPS 2281(VO), Shorting	2	3
JPS 2281A(VO)	3	3
JPS 2281EA(VO)	3.3	3.3
JPS 2281EM(VO)	2.8	2.8

JPS 2285





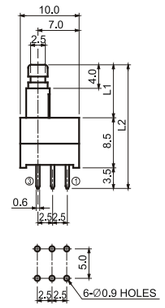
P.C.B HOLE DIMENSION



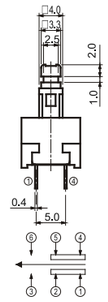
CIRCUIT DIAGRAM

1. Rating: DC 30V 0.1A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Operating Mode: Self Lock, Non-Lock
   Non-Lock With Click
5. Stroke: Full 2.5mm
   Lock 1.5mm
6. Operating Force: 180±50gf

JPS 2286A



P.C.B HOLE DIMENSION

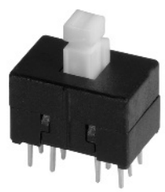


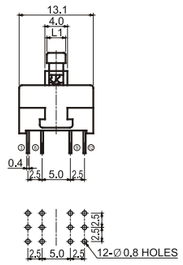
CIRCUIT DIAGRAM

1. Rating: DC 30V 0.1A
2. Circuit: 2C-2P
3. Timing: Non Shorting
4. Operating Force: 200±50gf
5. Operating Mode: Self Lock
   Non-Lock
6. Stroke: Full 2.5mm
   Lock 1.5mm
7. JPS 2286W: 300^{+100}_{-0}gf

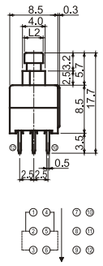
MODEL NO.	L1	L2
JPS2286	5	13.5
JPS2286A	9	17.5

JPS 4281A





P.C.B HOLE DIMENSION



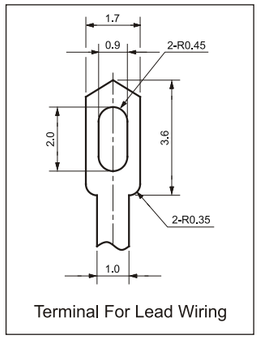
CIRCUIT DIAGRAM

1. Rating: DC 30V 0.1A
2. Circuit: 4C-2P
3. Timing: Non Shorting
4. Operating Mode: Self Lock
   Non-Lock
5. Stroke: Full 2.5mm
   Lock 1.5mm
6. Operating Force: 300±70gf

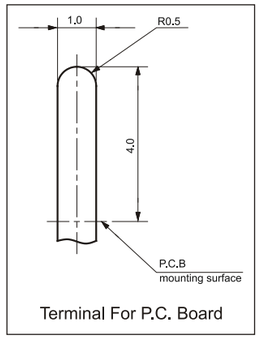
MODEL NO.	L1	L2
JPS4281	3	2
JPS4281A	3.3	3.3
JPS4281B	2.8	2.8

PUSH SWITCHES JPA , JPG SERIES

1. Rating: DC 50V 0.3A
2. Stroke: Lock 4mm / Full 5.5mm
3. Circuit: 2C-2P/ 4C-2P
4. Operating Mode: Self Lock, Non Lock
5. Terminal Style: For Single Sided P.C.Board and
   Single Lead Wiring
6. Timing: Shorting or Non-Shorting
7. Operating Force: 300±100gf

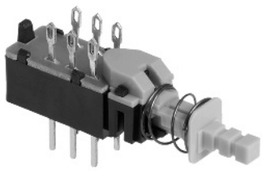


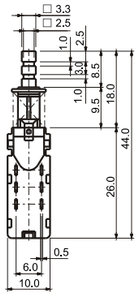
Terminal For Lead Wiring

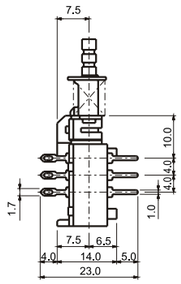


Terminal For P.C. Board

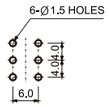
JPA 01-22





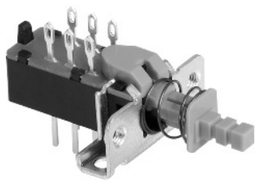


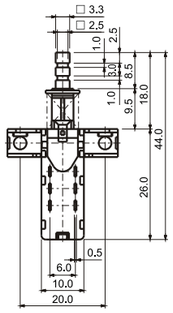
CIRCUIT DIAGRAM

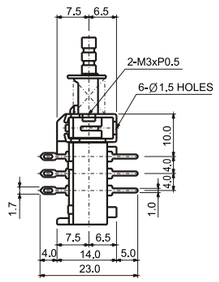


P.C.B HOLE DIMENSION

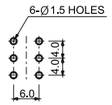
JPA 11-22





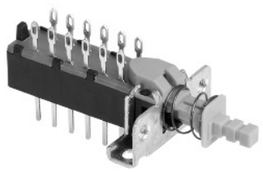


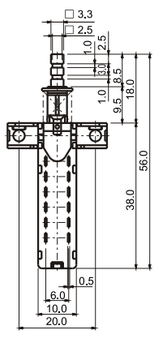
CIRCUIT DIAGRAM

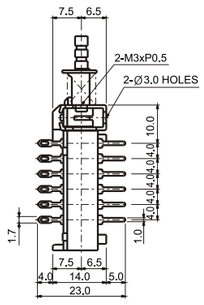


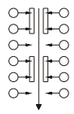
P.C.B HOLE DIMENSION

JPA 11-42

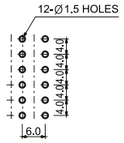






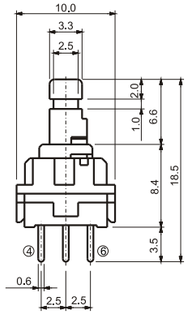


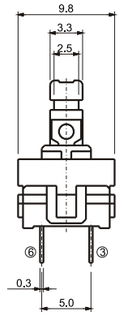
CIRCUIT DIAGRAM

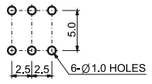


P.C.B HOLE DIMENSION

JPG 01-01





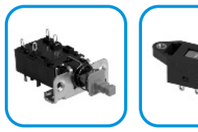


P.C.B HOLE DIMENSION

CIRCUIT DIAGRAM

1. Operating Force: 250±100gf
2. Circuit: 2C-2P
3. General Tolerance: ±0.3

POWER SWITCHES



CONTENTS

SPECIFICATIONS · · · · · 56
EXPLANATION OF SAFETY STANDARDS · · · · · 58
JRA SERIES (ROCKER TYPE) · · · · · 60
JRD SERIES (ROCKER TYPE) · · · · · 64
JPP SERIES (PUSH TYPE) · · · · · 69
JVS SERIES (SLIDE TYPE) · · · · · 75

Common Specifications

1.Test conditions

Standard test conditions shall be 5~35℃ in temperature and 45~85% RH in humidity. Should any doubt arise in judgment, tests shall be conducted at 20±2℃ and 65±5% RH.

2. Operating temperature range: -10~+60℃

3. Rating: Shall be in accordance with individual specifications

4. Electric performance

	Item	Test Conditions	Criteria
4.1	Contact resistance	Measured by a voltage drop method at DC 5V 1A	100mΩ Max.
4.2	Insulation resistance	DC 500V applied between terminals and between the terminal and the frame for 1 minute±5 seconds.	100MΩ Min.
4.3	Withstanding voltage	In accordance with specified safety standards.	No dielectric breakdown shall occur.

5. Mechanical performance

	Item	Test Conditions	Criteria
5.1	Contact resistance		Shall be in accordance with individual specifications.
5.2	Terminal Strength	A static load of 500gf shall be applied to the tip of the terminal in a desired direction for one minute. The number of test shall be 1 per terminal.	Shall be free from terminal looseness, damage and insulator breakage. Terminals may be bent. The electrical performance requirements specified in Item 4 shall be satisfied.
5.3	Control Strength	A static load of 2500gf shall be applied to the operating direction for 15 seconds. For lever type, the load shall be applied to the position of 20mm from the center of rotation.	Shall be free from pronounced wobble, bending and mechanical abnormalities.
5.4	Control wobble	The amount of wobble(P.P) shall be measured by applying a static load of 100gf to he tip of the control unit.	(P.P) 1mm Max.
5.5	Vibration proof	The switch shall be secured to a testing machine by a regular mounting device and method, and shall be tested under the following conditions: (1) Vibration frequency range: 10~55Hz (2) Total amplitude: 1.5mm (3) Sweep ratio: 10-55-10(Hz) approx. 1Min. (4) Method of changing the sweep vibration frequency: (logarithm or straight line.) (5) Direction of vibration: Three vertical directions (including the control shaft.) (6) Test time: 2 hours each(6 hours in total)	Contact resistance (Item 4.1): 100mΩ Max. Insulation resistance (Item 4.2): 100MΩ Min. Withstand voltage (Item 4.3): Voltage shall be applied in accordance with specified safety standards. No dielectric breakdown shall occur. Operating force (Item 5.1): Shall be in accordance with individual specifications. Shall be free from abnormalities in appearance and construction.
5.6	Solder ability	The test shall be performed under the following conditions and confirmed after that: Soldering Temperature : 230±5℃ Immersing Time : 3±0.5 seconds. Flux immersion shall be made for 5~10 seconds under normal temperature.	More than 75% of the immersed part shall be covered with solder.
5.7	Solder heat Resistance	The test shall be conducted under the following conditions and confirmed after that: Temperature and immersing time	Shall be free from pronounced deformation.

	Temperature	Time(sec.)
Manual soldering	350±10℃	3±0.5
Automatic soldering	260±5℃	10±2

6. Durability

	Item	Test Conditions	Criteria
6.1	Operating life under load	Example of TV ratings in UL and CSA standards: After conducting 50cycles of overload test (6~10cycles/minute), 10,000 cycles of rated of rated load test(6~10cycles/minute) shall be performed.	The switch shall exactly make and break at rated current. Withstanding voltage: AC 1,000V for 1 minute. Terminal temperature rise:30℃ max.
		Then additional 15,000 cycle of test(6~10cycles/minute) shall be conducted.	The switch shall exactly make and break of rated current. Withstanding voltage: AC 1,000V for 1 min.

	Overload test		Rated load test	
Ratings	Normal Current	Inrush Current	Normal Current	Inrush Current
TV-1	1.5	27	1	18
TV-2	3.0	51	2	35
TV-3	4.5	71	3	51
TV-4	6.0	91	4	65
TV-5	7.5	111	5	78
TV-8	12	163	8	117

7. Weather proof

	Item	Test Conditions	Criteria
7.1	Cold proof	After testing at -30±2℃ for 96 hour, the switch shall be allowed to stand under normal temperature and humidity conditions for 1hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.	Contact resistance (Item 4.1): 100mΩ max. Insulation resistance(Item 4.1): 100MΩ min. Withstand voltage (Item 4.3): Voltage shall be applied in accordance with specified safety standards. No dielectric breakdown shall occur. Operating force(Item 5.1) Within+10%, or -30% of the specified value. Shall be free from abnormalities in appearance and construction.
7.2	Dry heat proof	After testing at 85±2℃ for 96 hour, the switch shall be allowed to stand under normal temperature and humidity conditions for 1hour, and measurement shall be made within 1 hour after that.	
7.3	Moisture resistance	After testing at 60±2℃/90~95% RH for 96 hour, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.	

Note: Mentioned above is a general example and varies with receptive series.

· Primary power supply switching is regulated by safety standard, and its contents vary with destinations. Consult us for special applications.

· An unstable contact may occur if the switch current is lower than 500mA.

Safety Standards

1. Overview of Safety Standards

A safety standard is established by a county or an organization representing it to protect general users from electrical shock and fire hazards.
It establishes a standard for electrical devices and components.
For electrical equipment manufacturers, utilizing switch that have been safety-approved ensures the safety of the switch. The use of a safety approved switch also simplifies at least one part the process obtaining certification by safety testing.

2. Major Safety Standards

(1) Electrical Appliance and Material Control Low

The Electrical Appliance and Material Control Low is aimed at preventing fires, electrical shock, radio interference, etc, due to defective electrical appliances by regulating the manufacture, sales and use of such appliances. Devices regulated by the regulation are divided into two classes. Class A devices are those devices whose construction or conditions of use make them prone to causing damage. All other devices fall into Class B.
Power switches had been included in the "Category A" of the Electrical Appliance and Material Control Low", but from March 1988 they were removed from the goods subject to said law, except for some switches. Therefore, when using the switch which had been subject to the Electrical Appliance and Material Control Low but is not longer governed by said law, it will be necessary to make an application in the same set as the conventional non-governed switch.

(2) UL (Underwriters Laboratories)

The Underwriters Laboratories inc. is the American safety approving organization. Its purpose is to ensure consumers safety and protect them from fire hazards. State law requires that equipment to be exported to the United States utilize UL approved power switches meeting UL standards and be capable of passing UL tests.

(3) CSA (Canadian Standard Association)

The CSA is the Canadian safety testing association and tests electrical and other equipment to ensure the safely of individuals and prevent fire hazards. Provincial law requires that the power switches used in equipment for export to Canada be CSA approved.

(4) SEMKO

(Svenska Elektriska Materielkontrollanstalten Ab)
SEMKO is the Swedish safety testing organization made up of fire insurancecompany, power supplies companies association and electrical industries association. Its purpose is to prevent electrical shock and fires due to home electrical appliances. Nearly all electrical appliances sold in Sweden must be approved by SEMKO.

(5) BSI (British Standard Institution)

The British Standard is the industrial and safety standards of Great Britain. It is made up of such organizations as the BSI and BEAB. It conducts in-vestigations of electrical equipment for verification of safety. Electrical devices do not have to conform to this standard but those that do have a competitive advantage in the marketplace.

