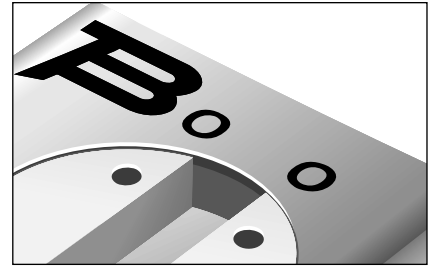


Switches

BOURNS®

I. Product Selection Guide	340
II. Product Specifications	341



Ultra-Miniature and Standard Switches

BOURNS®

Model Number	Function						Mounting Type		Sealed/Open		Size			Packaging Options See Note 1	Actuation		Page No.
	DIP	SIP	Rotary	Tact	Coded	Selector	SMT	Leaded	Sealed	Open	3mm	4mm	6mm		Top	Side	
7643						•	•	•	•				•	E,T	•		341
7644						•	•	•	•			•		E,T	•		343
7743					•		•	•	•				•	E,T	•		345
7744					•		•	•	•			•		E,T	•		347
7813**			•				•		•		•			E	•	•	349
7814			•				•	•	•			•		E	•	•	351
7829			•					•	•				•	T	•	•	353
7906				•				•		•			•	B,A	•	•	354
7914				•			•	•	•			•		E,T	•	•	356
7916				•			•			•			•	E	•		358
SDT				•				•		•			•	B	•	•	359
SDTM				•			•			•			•	T,E	•		363
ST*W				•			•	•	•				•	T,E	•		365
STJN-4				•			•		•	•	4.5mm			E	•		367
STJN-5				•			•		•	•	5mm			E	•		368
SDI	•							•	•	•	3.5 to 26.3mm			T	•		370
SDS	•							•	•	•	6.4 to 31.8mm			T	•		371
SDA	•							•	•	•	6.4 to 31.8mm			T		•	371
SDP	•							•	•	•	6.4 to 31.8mm			T		•	371
SDM	•						•		•	•	3.5 to 26.3mm			T,E	•		373
SPI		•						•	•	•	22.86mm			T	•		374
SDH	•						•		•		11.56mm			E	•		375

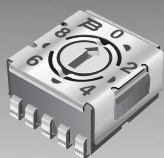
NOTE 1: Standard packaging; some options may require alternate packaging. Consult factory.
T = Tube, B = Bulk, E = Embossed Tape - 7" Reel, A = Ammo Pack

** Patented model.

* H - Leaded

M - SMT - Gull wing

J - SMT - J Lead



BOURNS®

Features

- 10 position selector switch
- Miniature industrial switch
- Vertical adjust
- Rugged surface mount design
- Break-before make timing

Applications

- Test equipment
- Instrumentation
- Computer hardware

7643 SMD 7mm Square Sealed Selector Switch

Electrical Characteristics

Contact Rating
Maximum Current100mA max.
Maximum Voltage24V
Contact Resistance
.....100 milliohms max.
Insulation Resistance
.....1000 megohms
Dielectric Strength.....250 volts

General Characteristics

Operating Temperature Range
.....-55°C to +125°C
Storage Temperature Range
.....-55°C to +125°C
Seal Test.....85°C Fluorinert*

Mechanical Characteristics

Switch Type.....SP9T
Adjustment Detent Torque
.....0.2-2.0 N-cm

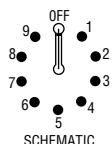
Environmental Characteristics

Shock100G
0.1 ms. max. discontinuity
Vibration30G
0.1 ms. max. discontinuity
Thermal Shock (5 cycles)
.....-55°C to +125°C
Actuation Life1,000 detents no load
Maximum Soldering Heat260°C,
.....5 seconds
Standard Packaging(see packaging specifications)

How to Order

7643 J - 1 - 10 E

Model _____
Terminal _____
Switch Type _____
1 = SP9T
Number of Positions _____
10 = 10 Positions
("0" Position is Off; Common)
Embossed Tape Option (Styles J, G only) _____



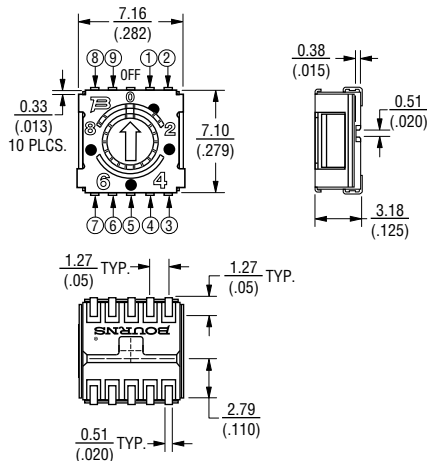
TOLERANCES: ±.2 EXCEPT WHERE NOTED.

DIMENSIONS: $\frac{MM}{(IN)}$

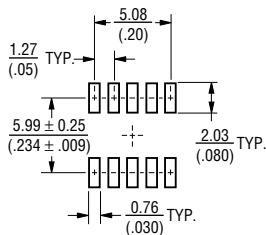
*OFF POSITION IS COMMON.

Product Dimensions

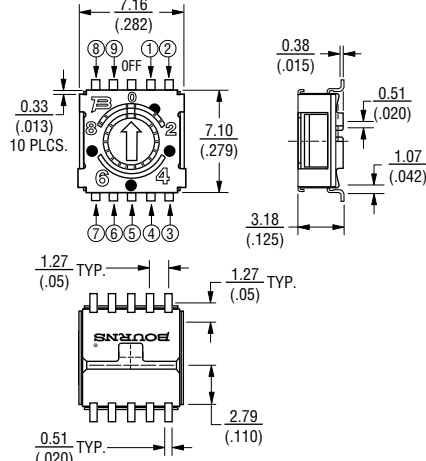
7643J



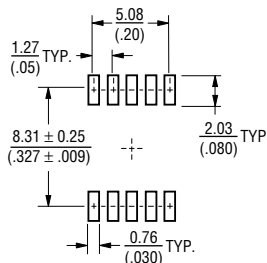
RECOMMENDED PCB LAYOUT



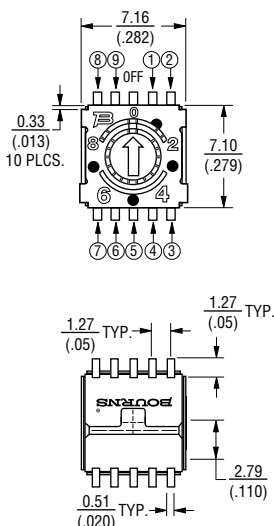
7643G



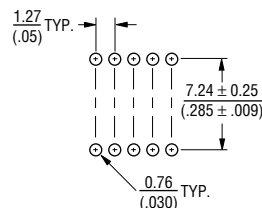
RECOMMENDED PCB LAYOUT



7643H



RECOMMENDED PCB LAYOUT

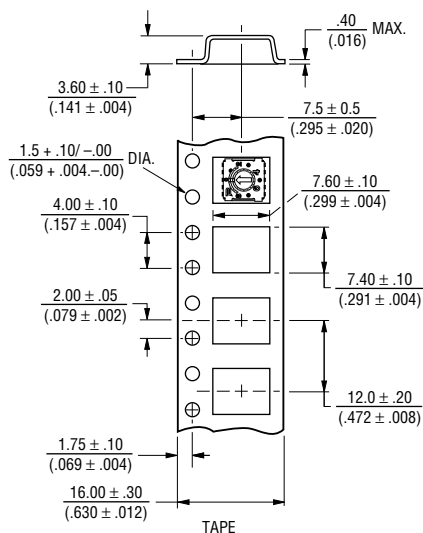


7643 SMD 7mm Square Sealed Selector Switch

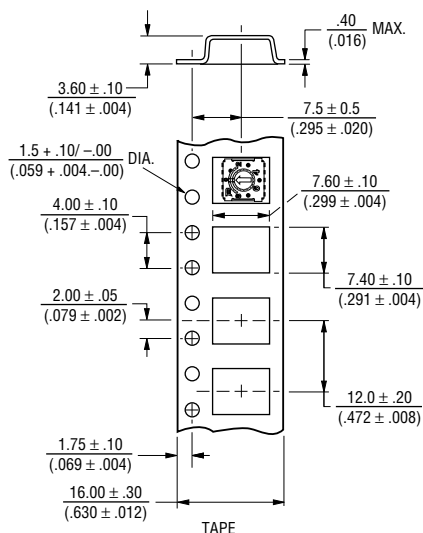
BOURNS®

Packaging Specifications

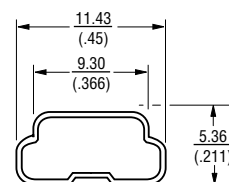
(J Style)



(G Style)

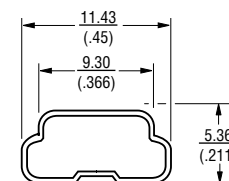


(J Style)

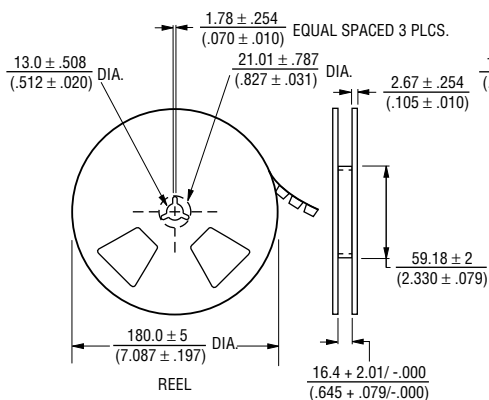


TUBE LENGTH - 358MM.
UNITS PACKAGED 50 PIECES PER TUBE.

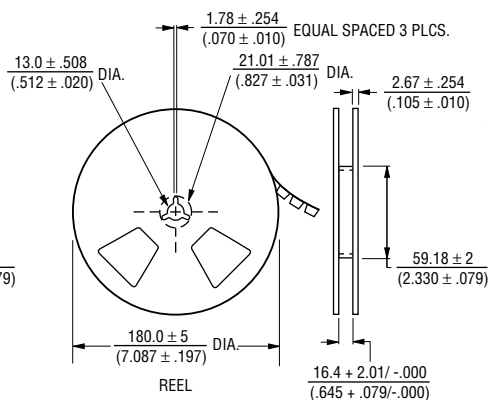
(G Style)



TUBE LENGTH - 358MM.
UNITS PACKAGED 50 PIECES PER TUBE.

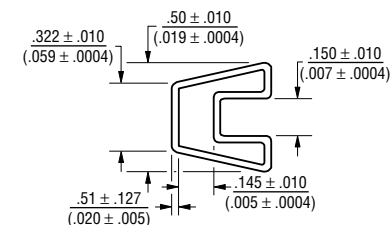


Meets EIA specification 481.