(6) VDE (Verband Deutscher Elektrotrchniker)

The VDE is the German safety testing organization. It is particularly concerned with preventing hazards to human life and fires. Approval is not mandatory but fines are levied against those companies whose unapproved products cause accidents. Therefore, in reality, conformity is a necessity.

3. About the Acquisition of Northern European Safely Standards for Approval

With regard to the acquisition of safety standards DEMKO, NEMKO and EI, there is an agreement among northern European countries that if one of these countries approves a safety standard it shall also be approved by the other countries (The Copenhagen Procedure) in accordance with this agreement, therefore, sets may be ordered by attaching the SEMKO approval certificate of the switch concerned.

4. Meaning of the Making of Power Switch Ratings

Safety Standard Name / Classification of Rating	Electrical Appliance and Material Control Law	UL,CSA	CEE(European) Standard
For Electronic Appliances	All NAMAE power switches are not governed by the Electrical Appliance and Material Control Law.	TV rating TV-5 Rated current Symbol by TV rating NOTE: When not indicated rated voltage is 120V AC	Rating for electronic appliances 5A/80A 250v ~ Alternating Current Rated voltage Rated surge current Rated normal current
For General Appliances		Ampere rating AC 125V 5A Rated current Rated voltage Alternating current	Rating for resistive appliances 5A/250V ~ Alternating current Rated voltage Rated current
For Motors		Horsepower rating AC 125V 1/2HP Output of applicable motor Rated voltage Alternating current	Rating for resistance and motor load 3(2)/250 ~ ⋕ Frequency of operation ⋕ Frequent Operation Without Making Infrequent Operation Alternating current Rated voltage Rated current of applicable motor Rated current under resistive load

Power switches for electronic appliances: Mainly power switches for electronic appliances such as TV sets, radios and amplifiers. However, if the voltage and current levels are below the ratings they may be used in other electric appliances.
Power switches for general appliances: These switches are for use in appliances other than electronic appliances or motor appliances that have current surges. However, if the rating of the switch is $1/\sqrt{2}$ or above the surge of current the circuit and meets construction requirements it may by used in other devices.
Power switches for motor appliances: Mainly for appliances that are motor driven, such as copiers, vacuum cleaners, etc.

5. Explanation of Safety standard Terms

1. Three insulation classes of the safety standards of each European country (ECC standards)
   In the European countries, switches are classed according to their types of insulation.

   (a) Switches for Class Ⅰ Appliances
   Switches for use with appliances utilizing power cords with ground pins having a normal level of insulation.

   (b) Switches for Class Ⅱ Appliances
   Switches for use with appliances having no ground pin and utilizing double or reinforced insulation.

   (c) Switches for Class Ⅲ Appliances
   Switches for use with voltages of 42 volts or less.

2. Microgap Construction
   This construction is one of the classifications of switches under the CEE standard. Switches in this class have a contact gap of 3mm or less. These switches beat the μ mark.

3. Switches mot governed by the Electrical Appliance and Material Control Law.
   These switches cannot be approved under the Law, However, this does not mean that they cannot be used in electrical equipment. In such a case the switch must be tested along with the type test under the Law. The switch must also measure up to the technical standards of the Law.

The followings are major conditions under which electrical appliances and materials are not subject to the Electrical Appliance and Material Control Law. All NAMAE power switches are not governed by said law.

(1) Switches other than single pole single throw, single pole double throw and double pole single throw switches.
(2) Switches with signal selector switches.
(3) Switch for lead, fasten, lapping and P.C. Board terminals.
(4) Switches with manual control knob etc.
(5) Switches without manual control knob, etc.

4. Approval type number
The approval type number means the number on the safety standard described in the safety standard approval certificate of approval list.
Therefore, the approval type number is different from the product number. There are cases where the approval type number varies with the acquired standard, rating etc. even in the same series or products.
When the set manufacturer applies for the set safety standard the application must be made with the approval type number for the switch to be used.

6. UL listing NO. : E131425(S)

7. CSA listing NO.: LR97339

Model No. Explanation

JRA 11 □□ A W R B - 01

- ⑧ MODIFY MODEL NO.
- ⑦ CASE COLOR
- ⑥ KNOB COLOR
- ⑤ PRINT COLOR
- ④ MARKING VARIETY
- ③ SERIES No.
- ② CIRCUIT
- ① ROCKER SWITCH TYPE

① ROCKER SWITCH TYPE: JRA, JRC

② CIRCUIT

CODE	CIRCUIT
11	SPST
12	SPST
21	SPDT
22	SPDT

③ SERIES NO.

④ MARKING VARIETY (O: ROCKER SWITCH NAME POSITION)

MARKING								
CODE		A	B	C	D	F	G	H
MARKING								
CODE	J	K	L	M	N	P	R	S

⑤ PRINT COLOR

CODE	CIRCUIT
W	WHITE
B	BLACK
R	RED
C	CYAN

⑥ KNOB COLOR

⑦ CASE COLOR

⑧ MODIFY MODEL NO.

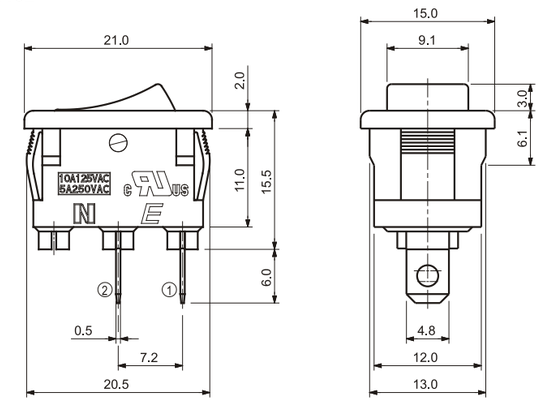
JRA 1102A

1. Contact Resistance: 100mΩ max.
2. Dielectric Strength: AC 2000V for 1Minute(TM'L-TM'L)
3. Life Expectancy: 3-1 Electrical/10,000 Cycles(R-L Load)
   3-2 Mechanical/25,000 Cycles
4. Operating Force: 400±20gf
5. Safety Standard Approval: UL, CUL, VDE, EK

JRA Series

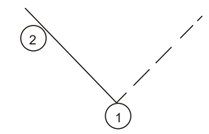
Model	Circuit	Button Position	Terminal Style	Rating
JRA 1102	SPST	ON-OFF	Fasten	AC 125V 10A AC 250V 5A
JRA 2102	SPDT	ON-ON		
JRA 1202	SPST	ON-OFF	Lead Wiring	
JRA 2202	SPDT	ON-ON		

JRA 1102



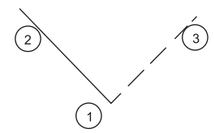
Circuit Diagram

SPST



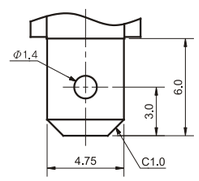
Circuit Diagram

SPDT

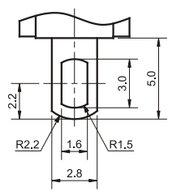


Terminal Style

Fasten Type

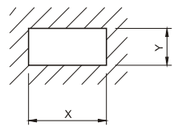


Lead Wiring Type



Mounting Hole Dimensions

BOARD	X	Y
0.75~1.25	19.2	12.9
1.25~2.00	19.4	12.9



POWER SWITCHES

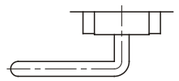
JRA 1203, JRA 2104

JRA 1203

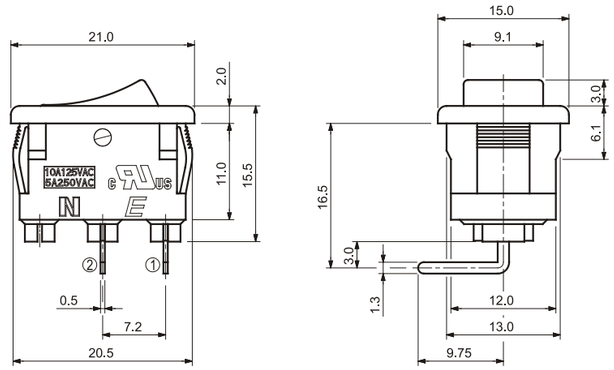
JRA 2104

1. Contact Resistance: 100mΩ max.
2. Dielectric Strength: AC 2000V for 1Minute(TM'L-TM'L)
3. Life Expectancy: 3-1 Electrical/10,000 Cycles(R-L Load)
   3-2 Mechanical/25,000 Cycles
4. Operating Force: 400±200gf
5. Safety Standard Approval: UL, CUL, VDE

JRA Series

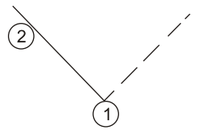
Model No.	Circuit	Button Position	Terminal Style	Rating
JRA 1103	SPST	ON-OFF	 Angle Type	AC 125V 10A AC 250V 5A
JRA 1104	SPST	ON-OFF		
JRA 1203	SPST	ON-OFF		
JRA 2103	SPDT	ON-OFF		
JRA 2104	SPDT	ON-OFF		

JRA 1104



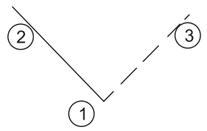
Circuit Diagram

SPST



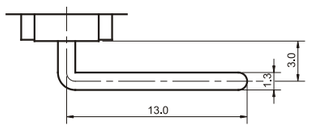
Circuit Diagram

SPDT

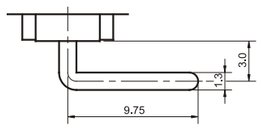


Terminal Style <A>

Long Angle Type

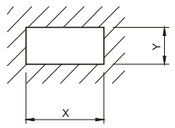


Short Angle Type



Mounting Hole Dimensions

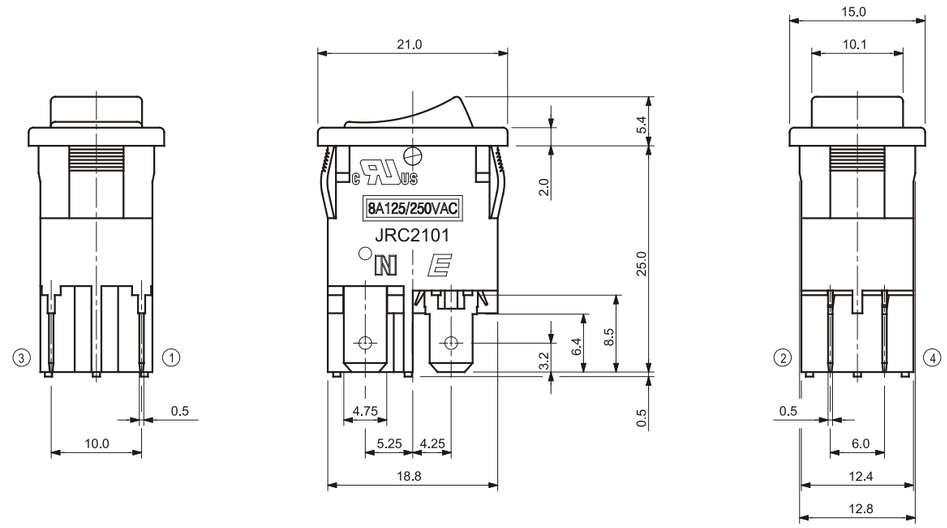
BOARD	X	Y
0.75~1.25	19.2	12.9
1.25~2.00	19.4	12.9



JRC 2101H

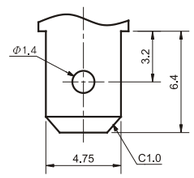
1. Rating: AC125V 12A, AC250 8A
2. Contact Resistance: 100mΩ Max.
3. Dielectric Strength: AC 2000V for 1Minute(TM'L-TM'L)
4. Life Expectancy (6~10 Cycles/Minute)
   4-1 Electrical: 10,000 Cycles
   4-2 Mechanical: 25,000 Cycles
5. Operating Force: 800±300gf
6. Safety Standard Approval: UL, CUL, VDE

JRC 2101



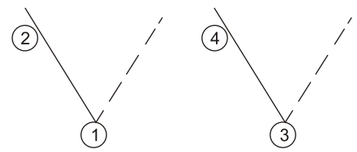
Detail of Terminal

JRC 2101



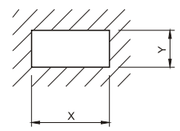
Circuit Diagram

DPST



Mounting Hole Dimensions

BOARD	X	Y
0.75~1.25	19.2	12.9
1.25~2.00	19.4	12.9



Model No. Explanation

JRD 11 01 H W B B - 01

- ⑨Model Modifying No. (Code : 01~99)
- ⑧Case Color (Code : B)
- ⑦KNOB COLOR (Code : B)
- ⑥PRINT COLOR (Code : W, B, R)
- ⑤MARKING VARIETY (Code : A~E, G~H, J~N, P, S~U)
- ④Model Series NO.
- ③Case & Terminal Type (Code : 1, 2)
- ②Circuit (Code : 1)
- ①Rocker Switch Type

① CIRCUIT CODE NO.

CODE	CIRCUIT
1	SPST

② CASE & TERMINAL TYPE CODE NO.

CODE	TERMINAL TYPE	REMARK
1	Fasten Type	
2	Lead Wiring Type	

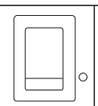
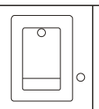
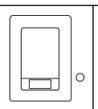
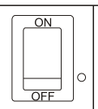
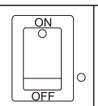
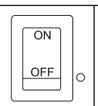
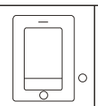
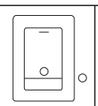
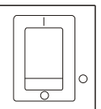
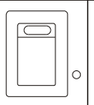
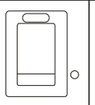
③ KNOB TYPE CODE NO.

CODE	KNOB TYPE	REMARK
	NORMAL Type	
-01	EMBOSS MARK Type	

④ COLOR CODE NO.

CODE	CIRCUIT
W	WHITE
B	BLACK
R	RED

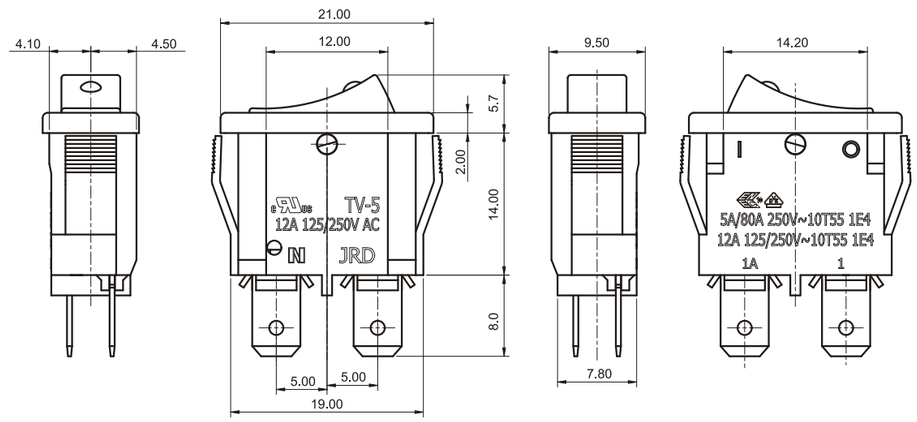
⑤ MARKING VARIETY (O: ROCKER SWITCH NAME POSITION)

MARKING										
MODEL	JRD 1101	JRD 1101A	JRD 1101B	JRD 1101C	JRD 1101D	JRD 1101E	JRD 1101G	JRD 1101H	JRD 1101J	
MARKING										
MODEL	JRD 1101K	JRD 1101L	JRD 1101M	JRD 1101N	JRD 1101P	JRD 1101S	JRD 1101T	JRD 1101U		

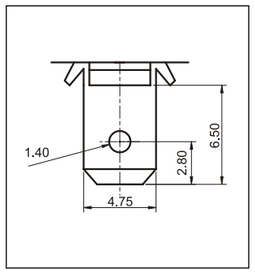
JRD 1101-01

1. Rating
   1-1 Europe: 5A/80A 250V~, 12A 125/250V~
   1-2 America TV-5, 12A 125/250V~
2. Pollution Degree 2
3. Rated Impulse Withstanding Voltage: 2.5KV
4. Operating Force: 400±200gf
5. Circuit: SPST
6. General Tolerance: ±0.3
7. Manufacturing Specification Would Be in Accordance With JK-0105
8. Safety Standard Approval: UL, CUL, VDE, ENEC, EK

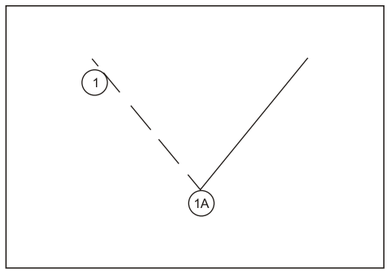
JRD 1101HWBB-01



Detail of Terminal

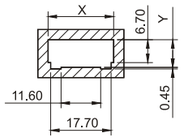


Circuit Diagram



Mounting Hole Dimensions

BOARD(Thickness)	X	Y
0.75~1.25	19.2	8.1
1.25~2.00	19.4	8.1



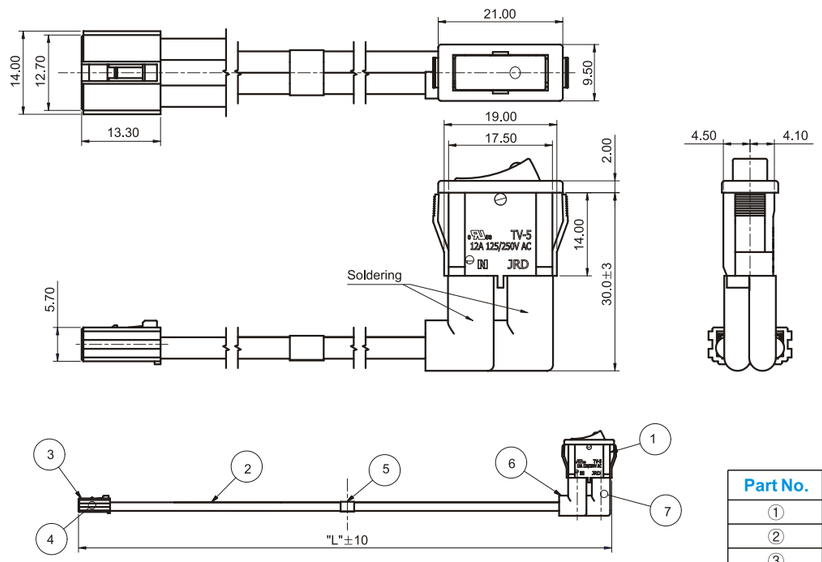
POWER SWITCHES

JRD 1101-01

Harness Assembly

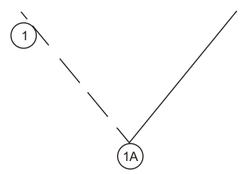
1. Rating
   1-1 Europe: 5A/80A 250V~, 12A 125/250V~
   1-2 America TV-5, 12A 125/250V~
2. Pollution Degree 2
3. Rated Impulse Withstand Voltage: 2.5KV
4. Operating Force: 400±200gf
5. Circuit: SPST
6. General Tolerance: ±0.3
7. Manufacturing Specification Would Be in Accordance With JK-0105

Part Name	"L"(mm)
JRD1101-01W02MB16	160
JRD1101-01W02MB20	200
JRD1101-01W02MB25	250
JRD1101-01W02MB40	400
JRD1101-01W02MB45	450



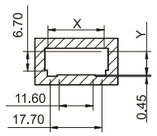
Part No.	Part Name
①	JRD 1101-01
②	CABLE
③	HOUSING
④	HOUSING TERMINAL
⑤	VINYL TAPE
⑥	SLEEVE
⑦	FASTEN TERMINAL

Circuit Diagram



Mounting Hole Dimensions

BOARD(Thickness)	X	Y
0.75~1.25	19.2	8.1
1.25~2.00	19.4	8.1

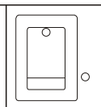


JRD 1201-01

JRD 1201 A W B B-01

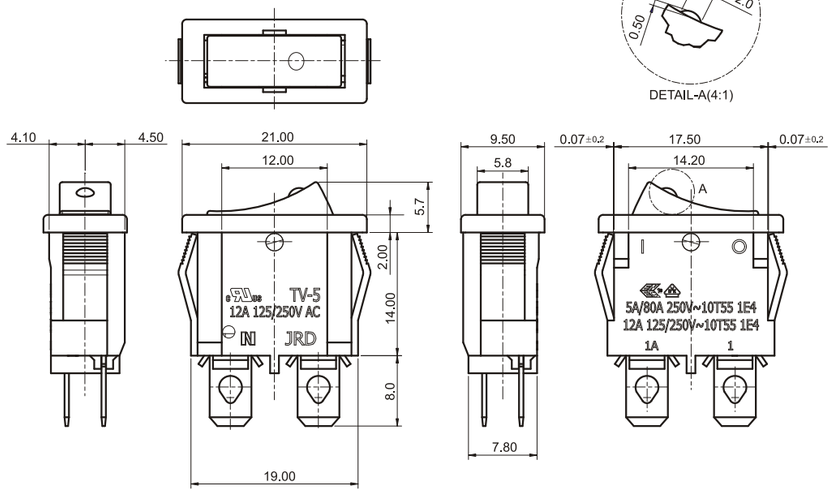
④Case Color
③KNOB COLOR
②PRINT COLOR
①MARKING VARIETY

MARKING VARIETY
(O: ROCKER SWITCH NAME POSITION)

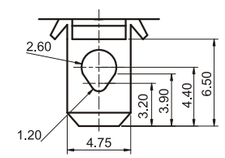
MARKING		
CODE NO.	110031101089	
MODEL	JRD 1201-01	

CODE	COLOR	REMARK
W	WHITE	
B	BLACK	
R	RED	

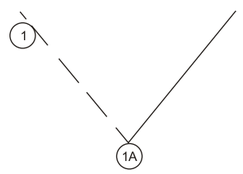
1. Rating
   1-1 Europe: 5A/80A 250V~, 12A 125/250V~
   1-2 America TV-5, 12A 125/250V~
2. Pollution Degree 2
3. Rated Impulse Withstand Voltage: 2.5KV
4. Operating Force: 400±200gf
5. Circuit: SPST
6. General Tolerance: ±0.3
7. Manufacturing Specification Would Be in Accordance With JK-0105
8. Safety Standard Approval: UL, CUL, VDE, ENEC, EK



Detail of Terminal

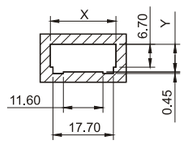


Circuit Diagram



Mounting Hole Dimensions

BOARD(Thickness)	X	Y
0.75~1.25	19.2	8.1
1.25~2.00	19.4	8.1



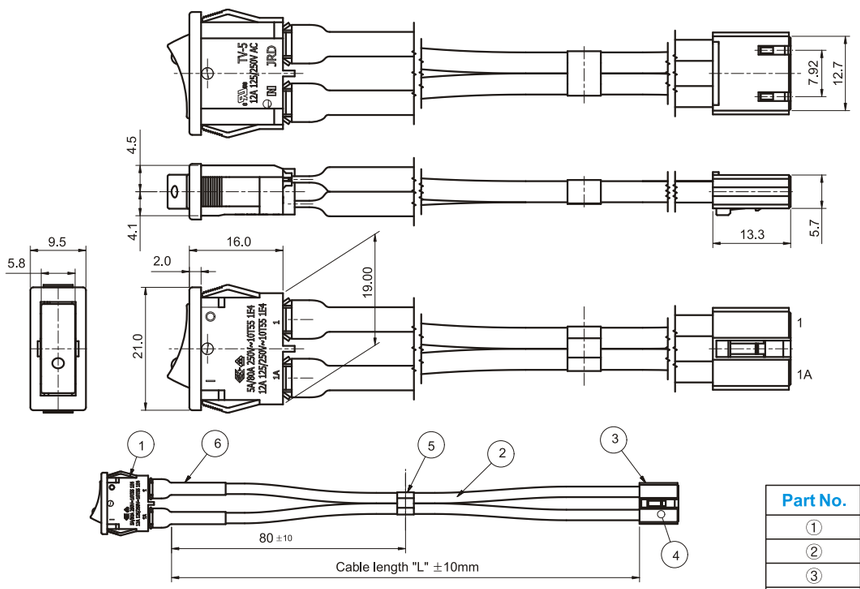
POWER SWITCHES

JRD 1201-01

Harness Assembly

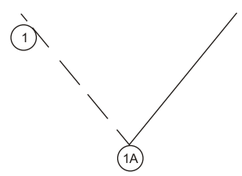
1. Rating
   1-1 Europe: 5A/80A 250V~, 12A 125/250V~
   1-2 America TV-5, 12A 125/250V~
2. Pollution Degree 2
3. Rated Impulse Withstand Voltage: 2.5KV
4. Operating Force: 400±200gf
5. Circuit: SPST
6. General Tolerance: ±0.3
7. Manufacturing Specification Would Be in Accordance With JK-0105W

Part Name	"L"(mm)
JRD1201-01W02MB16	160
JRD1201-01W02MB	190
JRD1201-01W02MB40	400



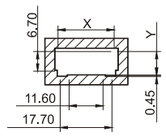
Part No.	Part Name
①	JRD 1201-01
②	CABLE
③	HOUSING
④	HOUSING TERMINAL
⑤	VINYL TAPE
⑥	TUBE

Circuit Diagram



Mounting Hole Dimensions

BOARD(Thickness)	X	Y
0.75~1.25	19.2	8.1
1.25~2.00	19.4	8.1



Model No. Explanation(Push Power Switches)

JPP2295 A A S 1 1 - 0 1

⑦ MODIFY MODEL NO.
⑥ TERMINAL TYPE
⑤ MOUNTING METHOD
④ OPERATING MODE
③ CIRCUIT
② TRAVEL
① MODEL NAME

① MODEL NAME: JPP1197, JPP2197, JPP2295, JPP2295M

② TRAVEL

CODE	FULL (mm)	LOCK (mm)
A	5.5	4.0
B	4.0	2.5
C	3.5	2.5
D	4.5	3.5
E	3.0	1.5
F	2.5	1.5
G	4.5	3.0

③ CIRCUIT

CODE	CIRCUIT
A	SPST
B	SPDT
C	DPST
D	DPDT

④ OPERATING MODE

CODE	MODE
S	SELF LOCK
N	NON LOCK

⑤ MOUNTING METHOD

CODE	METHOD	PITCH
1	TAP TYPE	
2	TAP TYPE	18mm
3	TAP TYPE	20mm
4	HOLE TYPE	
5	HOLE TYPE	18mm
6	HOLE TYPE	20mm
7	P.C.B TYPE	
8	FRONT PLATE(NONE)	

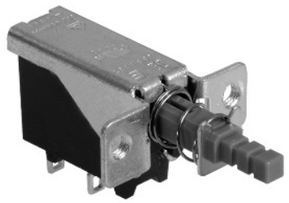
⑥ TERMINAL TYPE(Up, Down: Direction of Terminal)

CODE	TYPE			
	P.C.B		LEAD	
	UP	DOWN	UP	DOWN
1		O	O	
2		O		
3			O	
4				O

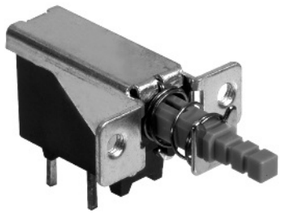
⑦ MODIFY MODEL NO.