Meets EIA specification 481.

(H Style)



TUBE LENGTH - 14MM.
UNITS PACKAGED 100 PIECES PER TUBE.



BOURNS®

Features

- 5 position selector switch
- Miniature industrial switch multi-position
- Vertical adjust
- Rugged surface mount design
- Break-before make timing

Applications

- Signal/circuit select
- Filter select
- Test equipment
- TV, radio

7644 SMD 4mm Square Sealed Selector Switch

Electrical Characteristics

Contact Rating
Maximum Current100mA max.
Maximum Voltage24V
Contact Resistance
.....100 milliohms max.
Insulation Resistance1000 megohms
Dielectric Strength250 volts

General Characteristics

Operating Temperature Range
.....-55°C to +125°C
Storage Temperature Range
.....-55°C to +125°C
Seal Test.....85°C Fluorinert*

Mechanical Characteristics

Switch Type.....SP4T
Adjustment Detent Torque
..... 0.2-2.0 N-cm

Environmental Characteristics

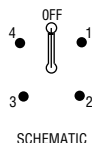
Shock100G
0.1 ms. max. discontinuity
Vibration30G
0.1 ms. max. discontinuity
Thermal Shock (5 cycles)
.....-55°C to +125°C
Actuation Life1,000 steps no load
Maximum Soldering Heat260°C,
5 seconds

Standard Packaging
.....500 pcs./180mm reel

How to Order

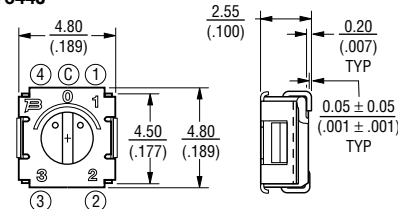
7644 J - 1 - 5 E

Model _____
Terminal _____
Switch Type _____
1 = SP4T
Number of Positions _____
5 = 5 Positions
("0" Position is Off; No Contact)
Embossed Tape Designator _____
(Omit letter for Tube)

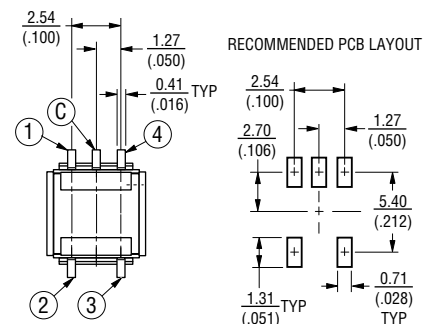
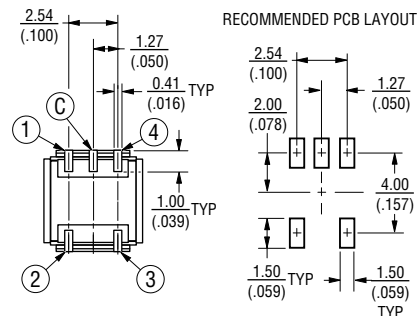
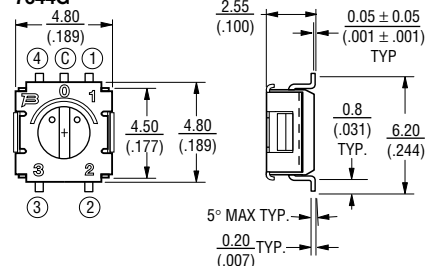


Product Dimensions

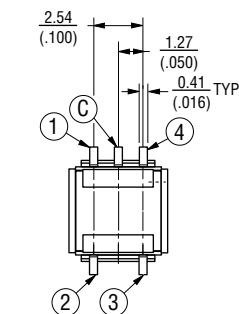
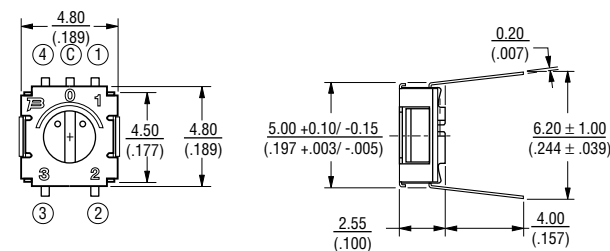
7644J



7644G



7644H



TOLERANCES: ±.38 EXCEPT WHERE NOTED.

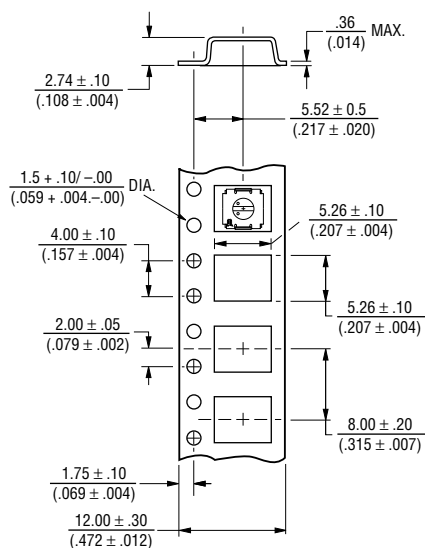
DIMENSIONS: $\frac{MM}{(IN)}$

7644 SMD 4mm Square Sealed Selector Switch

BOURNS®

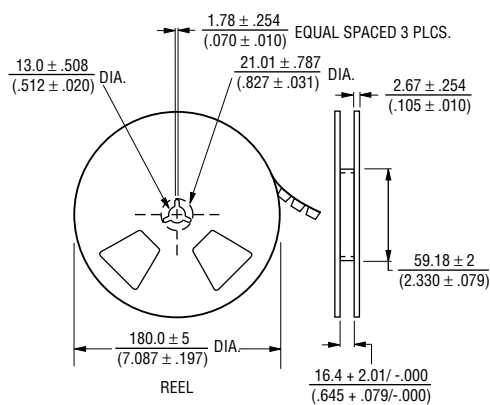
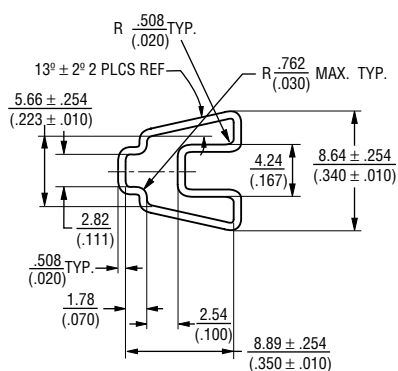
Packaging Specifications

7644 J & G



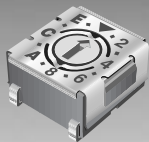
TAPE

7644 H Tube



REEL

Meets EIA 481



BOURNS®

Features

- 8, 10 or 16 position coded switch
- Miniature industrial switch multi-position
- Vertical adjust
- Rugged surface mount design
- Rugged lead frame construction

Applications

- Signal/circuit select
- Board address
- Test equipment

7743 SMD 7mm Square Sealed Coded Switch

Electrical Characteristics

Contact Rating
Maximum Current100mA max.
Maximum Voltage24V
Contact Resistance
.....100 milliohms max.
Insulation Resistance1000 megohms
Dielectric Strength250 volts

General Characteristics

Switch TypeBinary
Operating Temperature Range
.....-55°C to +125°C
Storage Temperature Range
.....-55°C to +125°C
Seal Test85°C Fluorinert*

Mechanical Characteristics

Positions8, 10 or 16
Adjustment Detent Torque
.....0.2-2.0 N-cm

Environmental Characteristics

Shock100G
0.1 ms. max. discontinuity
Vibration30G
0.1 ms. max. discontinuity
Thermal Shock (5 cycles)
.....-55°C to +125°C
Contact Resistance
.....100 milliohms max.
Humidity
Insulation Resistance
.....10 megohms min.
Contact Resistance
.....100 milliohms max.
Actuation Life1,000 steps no load
Contact Resistance
.....100 milliohms max.
Maximum Soldering Heat260°C,
.....5 seconds
Standard Packaging50 pcs./tube

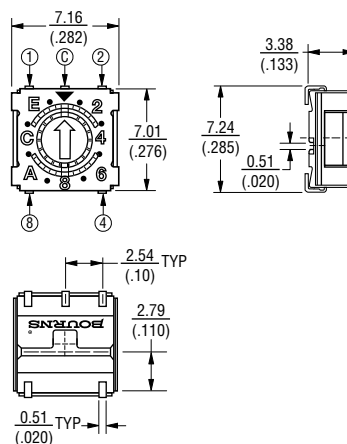
How to Order

7743 J - 1 - 8 E

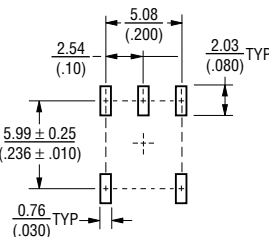
Model _____
Terminal _____
Switch Type _____
1 = Std. (Binary)
Number of Positions _____
8 = 8 Positions
10 = 10 Positions
16 = 16 Positions
Embossed Tape Option _____
(Omit letter for tube)

Product Dimensions

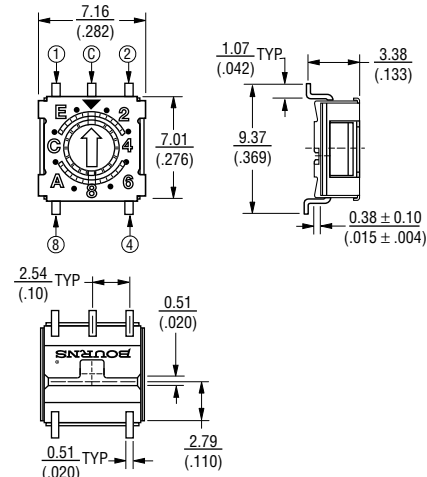
7743J



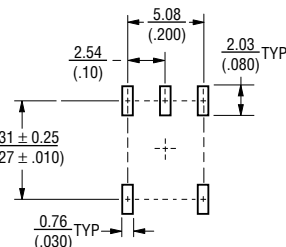
RECOMMENDED PCB LAYOUT



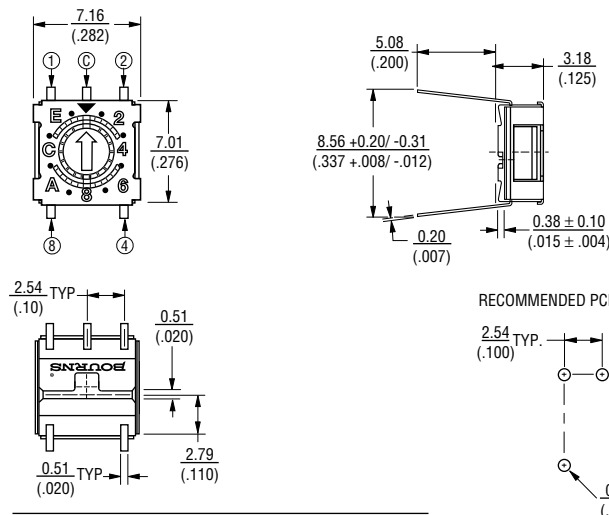
7743G



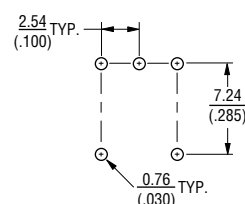
RECOMMENDED PCB LAYOUT



7743H



RECOMMENDED PCB LAYOUT



TOLERANCES: ±2 EXCEPT WHERE NOTED.