POWER SWITCHES

JPP 1197CAS34, JPP 1197ACAS32



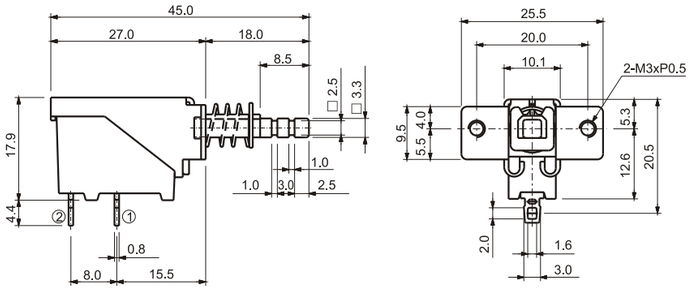
JPP 1197CAS34



JPP 1197ACAS32

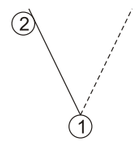
1. Rating: AC250V 5A/80A, TV-5
2. Contact Resistance: 100mΩ AT DC 5V 1A
3. Dielectric Strength: AC 1,000V for 1Minute (TM'L-TM'L)
4. Operating Force: 400±100gf
5. Circuit: SPST
6. Safety Standard Approval: UL, CUL, VDE

JPP 1197CAS34

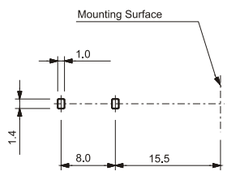


Circuit Diagram

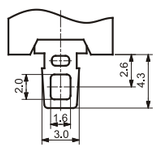
SPST



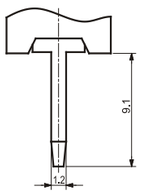
P.C.B Mounting Hole Dimensions



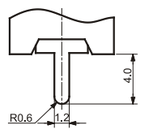
Lead Wiring Type



P.C.B "A" TYPE



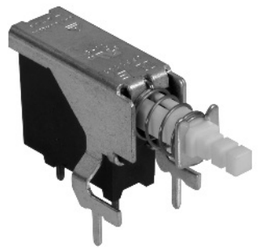
P.C.B "B" TYPE



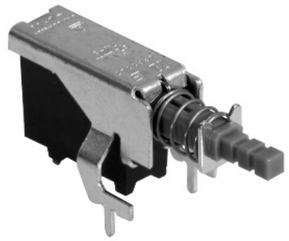
MODEL VARIETY

ITEM		MODEL NAME					
		JPP1197CAS34	JPP1197CAS64	JPP1197ACAS32	JPP1197ACAS62	JPP1197BCAS32	JPP1197BCAS62
Lead Wiring Type		O	O				
P.C.B "A" TYPE				O	O		
P.C.B "B" TYPE						O	O
Front Mounting Type	M3.0 X P0.5 TAP	O		O		O	
	Φ3.2 Holes		O		O		O

JPP 1197CAS72, JPP 1197BCAS72



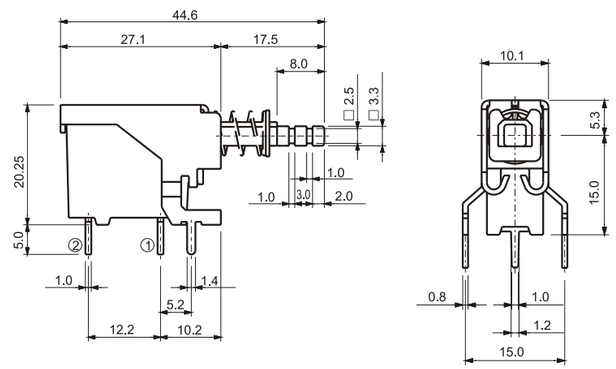
JPP 1197CAS72



JPP 1197BCAS72

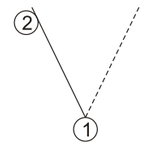
1. Rating: AC250V 5A/ 80A, TV-5
2. Contact Resistance: 100mΩ Max.
3. Dielectric Strength: AC 1000V for 1Minute (TM'L-TM'L)
4. Operating Force: 350±100gf
5. Circuit: SPST
6. Safety Standard Approval: UL, CUL, VDE

JPP 1197CAS72

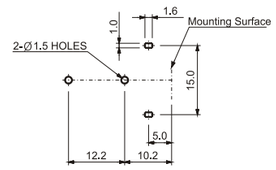


Circuit Diagram

SPST

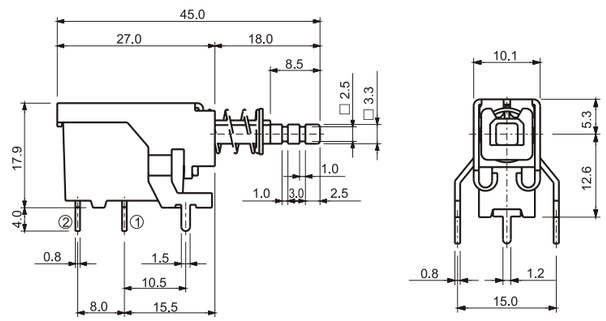


P.C.B Mounting Hole Dimensions



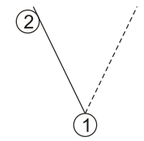
P.C.B HOLE DIMENSION

JPP 1197BCAS72

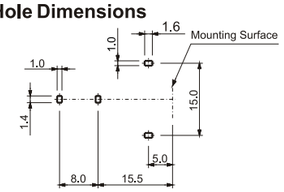


Circuit Diagram

SPST



P.C.B Mounting Hole Dimensions



P.C.B HOLE DIMENSION

POWER SWITCHES

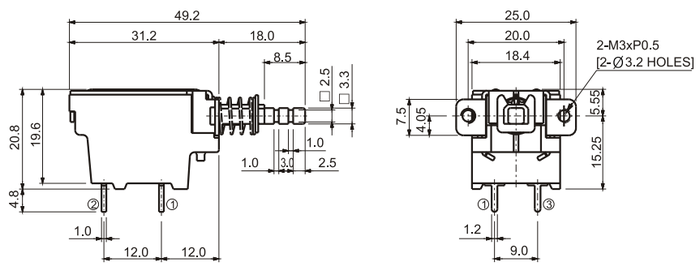
JPP 2197B, JPP 2197ECS

JPP 2197B

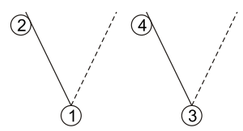
JPP 2197ECS

1. Rating: AC250V 5A/ 80A, TV-5
2. Contact Resistance: 50mΩ Max. AT DC 5V 1A
3. Dielectric Strength: AC 1,000V for 1Minute(TM'L-TM'L)
4. Life Expectancy (6-10 Cycles/Minute)
   4-1. Electrical: 25,000 Cycles
5. Operating Force: 400±200gf
6. Circuit: DPST
7. Safety Standard Approval: UL, CUL, VDE

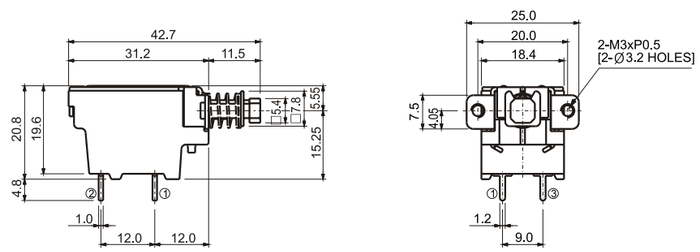
JPP 2197B



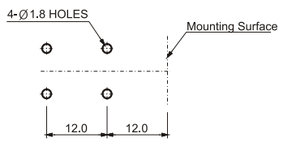
Circuit Diagram
DPST



JPP 2197ECS

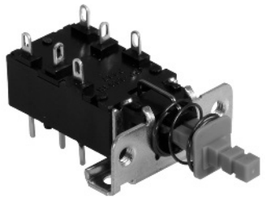


P.C.B Mounting Hole Dimensions

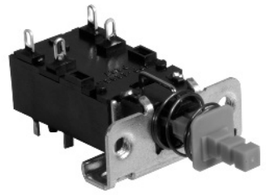


ITEM		MODEL NAME			
		JPP2197BCS62	JPP2197BCS32	JPP2197ECS62	JPP2197ECS32
Operating Force	400±200gf	O	O		
Travel	Full:4.0mm, Lock:2.5mm	O	O		
	Full:3.0mm, Lock:1.5mm			O	O
Front Mounting Type	M3.0 X p0.5 TAP		O		O
	Φ3.2 Holes	O		O	

JPP 2295MPADS31 | JPP2295MPACS31

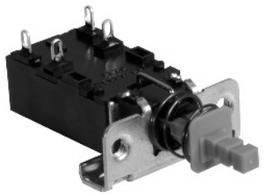


JPP 2295MPADS31



JPP2295MPACS31

JPP2295MPACS33 | JPP 2295MPACS72



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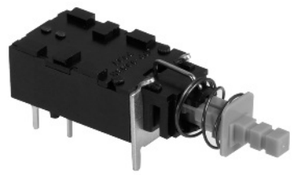
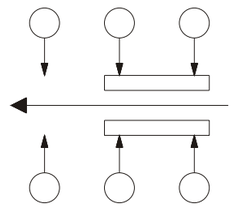


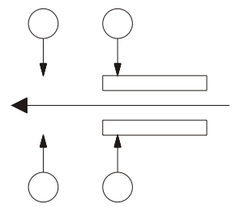
JPP 2295MPACS72

1. Rating: AC125V 7A, AC 250V 4A
2. Contact Resistance: 100mΩ Max.
   At DC 5V 1A
3. Dielectric Strength: AC 1,000V for
   1Minute(TM'L-TM'L)
4. Life Expectancy (6-10 Cycles/Minute)
   4-1. Electrical: 6,000 Cycles(R-L Load)
5. Operating Force: 550±150gf
6. Operation Mode: Self Lock, Non Lock
7. Travel: Full: 5.5mm, Lock: 4.0mm
   Full: 4.0mm, Lock: 2.5mm
8. Circuit: DPDT, DPST
9. Safety Standard Approval:
   UL, CUL, VDE

Circuit Diagram
DPDT

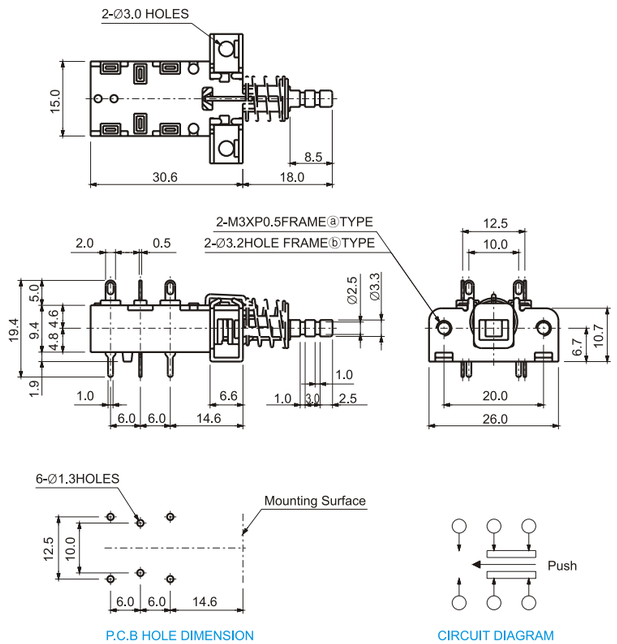


Circuit Diagram
DPST

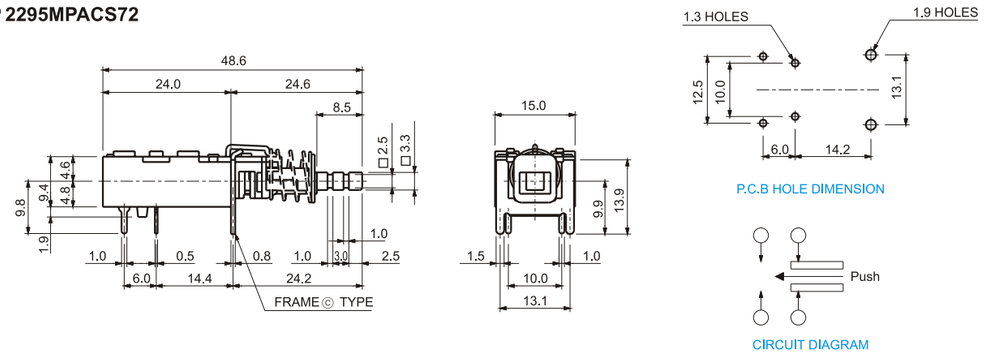


ITEM		MODEL NO.									
		2295MADS31	2295MADN31	2295MADS81	2295MADN81	2295MPACS31	2295MPADS31	2295MPADN31	2295MPACS33	2295MPACS72	2295MPADS81
FRAME ⓐ		O	O			O	O	O	O		
FRAME ⓑ											
FRAME ⓒ										O	
LOCK		O		O		O	O		O	O	O
NON LOCK			O		O			O			
TERMINAL W		O	O	O	O	O	O	O	O		O
TERMINAL P		O	O	O	O	O	O	O		O	O
POLE						O	O	O	O	O	O
CIRCUIT	DPDT	O	O	O	O		O	O			O
	DPST					O			O	O	