DIMENSIONS: $\frac{\text{MM}}{(\text{IN})}$

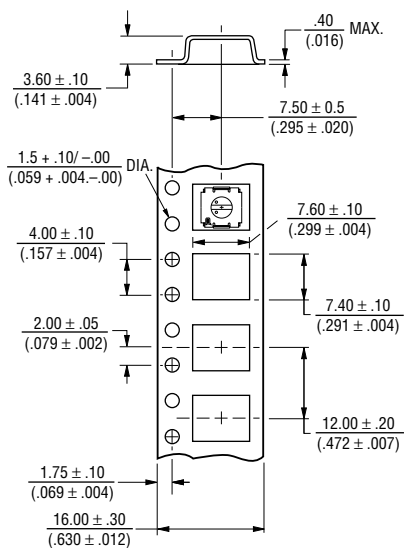
*"OFF" POSITION IS COMMON.

7743 SMD 7mm Square Sealed Coded Switch

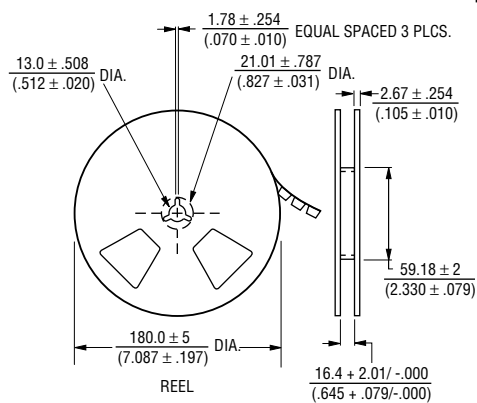
BOURNS®

Packaging Specifications

7743 J&G



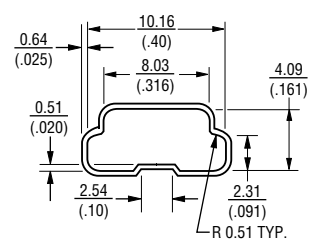
TAPE



REEL

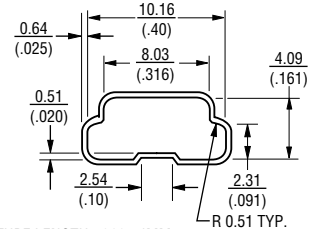
Meets EIA 481

7743 J



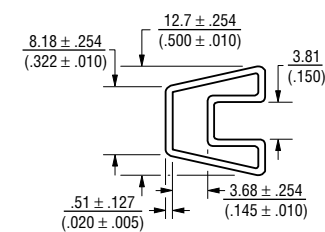
TUBE LENGTH - 383.54MM.
UNITS PACKAGED 50 PIECES PER TUBE.

7743 G



TUBE LENGTH - 383.54MM.
UNITS PACKAGED 50 PIECES PER TUBE.

7743 H



TUBE LENGTH - 523.24MM.
UNITS PACKAGED 100 PIECES PER TUBE.

Binary (REAL) Code

8 POSITIONS

	1	2	4	C	S
0				X	NC
1	X			X	NC
2		X		X	NC
3	X	X		X	NC
4			X	X	NC
5	X		X	X	NC
6		X	X	X	NC
7	X	X	X	X	NC

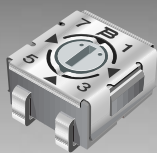
10 POSITIONS

	1	2	4	8	C
0					X
1	X				X
2		X			X
3	X	X			X
4			X		X
5	X		X		X
6		X	X		X
7	X	X	X		X
8				X	X
9	X			X	X

16 POSITIONS

	1	2	4	8	C
0					X
1	X				X
2		X			X
3	X	X			X
4			X		X
5	X		X		X
6		X	X		X
7	X	X	X		X
8				X	X
9	X			X	X
A		X		X	X
B	X	X		X	X
C			X	X	X
D	X		X	X	X
E		X	X	X	X
F	X	X	X	X	X

X = Connection



BOURNS®

Features

- 8 or 10 position coded switch
- Miniature industrial switch multi-position
- Vertical adjust
- Rugged surface mount design
- Rugged lead frame construction

Applications

- Board address
- Instrumentation
- Test equipment

7744 SMD 4mm Square Sealed Coded Switch

Electrical Characteristics

Contact Rating
Maximum Current100mA max.
Maximum Voltage24V
Contact Resistance
.....100 milliohms max.
Insulation Resistance1000 megohms
Dielectric Strength250 volts

General Characteristics

Switch TypeBinary
Operating Temperature Range
.....-55°C to +125°C
Storage Temperature Range
.....-55°C to +125°C
Seal Test85°C Fluorinert*

Mechanical Characteristics

Positions8 or 10
Adjustment Detent Torque
.....0.1-2.5 N-cm

Environmental Characteristics

Shock100G
.....0.1 ms. max. discontinuity
Vibration20G
.....0.1 ms. max. discontinuity
Thermal Shock (5 cycles)
.....-55°C to +125°C
Contact Resistance
.....100 milliohms max.
Humidity
Insulation Resistance
.....10 megohms min.
Contact Resistance
.....100 milliohms max.
Actuation Life
8 Position500 cycles
10 Position200 cycles
Contact Resistance
.....100 milliohms max.
Maximum Soldering Heat245°C,
5 seconds
Standard Packaging
Tube50 pcs.
Tape & Reel500 pcs.

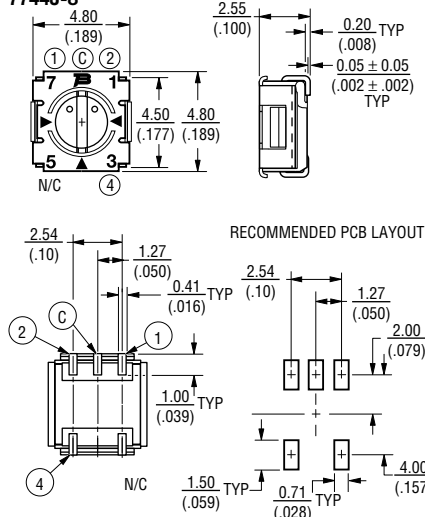
How to Order

7744 J - 1 - 8 E

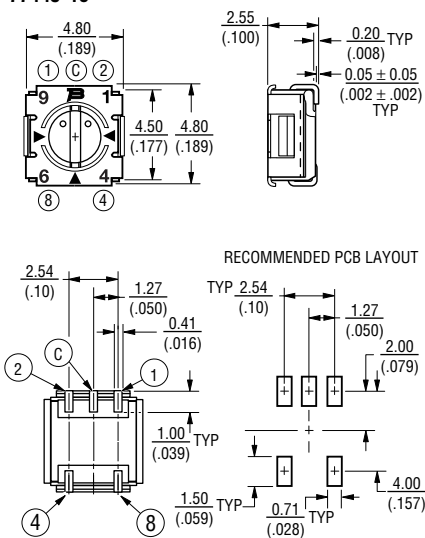
Model _____
Terminal _____
Switch Type _____
1 = Std. (Binary)
Number of Positions _____
8 = 8 Positions
10 = 10 Positions
Embossed Tape Option _____
(Omit letter for tube)

Product Dimensions

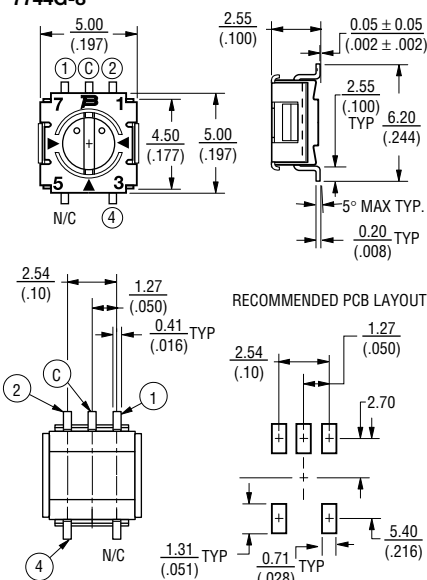
7744J-8



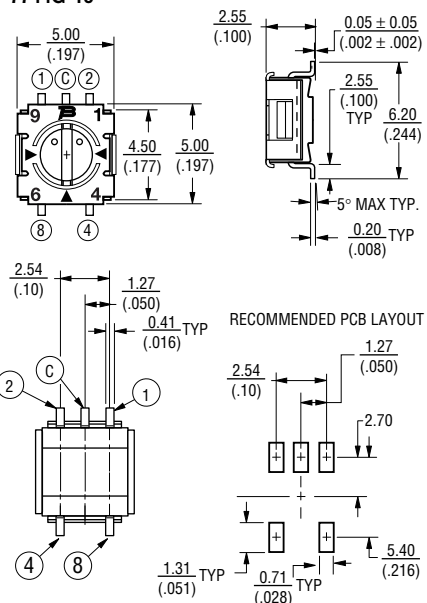
7744J-10



7744G-8



7744G-10



TOLERANCES: ±.2 EXCEPT WHERE NOTED.

DIMENSIONS: MM
(IN)

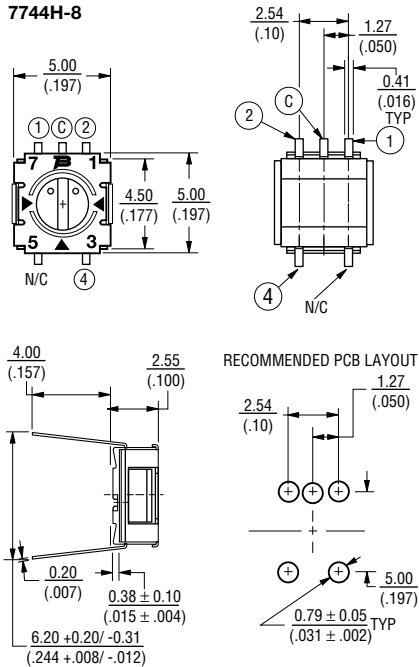
OFF POSITION IS COMMON.

7744 SMD 4mm Square Sealed Coded Switch

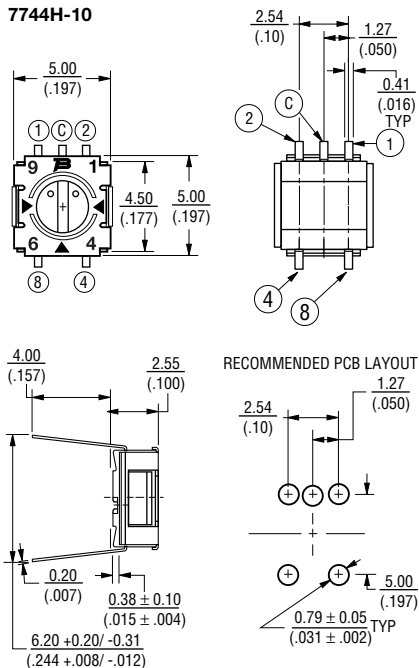
BOURNS®

Product Dimensions

7744H-8

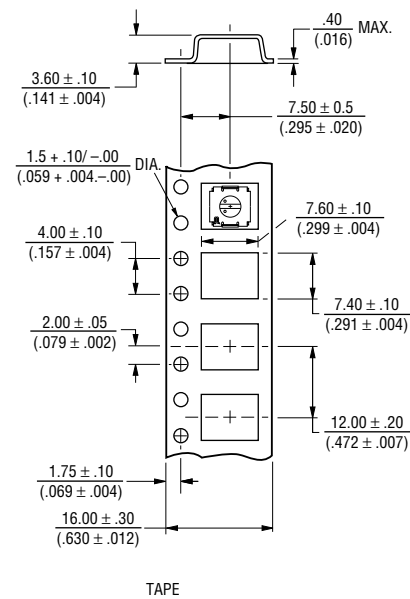


7744H-10



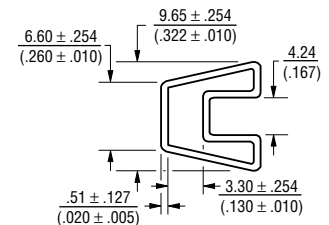
Packaging Specifications

7744J&G



Packaging Specifications

7744H



TUBE LENGTH - 523.24MM.
UNITS PACKAGED 100 PIECES PER TUBE.

Binary (REAL) Code

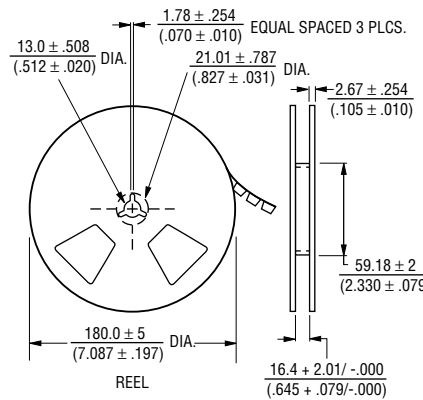
10 POSITIONS

	1	2	4	8	C
0					X
1	X				X
2		X			X
3	X	X			X
4			X		X
5	X		X		X
6		X	X		X
7	X	X	X		X
8				X	X
9	X			X	X

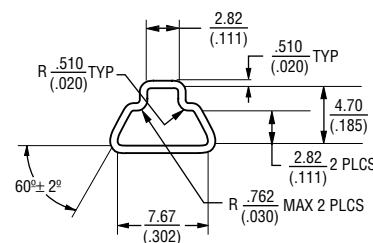
8 POSITIONS

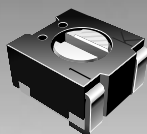
	1	2	4	C
0				X
1	X			X
2		X		X
3	X	X		X
4			X	X
5	X		X	X
6		X	X	X
7	X	X	X	X

X = CONNECTION



Meets EIA 481





BOURNS®

U.S. Patent No. 5043695

Electrical Characteristics

Contact Rating
Maximum Current100mA max.
Maximum Voltage24V
Contact Timing.....Non-shorting
Contact Resistance2 ohms max.
Insulation Resistance
.....100 megohms min. (DC500V)
Dielectric Strength250 VAC

General Characteristics

Switch TypeSPDT
Operating Temperature Range
.....-55°C to +125°C
Storage Temperature Range
.....-55°C to +125°C
Seal Test.....85°C Fluorinert*

Mechanical Characteristics

Mechanical Angle.....245° ± 15°
Positions2
Adjustment Torque......5 N-cm max.
Stop Strength.....1.8 N-cm min.
Switching Angle45° ± 5°

Environmental Characteristics

Shock20G
0.1 ms max. discontinuity
Vibration100G
0.1 ms max. discontinuity
Thermal Shock(5 cycles)
-55°C to +125°C
Humidity
Insulation Resistance
.....10 megohms min.
Rotational Life
-5150 Cycles
-232000 Cycles
Max. Soldering Heat260°C,
5 seconds

How to Order

7813 J - 1 - 51 E

Model _____
Terminal _____
Switch Type _____
1 = SPDT
Rotational Life _____
-51 = 50 Cycles
-23 = 2000 Cycles
Embossed Tape _____
E = 1000 Pcs./180mm Reel (Standard)

Features

- Single pole/double throw
- Compatible with most surface mount manufacturing processes
- 50 or 2000 cycle rotational life
- Tape and reel packaged
- Withstands 260° soldering heat

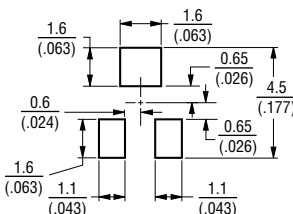
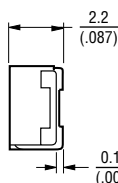
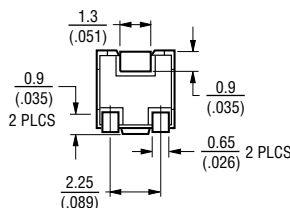
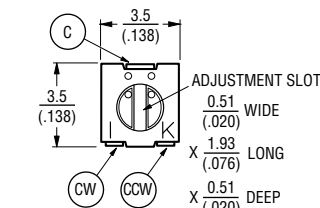
Applications

- Electronic equipment
- Portable electronics
- Security systems
- Control systems

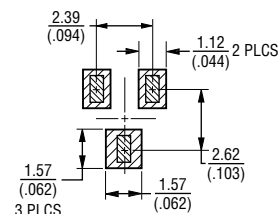
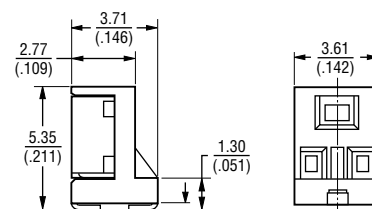
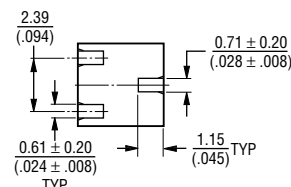
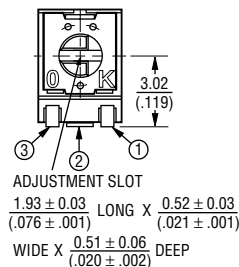
7813 SMD 3mm Square Sealed Rotary Switch

Product Dimensions

7813J



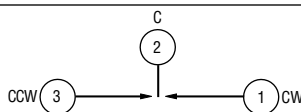
7813S



RECOMMENDED
LAND PATTERN

DIMENSIONS ARE: METRIC
(INCHES)

TOLERANCES: ±.2 EXCEPT WHERE NOTED.

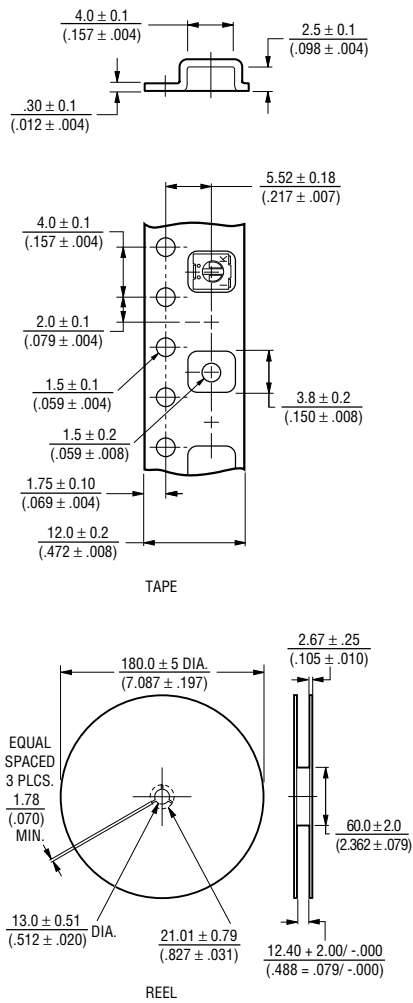


7813 SMD 3mm Square Sealed Rotary Switch

BOURNS®

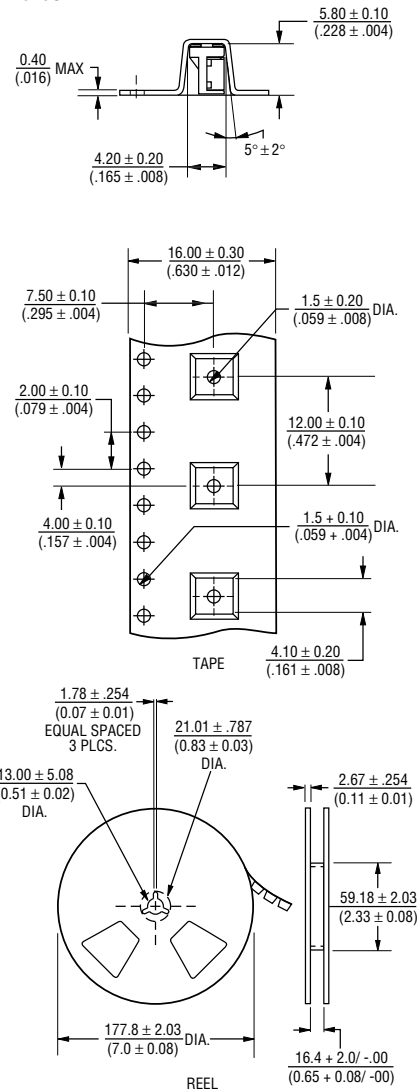
Packaging Specifications

7813J



Meets EIA 481

7813S



Meets EIA 481



BOURNS®

Features

- Single pole/double throw
- Compatible with most surface mount soldering processes
- 50 or 2000 cycle rotational life
- Compatible with popular vacuum pick-and-place equipment