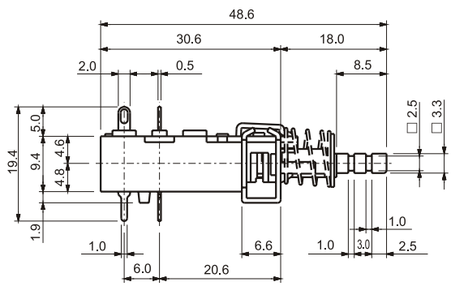
JPP 2295MPADS31



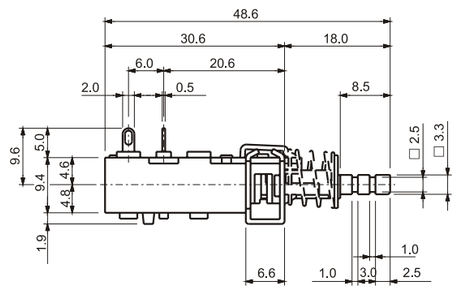
JPP 2295MPACS72



JPP2295MPACS31



JPP2295MPACS33



Model No. Explanation(Voltage Switches)

JVS 12 20 N P A W B - 0 1

- ⑨ MODIFY MODEL No.
- ⑧ KNOB COLOR
- ⑦ PRINT COLOR
- ⑥ MARKING VARIETY
- ⑤ TERMINAL TYPE
- ④ CASE TYPE
- ③ DESIGN No.
- ② CIRCUIT
- ① SELECTOR SWITCH TYPE

① SELECTOR SWITCH TYPE

② CIRCUIT

CODE	CIRCUIT
11	SPST
12	SPDT
21	DPST
22	DPDT

③ DESIGN No.: 20, 21, 22, 23, ……

④ CASE TYPE

CODE	CASE TYPE
H	HOLE TYPE
D	DENT NUT TYPE
N	NUT TYPE
W	NON-HOLE TYPE

⑤ TERMINAL TYPE

CODE	MOUNTING METHOD
L	LEAD WIRING TYPE
P	P.C.B TYPE

6-1 MARKING VARIETY(JVS 1220, 1221 SERIES)

CODE	MARKING	CODE	MARKING	CODE	MARKING
	110V / 220V	E	220V / 110V	K	
A	110V / 220V	F	230 / 120	L	
B	220V/110V	G		M	
C	/	H		N	115V/230V
D	220V/240V / 110V/127V	J	110V/220V	O	

6-2 MARKING VARIETY(JVS 2221 SERIES)

CODE	MARKING	CODE	MARKING
A	/	D	230 / 120
B	110V / 220V	E	115 / 230
C	230 / 115	F	220 / 110

⑦ PRINT COLOR

CODE	COLOR
W	WHITE
B	BLACK
R	RED
O	BROWN

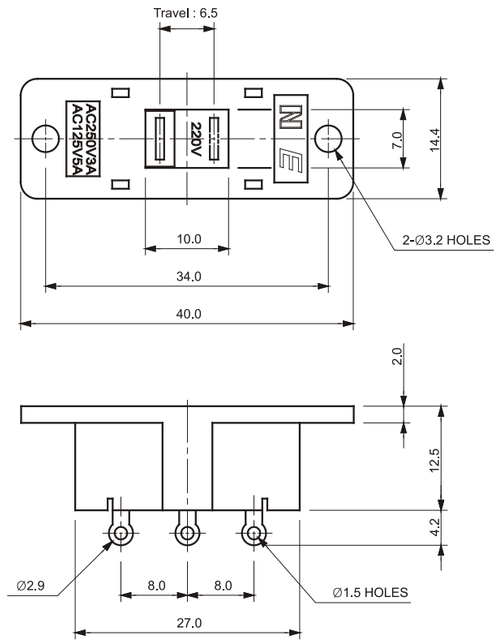
⑧ KNOB COLOR

⑨ MODIFY MODEL No.

POWER SWITCHES

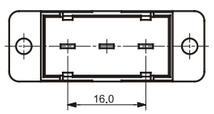
JVS 1220

1. Rating: AC250V 3A, AC 125V 5A
2. Contact Resistance: 100mΩ Max.
3. Dielectric Strength: AC 1000V for 1Minute(TM'L-TM'L)
4. Life Expectancy (6-10 Cycles/Minute)
   4-1. Electrical: 500 Cycles(R-L LOAD)
5. Operating Force: JVS 1220 400±150gf
   JVS 2220 600±150gf
6. Timing: Non shorting
7. Circuit: SPDT, DPDT

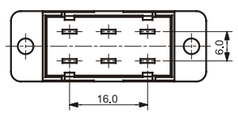


TERMINAL Arrangement(Bottom View)

JVS1220

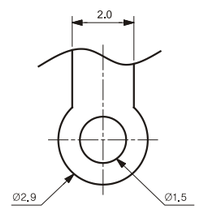


JVS2220



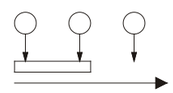
Detail of Terminal

JVS2220

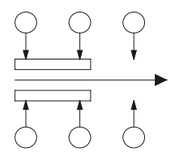


Circuit Diagram

JVS1220



JVS2220



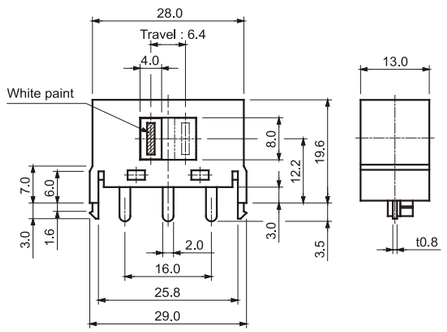
JVS 1221X, JVS 1222

JVS 1221X

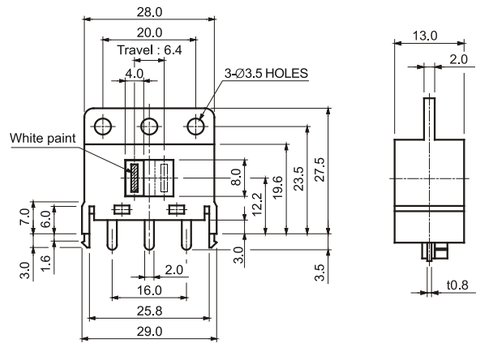
JVS 1222

1. Rating: AC 250V 3A, AC125V 5A
2. Contact Resistance: 100mΩ Max.
   At DC 5V 1A
3. Dielectric Strength: AC 2,000V for 1Minute(TM'L-TM'L)
4. Life Expectancy (6~10Cycles/Minute)
   4-1 Electrical: 1,000 Cycles(R-L Load)
5. Operating Force: 600±200gf
6. Timing: Non shorting
7. Circuit: SPDT

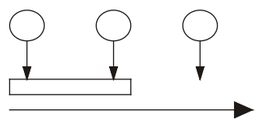
JVS1222



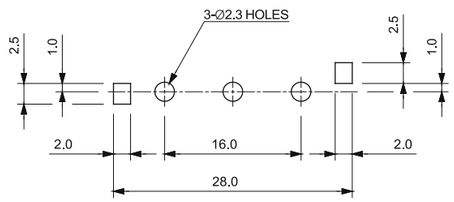
JVS1221X



Circuit Diagram



P.C.B Mounting Hole Dimensions



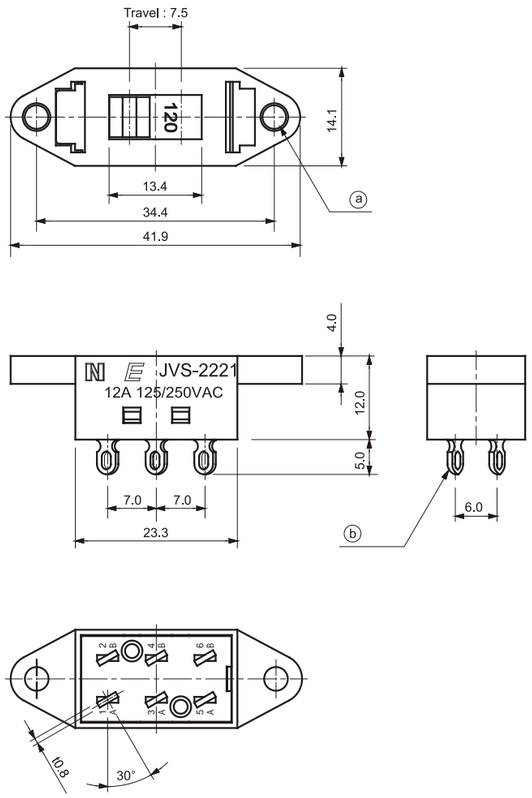
POWER SWITCHES

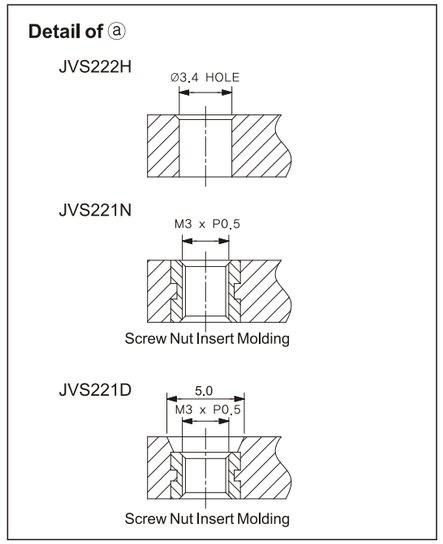
JVS 2221, JVS 2221N

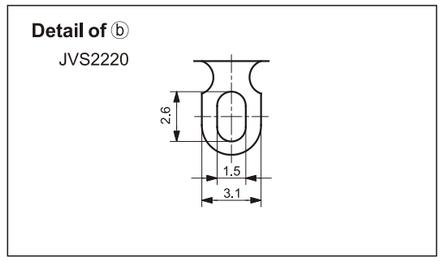
JVS 2221

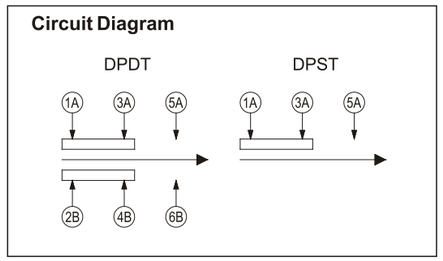
JVS 2221N

1. Rating: AC 125/250V 12A
2. Contact Resistance: 100mΩ Max.
   At DC 5V 1A
3. Dielectric Strength: AC 2,000V for 1Minute(TM'L-TM'L)
4. Life Expectancy (6~10Cycles/Minute)
   4-1 Electrical: 1,000 Cycles(R-L Load)
5. Operating Force: 800±200gf









DETECTOR SWITCHES

CONTENTS

SPECIFICATIONS · · · · · 80
DETECTOR SWITCHES · · · · · 81
SENSOR SWITCHES · · · · · 86

Common Specifications

1. Rating : As per individual specifications

2. Electrical Performance

Item	Test Condition	Performance
Contact Resistance	DC 5V 1A	As per Individual Specifications
Insulation Resistance	DC 100V for 1 minute	100MΩ Min.
Withstanding Voltage	AC 100V for 1 minute	Not Breaking Insulation

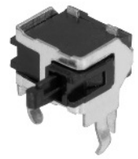
3. Mechanical Performance

Item	Test Condition	Performance
Operating Force		As per Individual Specifications
Terminal Strength	300gf for 1minute	No terminal Rejection and Insulation Material breakage
Solder Ability		250℃±5/3±0.5sec.

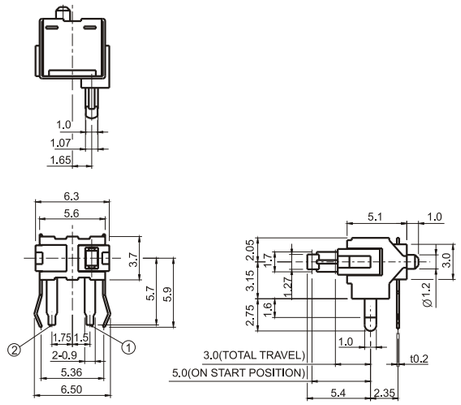
4. Endurance

Item	Test Condition	Performance
Life Test	10,000 Cycles Without load 10,000 Cycles With load (DC 30V 0.1A)	Contact Resistance:2Ω Max. Operating Force: ±10% Initial Value Insulation Resistance: 1MΩ Min. Withstand Voltage: AC 100V for 1minute
Cold Proof	-30±2℃ for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	Contact Resistance:1Ω Max. Operating Force: ±10% Initial Value Insulation Resistance: 1MΩ Min. Withstand Voltage: AC 100V for 1minute
Dry Heat Proof	85±2℃ for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	
Moisture Resistance	60±2℃, 90~95% RH for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	

JDS 1105-4X

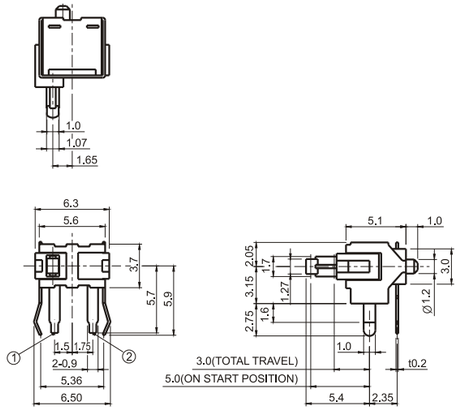


1. Rating: DC 30V 0.1A
2. Circuit: 1C-1P
3. Contact Resistance: 1Ω Max.
4. Operating Force: 36gf Max.
5. Life Cycles: 50,000 Cycles Min.



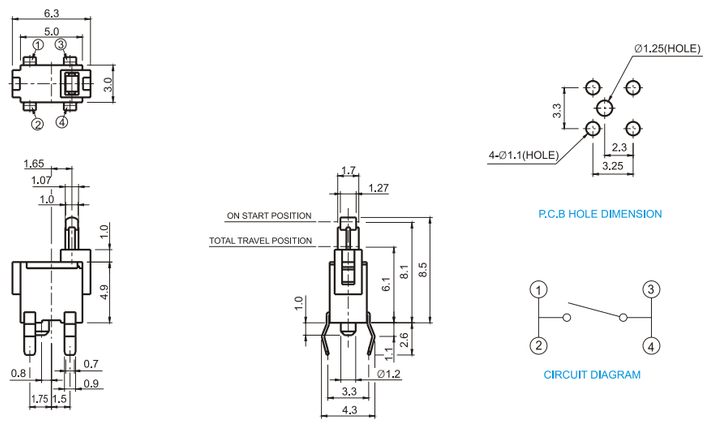
JDS 1105-6XD

1. Rating: DC 30V 0.1A
2. Circuit: 1C-1P
3. Contact Resistance: 1Ω Max.
4. Operating Force: 36gf Max.
5. Life Cycles: 50,000 Cycles Min.



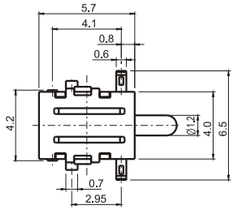
JDS 1105A

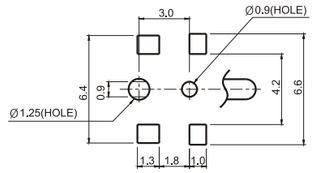
1.Rating: DC 30V 0.1A
2. Circuit: 1C-1P
3. Contact Resistance: 1Ω Max.
4. Operating Force: 36gf Max.
5. Life Cycles: 50,000 Cycles Min.



DETECTOR SWITCHES

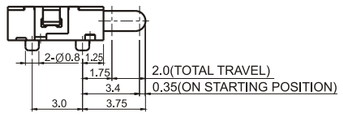
JDS 1108

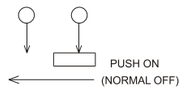




P.C.B LAND DIMENSION

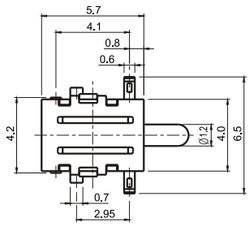
1. Rating: DC 12V, 100mA (Resistive Load)
2. Circuit: 1C-1P
3. Contact Resistance: 80mΩ Max.
4. Operating Force: 50gf Max.
5. Life Cycles: 50,000 Cycles Min.

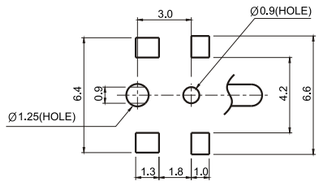




CIRCUIT DIAGRAM

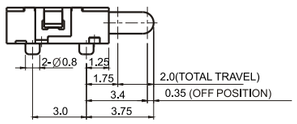
JDS 1108RA

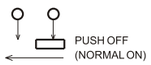




P.C.B LAND DIMENSION

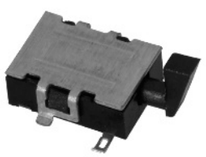
1.Rating: DC 12V, 100mA (Resistive Load)
2. Circuit: 1C-1P
3. Contact Resistance: 80mΩ Max.
4. Operating Force: 50gf Max.
5. Life Cycles: 50,000 Cycles Min.

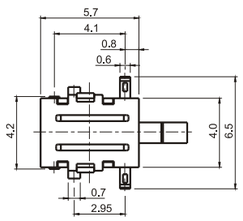


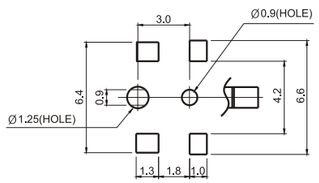


CIRCUIT DIAGRAM

JDS 1108P

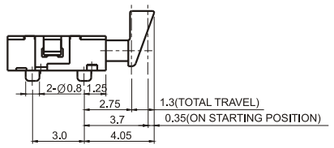


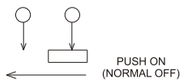




P.C.B LAND DIMENSION

1.Rating: DC 12V, 100mA (Resistive Load)
2. Circuit: 1C-1P
3. Contact Resistance: 80mΩ Max.
4. Operating Force: 50gf Max.
5. Life Cycles: 50,000 Cycles Min.

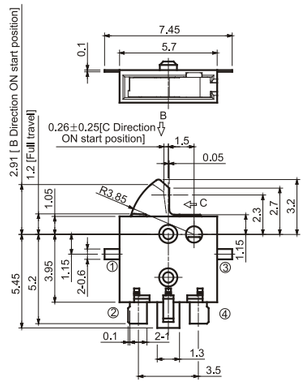


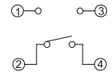


CIRCUIT DIAGRAM

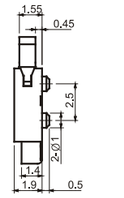
JDS 1107L

1.Rating: DC 3V, 50 μA ~DC 5V, 10mA
2. Circuit: 1C-1P
3. Contact Resistance: 1Ω Max.
4. Operating Force: 30gf Max.
5. Life Cycles: 50,000 Cycles Min.

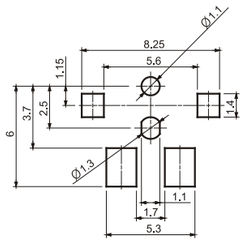




CIRCUIT DIAGRAM



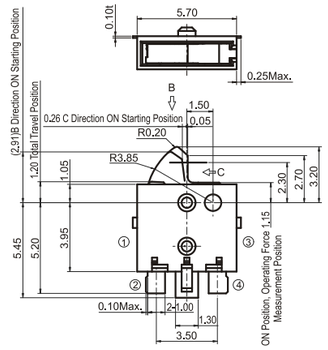
① ③ : DUMMY TERMINAL

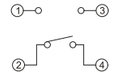


P.C.B LAND DIMENSION

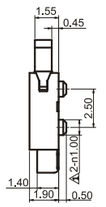
JDS 1107LA

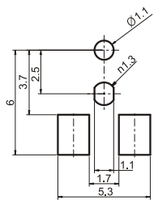
1.Rating: DC 3V, 50 μA ~DC 5V, 10mA
2. Contact Resistance: 1Ω Max.
3. Operating Force: 30gf Max.
4. Life Cycles: 50,000 Cycles
5. General Tolerance: ±0.3
6. Terminal ①, ③: Dummy Terminal





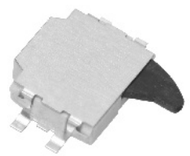
CIRCUIT DIAGRAM



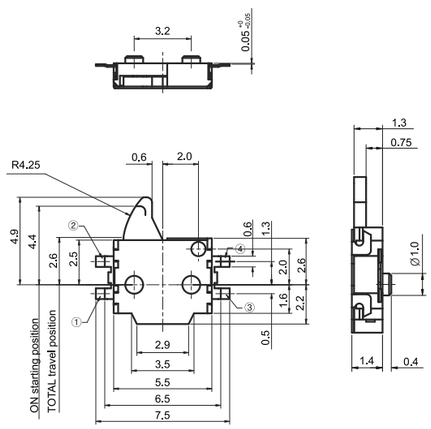


P.C.B LAND DIMENSION

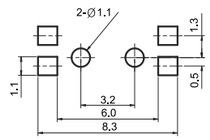
JDS 1114



1. Rating: 0.1 to 10mA 5V DC
2. General Tolerance: ±0.2mm
3. Contact Resistance: 1Ω Max.
4. Operating Force: 30gf Max.
5. Life Cycles: 50,000 Cycles



CIRCUIT DIAGRAM

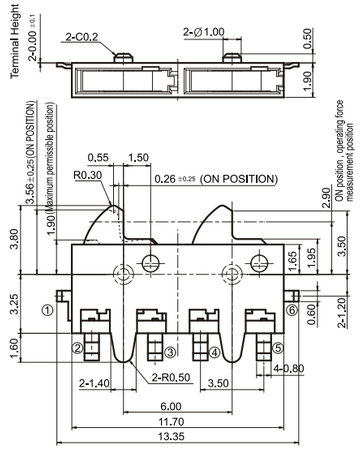


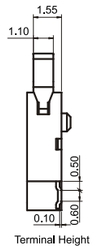
P.C.B LAND DIMENSION

DETECTOR SWITCHES

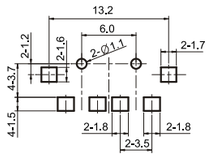
JDS 2107L

1. Rating: DC 3V 50μA~DC 5V 10mA
2. Contact Resistance: 500mΩ Max.
3. Operating Force: 30gf Max.
4. Life Cycles: 100,000 Cycles
5. General Tolerance: ±0.3mm





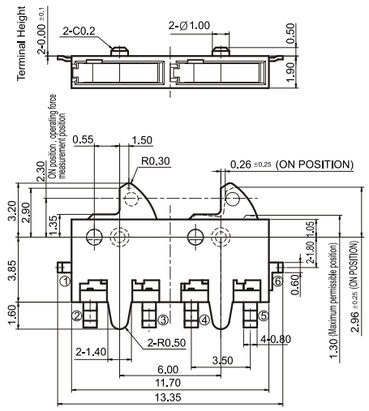
CIRCUIT DIAGRAM

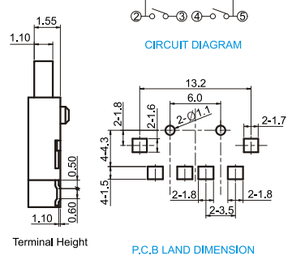


P.C.B LAND DIMENSION

JDS 2107R

1. Rating: DC 3V 50μA~DC 5V 10mA
2. Contact Resistance: 1Ω Max.
3. Operating Force: 30gf Max.
4. Life Cycles: 100,000 Cycles
5. General Tolerance: ±0.3mm



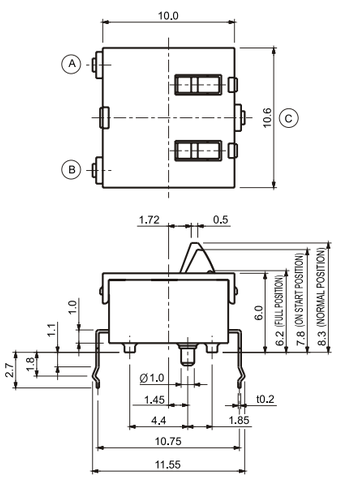


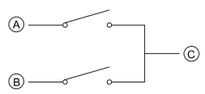
CIRCUIT DIAGRAM

P.C.B LAND DIMENSION

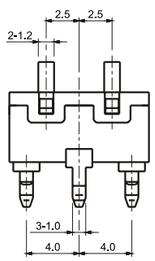
JDS 2160

1. Rating: DC 5V 1.0mA
2. Circuit: 2C-1P
3. Contact Resistance: 500mΩ Max.
4. Operating Force: 50gf Max.
5. Life Cycles: 100,000 Cycles



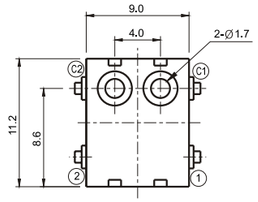


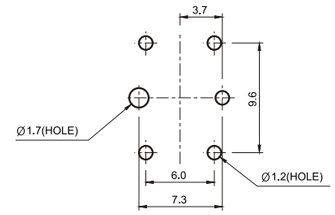
CIRCUIT DIAGRAM



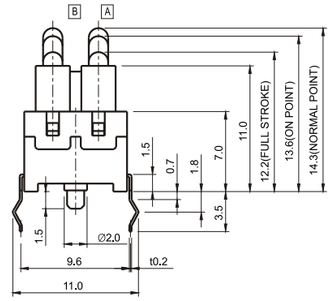
JDS 2200A

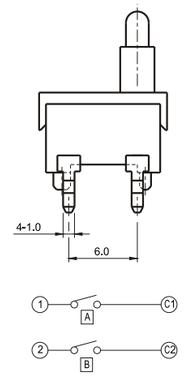
1. Rating: DC 5V 1.0mA
2. Circuit : 2C-1P
3. Contact Resistance: 500mΩ Max.
4. Operating Force: 30gf Max.
5. Life Cycles: 100,000 Cycles





P.C.B HOLE DIMENSION

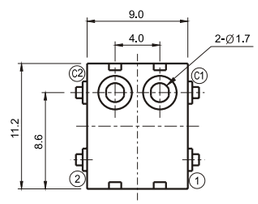


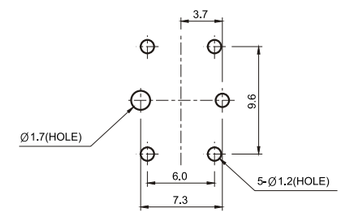


CIRCUIT DIAGRAM

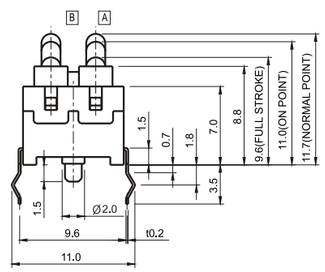
JDS 2200C

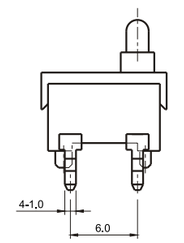
1. Rating: DC 5V 1.0mA
2. Circuit : 2C-1P
3. Contact Resistance: 500mΩ Max.
4. Operating Force: 30gf Max.
5. Life Cycles: 100,000 Cycles