Applications

- Security systems
- Portable instruments
- Electronic equipment

7814 SMD 4mm Square Sealed Rotary Switch

Electrical Characteristics

Contact Rating
Maximum Current100mA max.
Maximum Voltage24V
Contact Timing.....Non-shorting
Contact Resistance.....2 ohms max.
Insulation Resistance
.....100 megohms min. (DC500V)
Dielectric Strength250 VAC

General Characteristics

Switch TypeSPDT
Operating Temperature Range
.....-55°C to +125°C
Storage Temperature Range
.....-55°C to +125°C
Seal Test.....85°C Fluorinert*
Vibration20G TRS
Shock100G TRS

Mechanical Characteristics

Mechanical Angle.....240° ± 15°
Positions2
Adjustment Torque.....1.8 N-cm max.
Stop Strength.....2.5 N-cm min.
Switching Angle45° ± 5°
Pushover Strength (S Style)
.....2 kilograms minimum
Weight.....Approximately 0.2 gm.
MarkingManufacturer's
trademark, life code and date code

Environmental Characteristics

Vibration20G
Shock100G
Thermal Shock(5 cycles)
.....-55°C to +125°C
Humidity
Insulation Resistance
.....10 megohms min.
Rotational Life
-5150 Cycles
-232000 Cycles
Max. Soldering Heat260°C,
10 seconds
Packaging Options
J & G500 pcs./180mm reel
S200 pcs./180mm reel
H50 pcs./tube

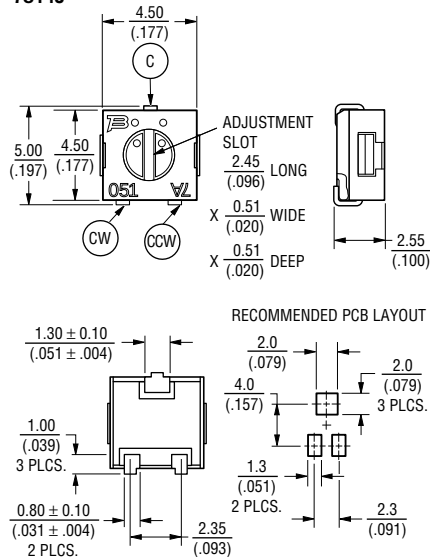
How to Order

7814 J - 1 - 51 E

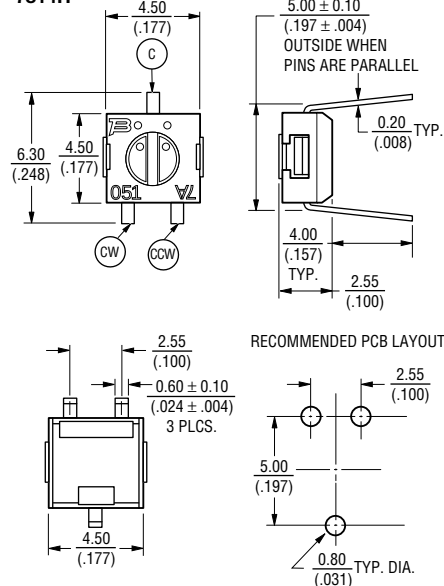
Model _____
Terminal _____
Switch Type _____
1 = SPDT
Rotational Life _____
-51 = 50 Cycles
-23 = 2000 Cycles
Optional Embossed Tape Designator _____
(For pin styles J, G, S only -
omit for tube packaging)

Product Dimensions

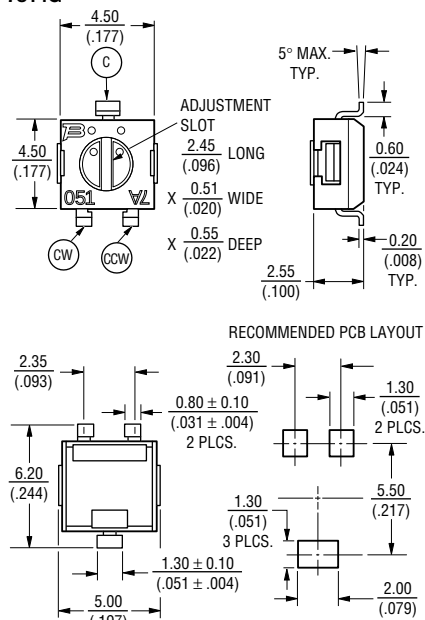
7814J



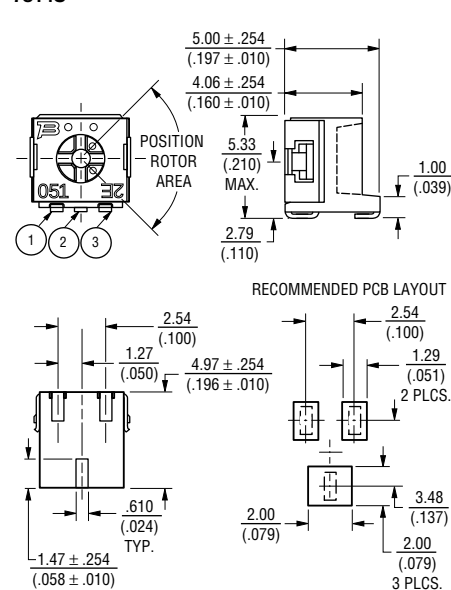
7814H



7814G

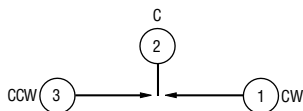


7814S



DIMENSIONS ARE: METRIC
(INCHES)

TOLERANCES: ±.2 EXCEPT WHERE NOTED.



Additional Features

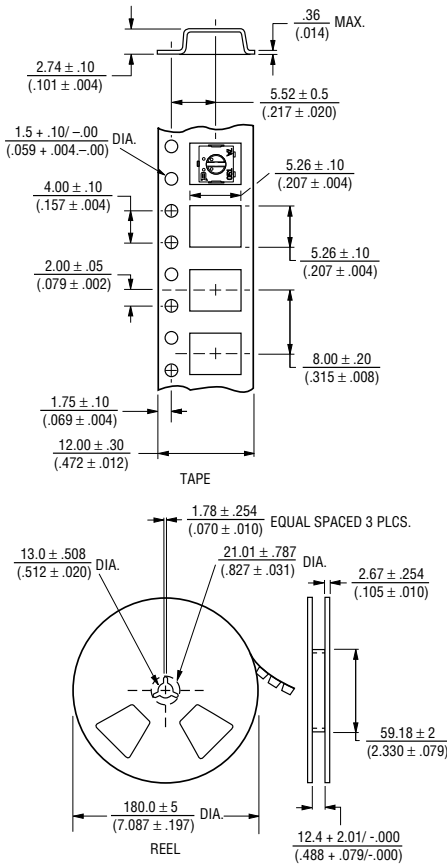
- J-hook, gull-wing and through hole
- Meets EIA/EIAJ/IPC/VRCI SMD standard outline dimensions

7814 SMD 4mm Square Sealed Rotary Switch

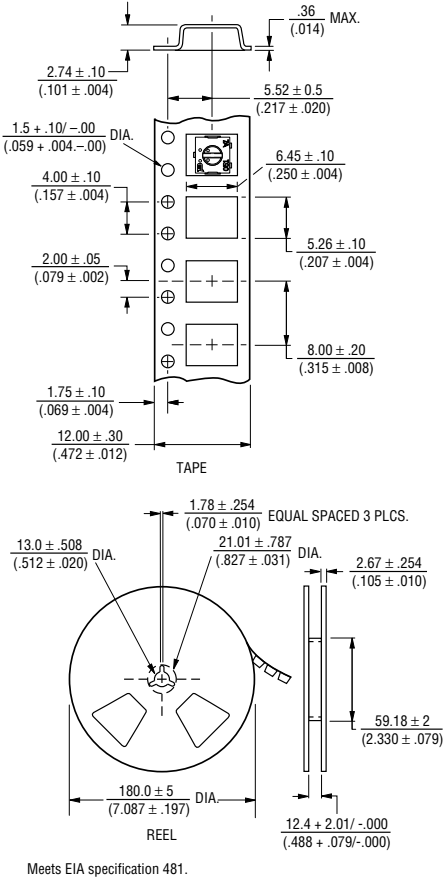
BOURNS®

Packaging Specifications

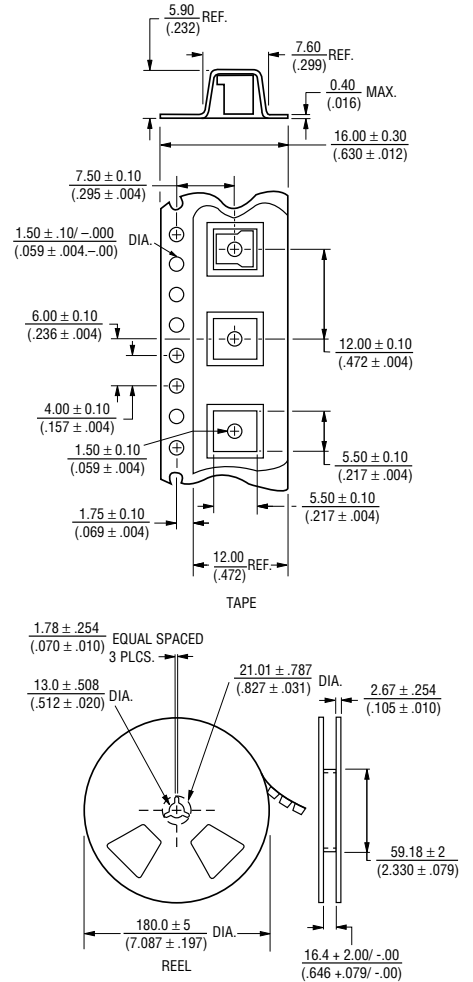
(J Style)



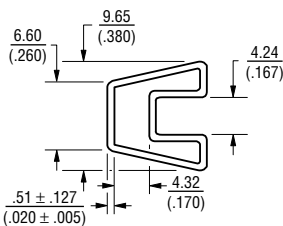
(G Style)



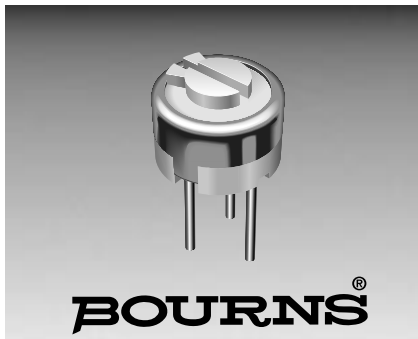
(S Style)



(H Style)



TUBE LENGTH - 523.24MM.
UNITS PACKAGED 100 PIECES PER TUBE.