P.C.B HOLE DIMENSION

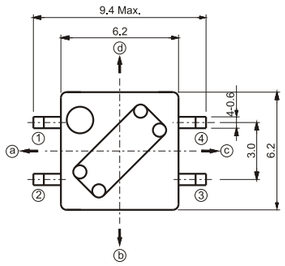




CIRCUIT DIAGRAM

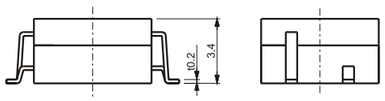
JDS 4100

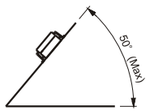
1. Rating: DC 5V 1mA
2. Circuit: 4C-1P
3. Detection Angle(Tilt Angle): 50˚ (Max)



CIRCUIT DIRECTION

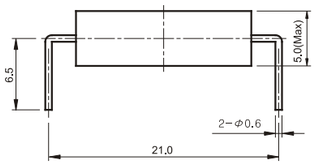
Tilt directions	Terminals pulse rise	Remarks
ⓐ	① — ②	
ⓑ	② — ③	
ⓒ	③ — ④	
ⓓ	① — ④	



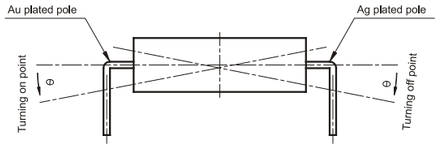


TILT ANGLE PULSE RISE

NVS 4602

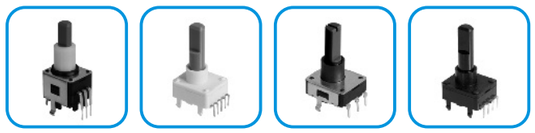


1. Rating: DC 12V 5mA
2. Differential Angle: Θ<10deg.--- Turning on(off) point



Operating Angle

ENCODER SWITCHES



CONTENTS

SPECIFICATIONS · · · · · 88

Common Specifications

1. Rating : DC28V 10mA

2. Electrical Performance

Item	Test Condition	Performance
Contact Resistance	DC 5V 1A	500mΩ Max.
Insulation Resistance	DC 100V for 1 minute	10MΩ Min.
Withstanding Voltage	AC 100V for 1 minute	Shall be free from Dielectric Breakage

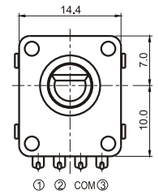
3. Mechanical Performance

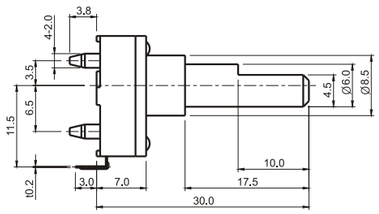
Item	Test Condition	Performance
Total Rotational Angle		As per individual Specifications
Step Angle		
Rotational Torque		
Change over Timing(Mode)		
Stop Strength		3kgf·cm
Output Code		Gray Code.
Shaft Strength	A Static load of 300gf shall be applied in the horizontal direction of shaft for 15seconds and A static load of 500gf shall be applied in the vertical direction of shaft for 15 seconds.	Shall be free from pronounced bending and mechanical abnormalities
Shaft Push/Pull Strength	A Static load of 300gf shall be applied in the vertical direction of shaft for 10 seconds.	Shall be free from electrical, mechanical abnormalities
Movement of Shaft	Measure the movement of shaft during a static load of 300gf shall be applied in the horizontal direction of shaft.	Shall be free from electrical, mechanical abnormalities
Terminal Strength	A Static load of 200gf shall be applied in the tip of terminal 1minute.	Shall be free from terminal looseness and damage

4. Endurance

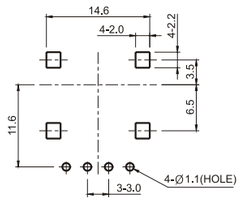
Item	Test Condition	Performance
Operating Life with Load	Switch shall be operated 30,000 cycles at 800 cycles /Hr with DC 28V 10mA. One Switching cycle consists of a progression through all switching positions and then back again.	Shall be free from electrical abnormalities Rotational torque: within ±30% of initial value
Dry Heat Proof	After testing at 85±2℃ for 96hours, the switch shall be allowed to stand under normal temperature and humidity condition for 1hour and then measurement shall be mode within 1 hour.	Shall be free from electrical, mechanical abnormalities
Cold Proof	After testing at -30±2℃ for 96hours, the switch shall be allowed to stand under normal temperature and humidity condition for 1hour and then measurement shall be mode within 1 hour. Water drops shall be removed.	
Moisture Resistance	After testing at 60±2℃ and 90~95%RH for 96hours, the switch shall be allowed to stand under normal temperature and humidity condition for 1hour and then measurement shall be mode within 1 hour. Water drops shall be removed.	

JES 1408G





1.Rating: DC 28V 10mA
2. Contact Resistance: 500mΩ
3. Total Rotation Angle: 210˚±5℃
4. Step Angle: 30˚±2℃
5. Rotation Torque: 200±100gf.cm
6. Operating Life: 30,000 Cycles
7. Circuit: 3Bit

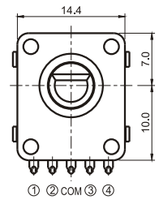


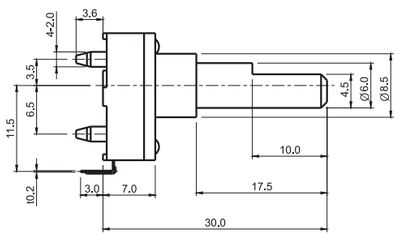
P.C.B HOLE DIMENSION

Terminal \ Shaft Position	0	1	2	3	4	5	6	7
Terminal 1	O	O	X	X	O	O	X	X
Terminal 2	X	O	O	O	O	X	X	X
Terminal 3	X	X	X	O	O	O	O	X

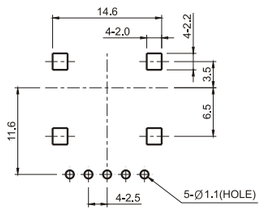
※ O: ON X:OFF

JES 1411G





1.Rating: DC 28V 10mA
2. Contact Resistance: 500mΩ
3. Total Rotation Angle: 300˚±5℃
4. Step Angle: 30˚±2℃
5. Rotation Torque: 200±100gf.cm
6. Operating Life: 30,000 Cycles
7. Circuit: 4Bit



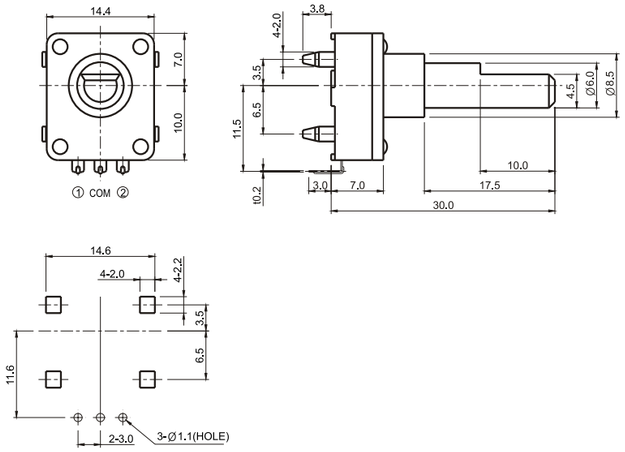
P.C.B HOLE DIMENSION

Terminal \ Shaft Position	0	1	2	3	4	5	6	7	8	9	10
Terminal 1	X	O	O	O	X	X	X	X	X	X	X
Terminal 2	O	O	O	X	X	O	O	O	X	X	X
Terminal 3	X	X	O	O	O	O	O	X	X	O	X
Terminal 3	X	X	X	X	X	X	O	O	O	O	X

※ O: ON X:OFF

ENCODER SWITCHES

JES 1424G



P.C.B HOLE DIMENSION

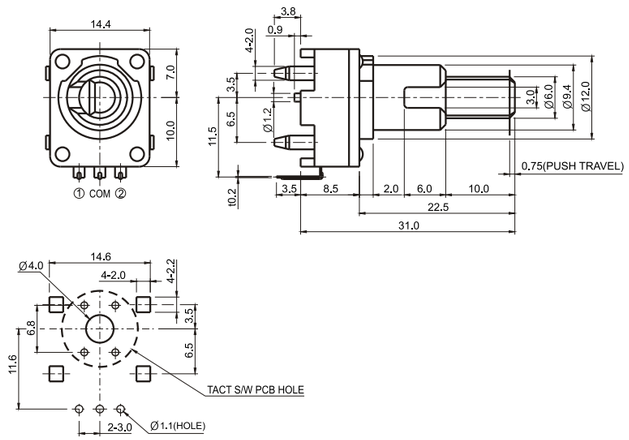
1. Rating: DC 28V 10mA
2. Contact Resistance: 500mΩ
3. Total Rotation Angle: 360˚(Endless)
4. Number of step: 24Steps
5. Step Angle: 15˚±2℃
6. Rotation Torque: 100±50gf.cm
7. Operating Life: 30,000 Cycles
8. Circuit: 2Bit

C.C.W ◁ ▷ C.W

Terminal \ Shaft Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Terminal 1	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X
Terminal 2	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O

※ O: ON X:OFF

JES 1424GS



P.C.B HOLE DIMENSION

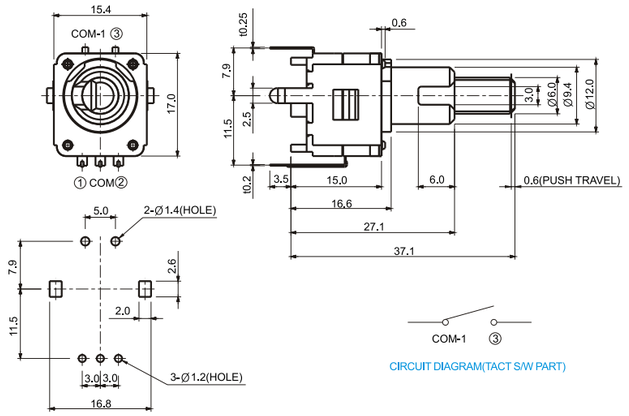
1. Rating: DC 28V 10mA
2. Contact Resistance: 500mΩ
3. Total Rotation Angle: 360˚(Endless)
4. Number of step: 24Steps
5. Step Angle: 15˚±2℃
6. Rotation Torque: 100±50gf.cm
7. Operating Life: 30,000 Cycles
8. Circuit: 2Bit
9. Push Travel: 0.75mm

C.C.W ◁ ▷ C.W

Terminal \ Shaft Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Terminal 1	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X
Terminal 2	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O	X	X	O	O

※ O: ON X:OFF

JES 1512GST



P.C.B HOLE DIMENSION

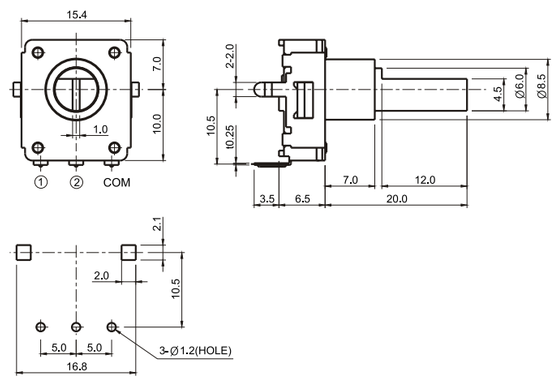
1. Rating:
   1-1. Encoder s/w part: DC 28V 10mA
   1-2. Tact s/w part: DC 12V 50mA
2. Contact Resistance
   2-1. Encoder s/w part: 500mΩ
   2-2. Tact s/w part: 100mΩ
3. Total Rotation Angle: 360˚ (Endless)
4. Number of Clicks: 12Clicks
5. Click Angle: 30˚±2˚
6. Rotation Torque(Encoder s/w part): 180±30gf.cm
7. Operating Force(Tact s/w part): 260±50gf
8. Operating Life:
   8-1. Encoder s/w part: 30,000 Cycles
   8-2. Tact s/w part: 100,000 Cycles
9. Circuit: 2bit
10. Push Travel: 0.60±0.2mm

C.C.W ◁ ▷ C.W

Terminal \ Shaft Position	1	2	3	4	5	6	7	8	9	10	11	12
TERMINAL-1	O	X	X	O	O	X	X	O	O	X	X	O
TERMINAL-2	O	O	X	X	O	O	X	X	O	O	X	X

※ O: ON X:OFF

JES 1612GA



P.C.B HOLE DIMENSION

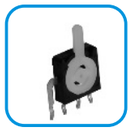
1. Rating: DC 5V 0.5mA
2. Contact Resistance: 500mΩ
3. Total Rotation Angle: 360˚ (Endless)
4. Number of Clicks: 12Clicks
5. Click Angle: 30˚±2˚
6. Rotation Torque: 220±50gf.cm
7. Operating Force: 30,000 Cycles
8. Circuit: 2bit

C.C.W ◁ ▷ C.W

Terminal \ Shaft Position	1	2	3	4	5	6	7	8	9	10	11	12
TERMINAL-1	O	X	O	X	O	X	O	X	O	X	O	X
TERMINAL-2	X	O	X	O	X	O	X	O	X	O	X	O

※ O: ON X:OFF

ROTARY & LEVER SWITCHES



CONTENTS

ROTARY SWITCHES · · · · · 93
LEVER SWITCHES · · · · · 94

Common Specifications

1. Rating : 16V DC 0.1A(Resistive Load)

2. Electrical Performance

Item	Test Condition	Performance
Contact Resistance	DC 5V 1A	100mΩ Max.
Insulation Resistance	DC 100V for 1 minute	100MΩ Min.
Withstanding Voltage	AC 100V for 1 minute	Shall be Free from Dielectric Breakage

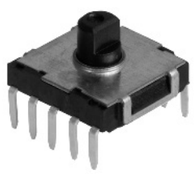
3. Mechanical Performance

Item	Test Condition	Performance
Operating Torque		As per Individual Specifications
Terminal Strength	500gf for 1minute	No Terminal Rejection and Insulation Material Breakage
Solder Ability		250˚C±5˚C/3±0.5 Sec .