Features

- Single pole/double throw
- Vertical adjust
- Rugged construction
- Board washable
- Wave solderable

Applications

- Remote controls
- Security systems
- Medical equipment
- Test equipment

7829 6mm Through-hole Sealed Rotary Switch

Electrical Characteristics

Contact Rating
 Maximum Current100mA max.
 Maximum Voltage24V
 Contact Timing.....Non-shorting
 Contact Resistance2 ohms max.

General Characteristics

Switch TypeSPDT
 Operating Temperature Range
-55°C to +125°C
 Storage Temperature Range
-55°C to +125°C
 Thermal Shock5 cycles
-55°C to +125°C
 Seal Test85°C Fluorinert*
 HumidityIR 10 megohms min.

Mechanical Characteristics

Stop Strength3.5 N.cm
 Mechanical Angle.....245° ± 15°
 Positions2
 Switching Angle45° ± 5°

Environmental Characteristics

Vibration30G
 Shock100G
 Thermal Shock(5 cycles)
-55°C to +125°C
 Humidity
 Insulation Resistance
10 megohms min.
 Rotational Life
 -5150 Cycles
 -232000 Cycles
 Standard Packaging50 pcs/tube

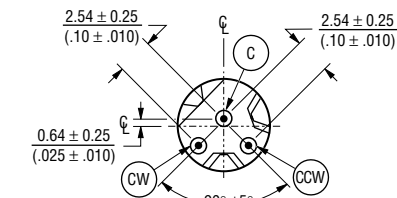
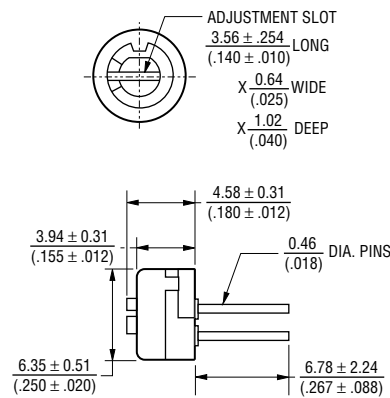
How to Order

7829 H - 1 - 51

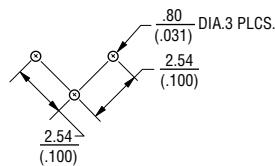
Model _____
 Terminal _____
 Switch Type _____
 1 = SPDT
 Rotational Life _____
 -51 = 50 Cycles
 -23 = 2000 Cycles

Product Dimensions

7829H

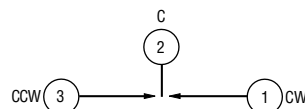


RECOMMENDED PCB LAYOUT

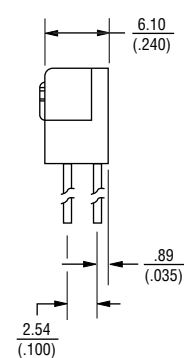
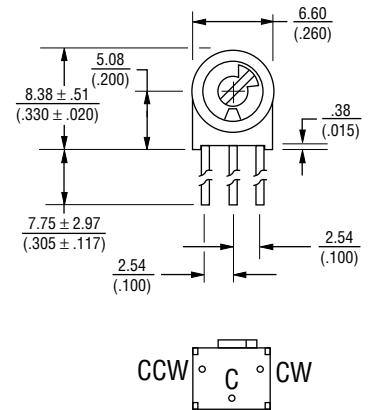


DIMENSIONS ARE: METRIC
 (INCHES)

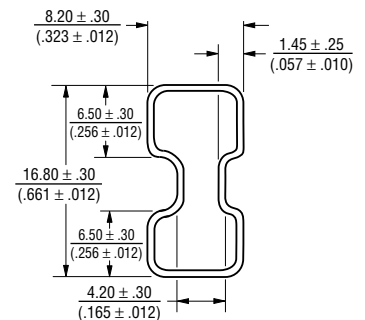
TOLERANCES: ±.2 EXCEPT WHERE NOTED.



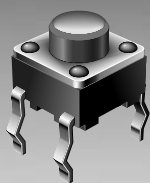
7829S



Packaging Specifications



TUBE LENGTH - 356 ± 1.50 MM.
 UNITS PACKAGED 50 PIECES PER TUBE.



BOURNS®

Features

- Single pole/single throw
- Bulk or ammo pack packaging
- Vertical or horizontal actuation
- With or without ground terminal
- Wave solderable

Applications

- Recorders
- Camcorders
- Smoke alarms
- Electronic toys

7906 6mm Square Key Switch

Electrical Characteristics

Contact Rating
Maximum Current20mA
Maximum Voltage15 VDC
Contact Resistance
.....100 milliohms max.
Insulation Resistance
.....50 megohms min. (100 VDC)
Dielectric Strength250 VAC
Contact Bounce3ms max. (on)
.....10ms max. (off)

General Characteristics

Switch Type(N.O.) SPST
Operating Temperature Range
.....-20°C to +70°C
Storage Temperature Range
.....-40°C to +85°C

Mechanical Characteristics

Operating Force.....160gf ±40gf
Push Stroke0.25mm ±0.1
Operating Life100,000 Actuations
Max. Soldering Heat260°C,
5 seconds

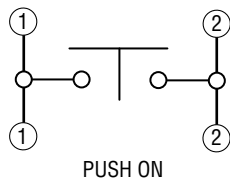
How to Order

7906 H - 1 - A

Model _____
Terminal _____
Switch Type _____
001 = Standard
002 = Ground Terminal
Optional Tape & Ammo Pack Packaging
Std. Packaging.....500 pcs./Bag
Tape1000 pcs./Ammo Pack
Note: Ammo pack modifies pin pattern

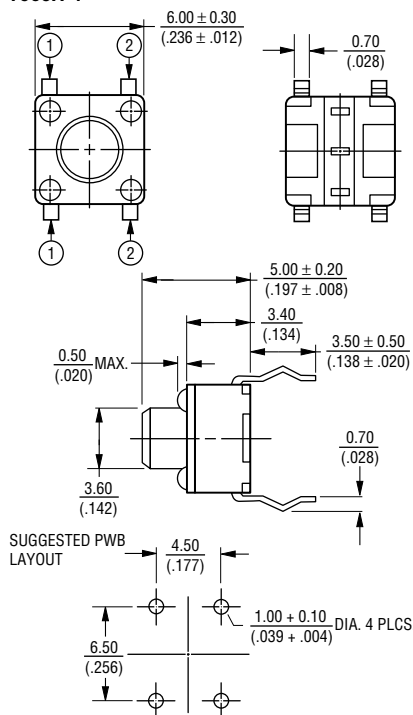
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(INCHES)

TOLERANCES: ±.2 EXCEPT WHERE NOTED.