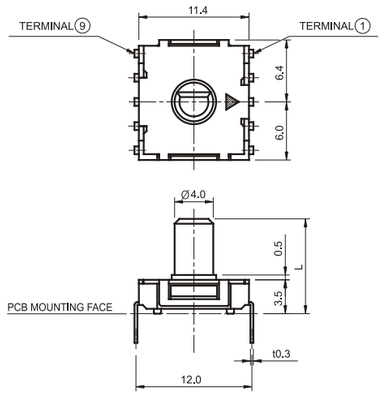
4. Endurance

Item	Test Condition	Performance
Life Test	5,000 Cycles Without load	Contact Resistance: 100mΩ Max. Operating Torque: ±30% Initial Value Insulation Resistance: 100MΩ Min. Withstand Voltage: AC 100V for 1minute
Cold Proof	-30±2˚C for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	
Dry Heat Proof	85±2˚C for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	
Moisture Resistance	60±2˚C, 90~95% RH for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	

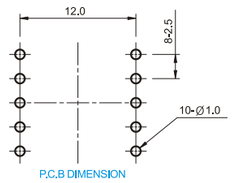
JRS1901



1. Rating: DC 16V 0.1A
2. Circuit & Position: 1C-9P
3. Contact Resistance: 100mΩ Max.
4. Life Cycles: 5,000 Cycles



MODEL	L	I	Operating Force
1901	7.7mm	2.5mm	100±50gf
1901A	9.8mm	4.1mm	
1901W	7.7mm	2.5mm	200±60gf
1901WA	9.8mm	4.1mm	



Common Specifications

1. Rating : As per individual specifications

2. Electrical Performance

Item	Test Condition	Performance
Contact Resistance	DC 5V 1A	As per individual specifications
Insulation Resistance	DC 250V for 1minute	100MΩ Min.
Withstanding Voltage	AC 250V for 1 minute	Not Breaking Insulation

3. Mechanical Performance

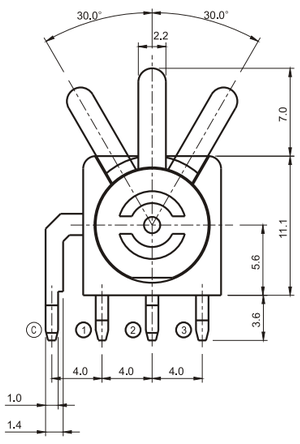
Item	Test Condition	Performance
Operating Force		As per individual manufactured drawing.
Terminal Strength	500gf for 1minute	No terminal Rejection and Insulation Material breakage
Solder Ability		230˚C±5˚C/3±0.5 sec.

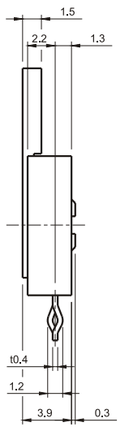
4. Endurance

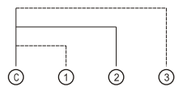
Item	Test Condition	Performance
Life Test	2,000 cycles Without load 2,000 cycles With load (DC 12V 0.1A)	Contact Resistance: 100mΩ Max. Operating Force: +10, -50% Initial Value Insulation Resistance: 10MΩ withstand Voltage: AC 250V for 1minute
Cold Proof	-30±2˚C for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	
Dry Heat Proof	85±2˚C for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	
Moisture Resistance	60±2˚C, 90~95% RH for 96 hours After test, kept in normal condition for 1 hour to be measured within 1 hour	

JLS1301

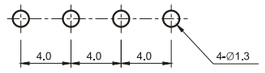
1. Rating: DC 36V 0.2A Max.
2. Step Angle: 30˚±5˚
3. Operating Force: 100~500gf
4. Circuit: 1C-3P
5. Timing: Non-Shorting







CIRCUIT DIAGRAM



P.C.B HOLE DIMENSION

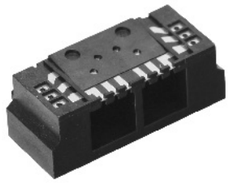
CUSTOM-PRODUCT APPLICATION EXAMPLES

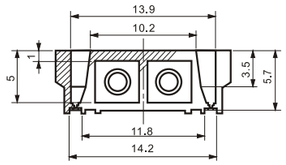
CONTENTS

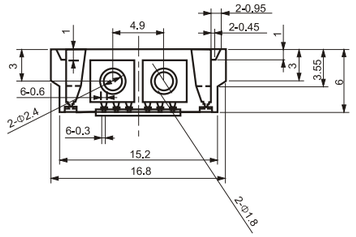
CUSTOM-PRODUCT APPLICATION EXAMPLES · · · · · 96

CUSTOM-PRODUCT APPLICATION EXAMPLES

SOH-BPH1







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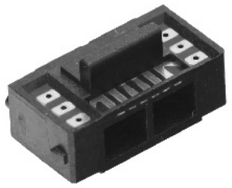

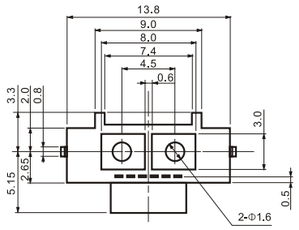

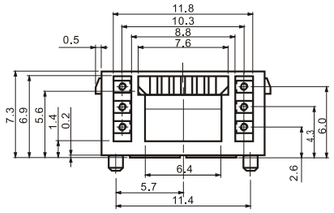

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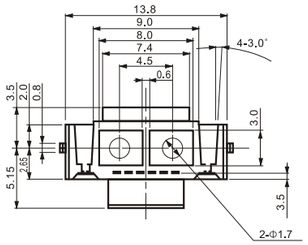
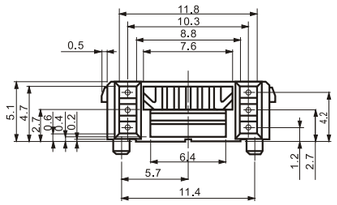
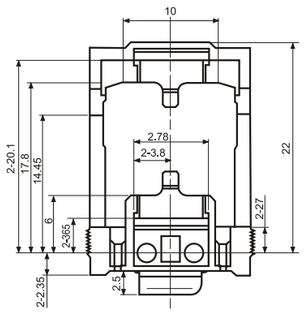
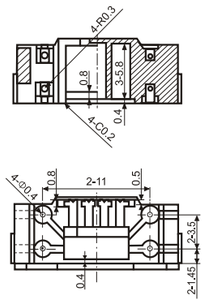


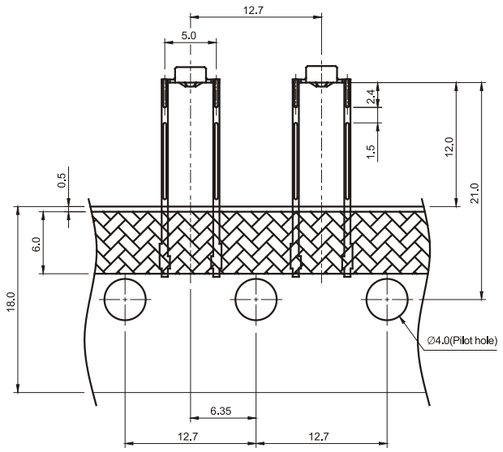


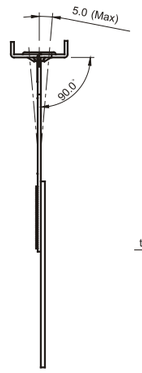
SOH-DL5FL

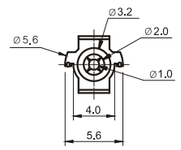


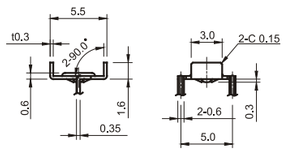


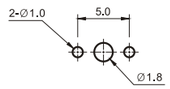
JM3500











P.C.B HOLE DIMENSION

CONNECTOR_SPEC. OF PACKAGING

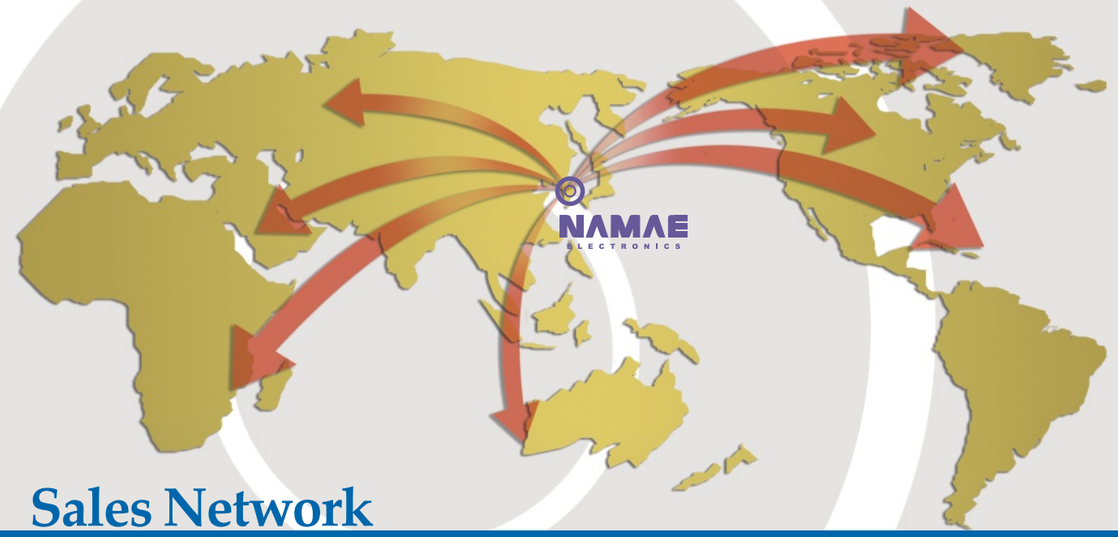
NO	Model No.	規格	Q'TY(PCS)			Remark
			Emboss Tape	Inner Box	Out Box	
1	ND04119J-SG20	CARRIER TAPE(ND041-19)	1,000	1,000	10,000	
2	ND04119S-SG20	CARRIER TAPE(ND041-19)	1,000	1,000	10,000	
3	ND05121-SG20	CARRIER TAPE(ND051-21)	250	250	1,250	
4	ND05221-SG20	CARRIER TAPE(ND052-21)	250	250	1,250	
5	ND05519-SG20	CARRIER TAPE(ND055-19)	500	500	4,000	
6	ND05619-SG20	CARRIER TAPE(ND056-19)	500	500	4,000	
7	ND05719-SG20	CARRIER TAPE(ND057-19)	500	500	4,000	
8	ND05619-SG20-02	CARRIER TAPE(ND056-19)	500	500	4,000	
9	NW121-41	CARRIER TAPE(NW121-41)	1,000	1,000	5,000	
10	ND05719F-SG20EM	CARRIER TAPE(ND057-19F)	150	150	1,200	

NO	Model No.	規格	Q'TY(PCS)			Remark
			Tray	Inner Box	Out Box	
1	ND05320-DG20	TRAY(ND053-20)	90		1,800	
2	ND05419-DG20	TRAY(ND054-19)	90		1,800	
3	ND05419F-DG20	TRAY(ND054-19F)	70		1,400	
4	ND05519F-SG20	TRAY(ND055-19F)	70		1,400	
5	ND05619F-SG20-02	TRAY(ND056-19F)	70		1,400	
6	ND05719F-SG20	TRAY(ND057-19F)	70		1,400	
7	ND05619F-SG20-01	TRAY(ND056-19F)	70		1,400	
8	ND05619F-SG20	TRAY(ND056-19F)	70		1,400	

NO	Model No.	規格	Q'TY(PCS)			Remark
			Polybag	Inner Box	Out Box	
1	NP051AC(HDMI CABLE)		1		50	

RF SWITCH_SPEC. OF PACKAGING

NO	Model No.	規格	Q'TY(PCS)			Remark
			Emboss Tape	Inner Box	Out Box	
1	NMS-306	CARRIER TAPE(NMS-306)	2,000	2,000	20,000	
2	NMS-202	CARRIER TAPE(NMS-202)	2,000	2,000	20,000	
3	NMS-180	CARRIER TAPE(NMS-180)	2,000	2,000	20,000	
4	NMS-175	CARRIER TAPE(NMS-175)	3,000	3,000	30,000	



Sales Network

저희 남애전자는 전자제품용 부품제조전문업체로서 1977년 창립이래로 세계적 전자업체와의 거래를 통하여 품질과 기술력을 지속적으로 인정받아 왔습니다. 두드러지지 않지만 하나하나가 제품의 성능에 중요한 역할을 하는 부품과 같이, 앞으로도 보이지 않는 자리에서 기술개발에 최선을 다함으로써 고객님의 부가가치 창출에 기여하겠습니다.

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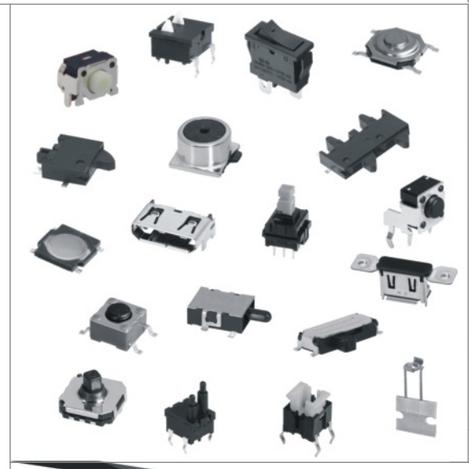

SWITCH
K O R E A

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