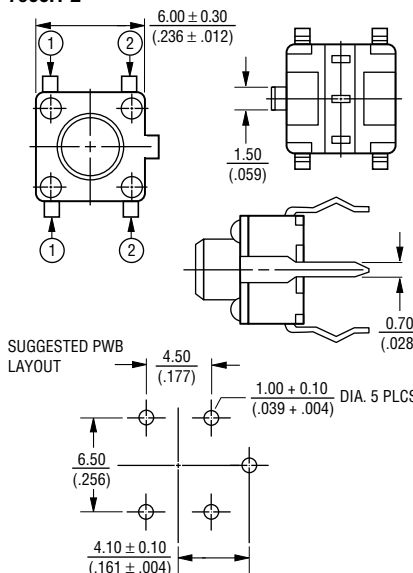


Product Dimensions

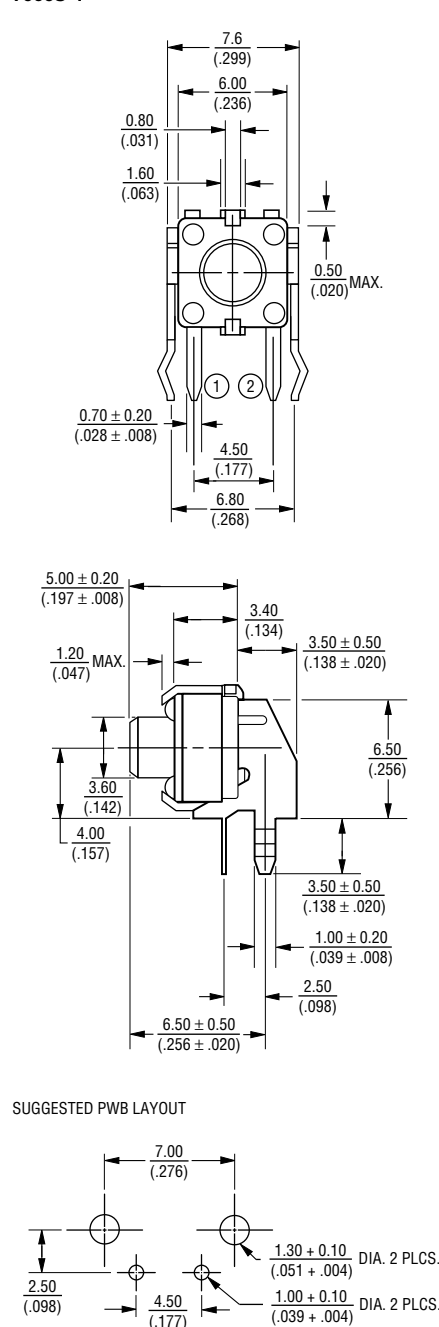
7906H-1



7906H-2



7906S-1

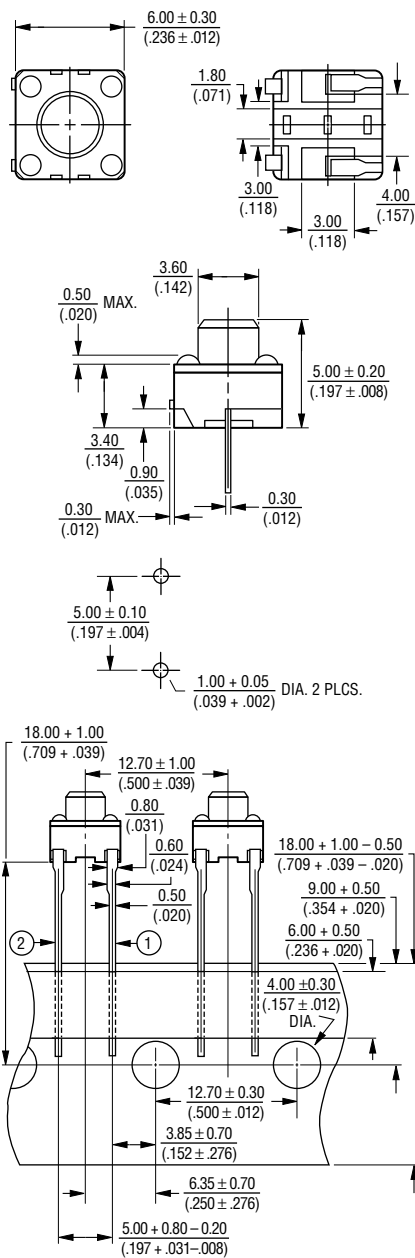


7906 6mm Square Key Switch

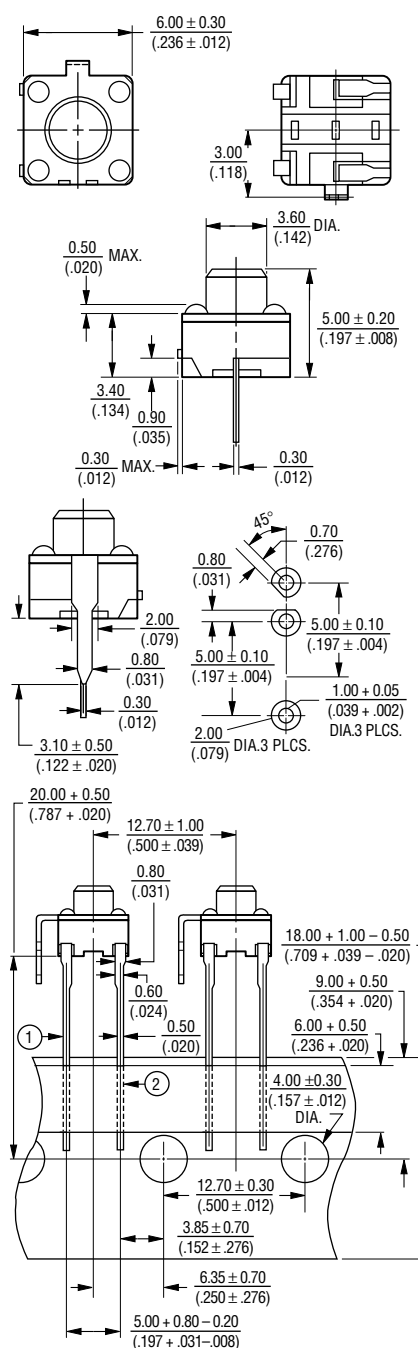
BOURNS®

Packaging Specifications

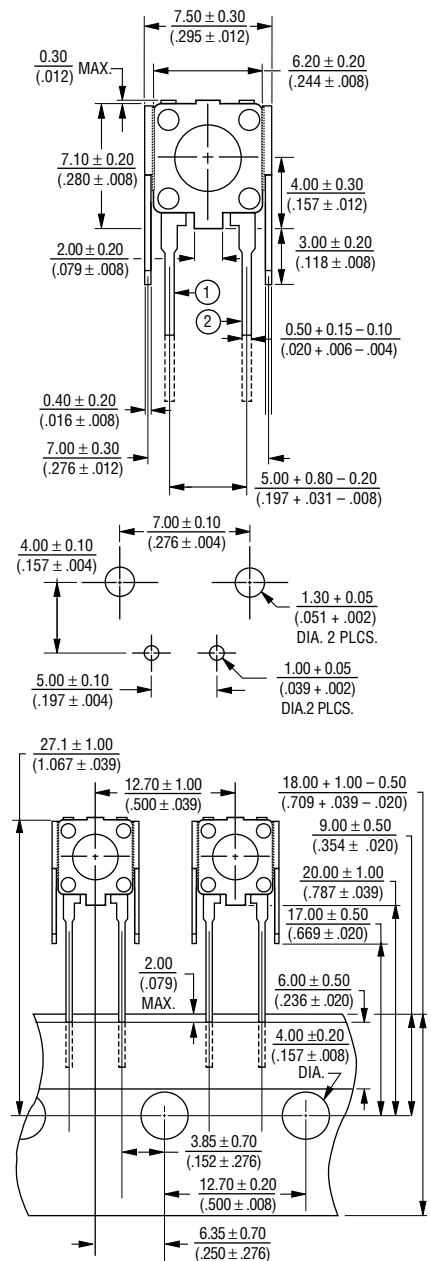
7906H-1

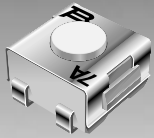


7906H-2



7906S-1





BOURNS®

Features

- Compatible with most surface mount soldering processes
- Compatible with popular vacuum pick-and-place equipment
- J-hook, gull-wing & pinned configurations
- Sealed for board washing

Applications

- Camcorders
- Remote controls
- Security systems
- Electronic games

7914 4mm SMD & Through-hole Sealed Key Switch

Electrical Characteristics

Contact Rating
Maximum Current100mA max.
Maximum Voltage24V
Contact Resistance
.....100 milliohms max.
Insulation Resistance
.....100 megohms min. (DC500V)
Dielectric Strength250 VAC

General Characteristics

Switch TypeNormally open
Operating Temperature Range
.....-55°C to +125°C
Storage Temperature Range
.....-55°C to +125°C
Seal Test85°C Fluorinert*
Vibration20G
Shock100G

Mechanical Characteristics

Pushover Strength (S Style)
.....2 kilograms minimum
Cycle life, loaded100,000 actuations
Contact resistance
.....100 milliohms max.
MarkingManufacturer's code and date code

Packaging Options

J, G & Z100 pcs./tube
H100 pcs./tube

How to Order

7914 G - 2 - 000 E

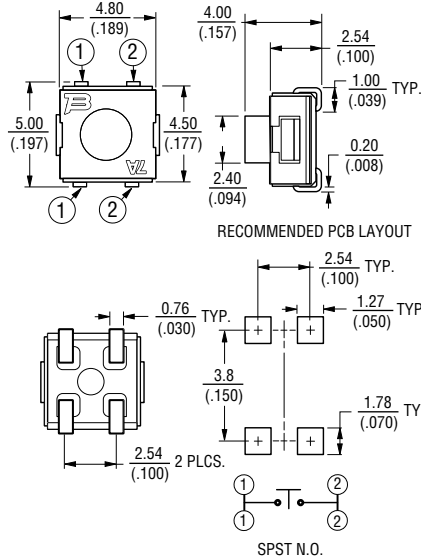
Model _____
Terminal _____
Switch Type _____
001 = N.O. Optional Contacts Au
002 = Std. N.O. Contacts Ag
Product Code for Pin Styles J, G and H
000 = 4.0mm Height FMS
024 = 2.4mm Height (Flush Actuator) FMS
032 = 3.2mm Height FMS
Embossed Tape
(Option Applicable to Styles J, G and Z only -
Consult Factory. Omit for Tube packaging.)

DIMENSIONS ARE: METRIC
(INCHES)

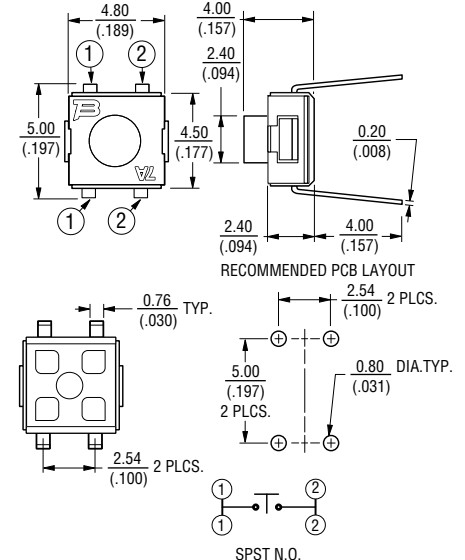
TOLERANCES: ±.2 EXCEPT WHERE NOTED.

Product Dimensions

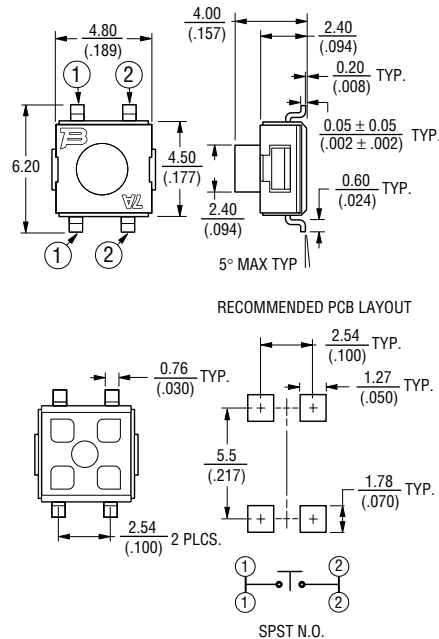
7914J



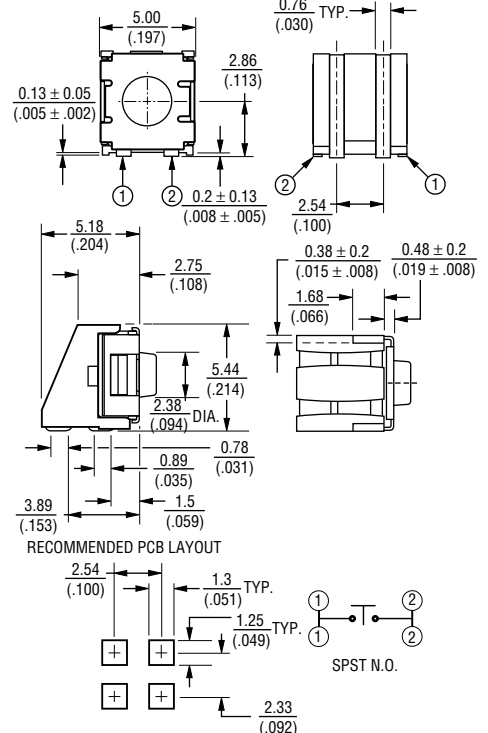
7914H



7914G



7914Z



Additional Features

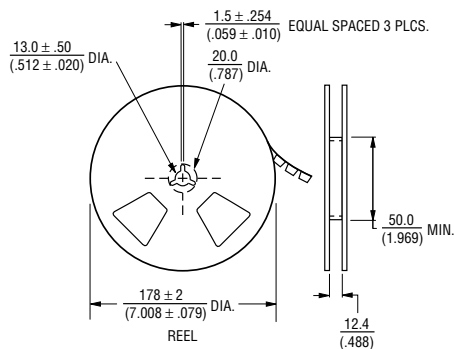
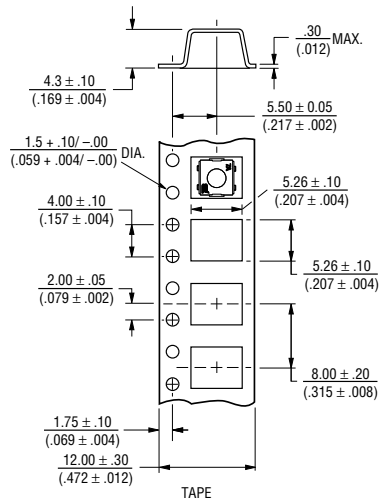
- Meets EIA/EIAJ/IPC/VRCI SMD standard outline dimensions
- Top or side actuated

7914 4mm SMD & Through-hole Sealed Key Switch

BOURNS®

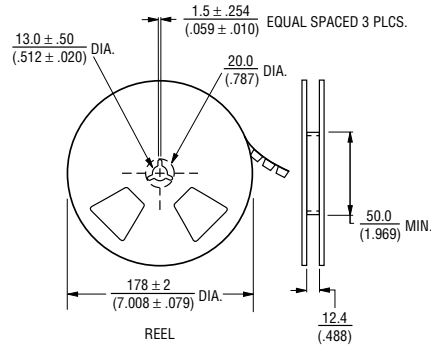
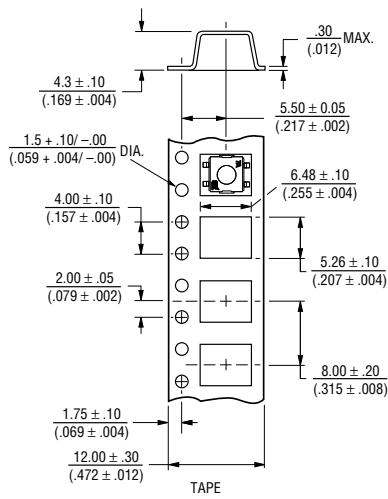
Packaging Specifications

7914J



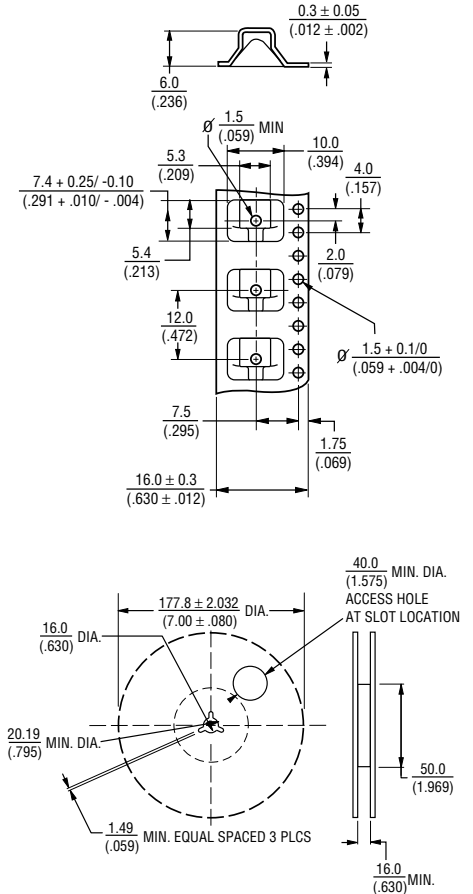
Meets EIA specification 481.

7914G



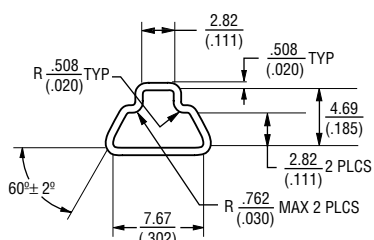
Meets EIA specification 481.

7914Z

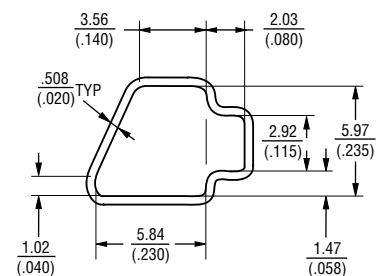
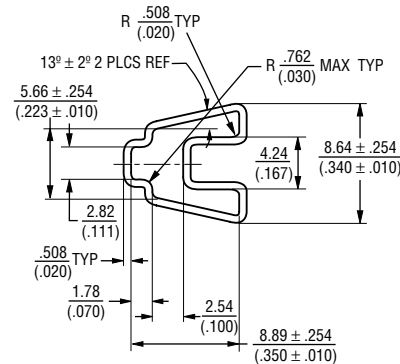


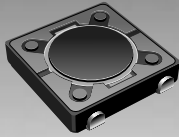
7914Z

7914J/G



7914H





BOURNS®

Features

- Single pole/single throw
- Compatible with surface mount reflow processes
- Tape and reel packaged
- 1mm profile height available
- Low level signal switch

Applications

- Electronic toys
- Personal alerts
- Remote locks
- Panel meters

7916 SMD 6mm Square Key Switch

Electrical Characteristics

Contact Rating	Maximum.....20mA 15 VDC
	Minimum.....10 μ A 2 VDC
Contact Resistance	100 milliohms max.
Insulation Resistance	50 megohms min. (DC100V)
Dielectric Strength	250 VAC
Contact Bounce	3ms max. (on)
	10ms max. (off)

General Characteristics

Switch Type	(N.O.) SPST
Operating Temperature Range	-20°C to +70°C
Storage Temperature Range	-40°C to +85°C

Mechanical Characteristics

Push Stroke	0.25mm $\pm$ 0.1
Actuation Force	160 $\pm$ 50 gf
Operating Life	100,000 Actuations

How to Order

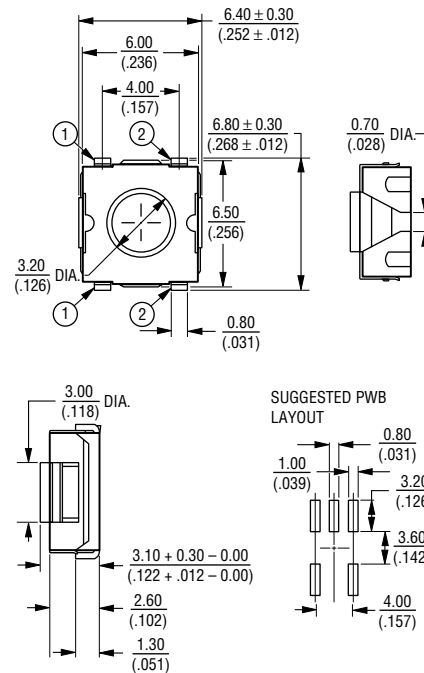
	7916 X - 1 - E
Model	_____
Terminal	_____
Switch Type	_____
1 = Std. (N.O.)	
Embossed Tape Designator	_____
E = 370mm Reel (Standard)	
7916X-1 = 2000 pcs./Reel	

DIMENSIONS ARE: METRIC
(INCHES)

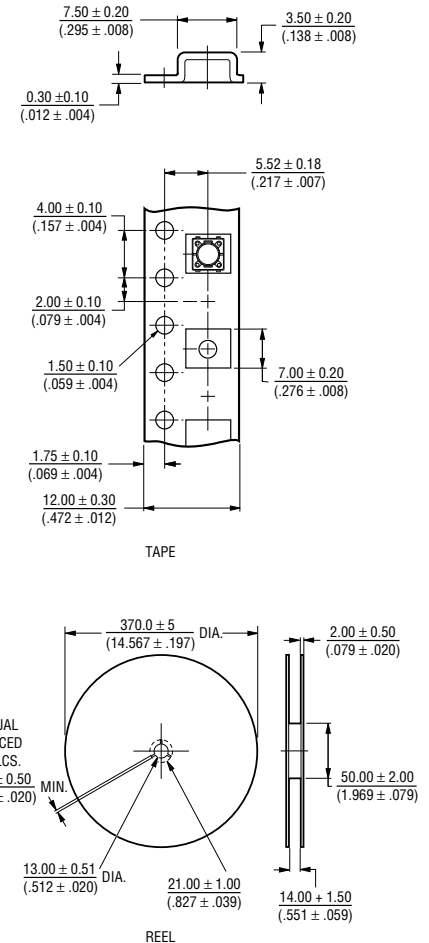
TOLERANCES: $\pm$.2 EXCEPT WHERE NOTED.

Product Dimensions

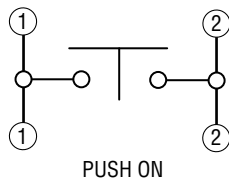
7916X-1 (WITH GROUND LUG)



Packaging Specifications



Meets EIA specification 481.





Features

- Available sharp click feel with a positive tactile feedback
- Ultra-miniature and lightweight structure suitable for high density mounting
- Economical with high reliability

Applications

- Electronic toys
- Radios
- Stereos
- Remote controls

SDT Series Tact Switch

Electrical Characteristics

Electrical Life

O. Force R100,000 cycles min.
 O. Force K+N500,000 cycles min.
 RatingDC 12V 50 mA
 Contact Resistance100 milliohms max.
 Insulation Resistance
100 megohms, DC 500V min.
 Dielectric Strength250V AC for 1 minute
 Contact Arrangement1 pole 1 position

Environmental Characteristics

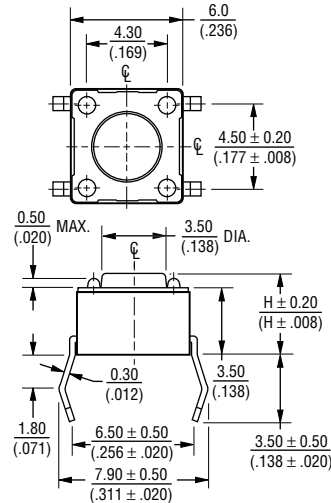
Mechanical Lifetime100,000 cycles min.
 Operation Force260g $\pm$ 50g,
 160g $\pm$ 50g, 100g $\pm$ 50g
 Stop Strength.....Place the switch such
 that vertical, a static load of 3kg shall
 be applied in the direction of actuator
 operation for a period of 15 sec.
 Stroke
 6mm type0.25 $\pm$ 0.2/- 0.1mm
 12mm type0.35 $\pm$ 0.1mm
 Temperature Range-20°C to +70°C
 Vibration Test.....Mil-STD-202F,
 Method 201A
 Frequency10-55-10 Hz/1 minute
 DirectionsX,Y,Z, three mutually
 perpendicular directions
 Time2 hours each direction.
 High reliability
 Shock TestMIL-STD-202F,
 Method 213B, Condition A
 Gravity50G (peak value), 11 msec
 Direction & Times.....6 sides and
 3 times in each direction.
 High reliability

Physical Characteristics

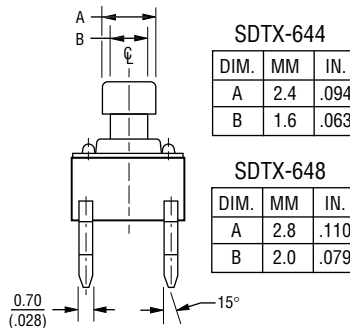
Cover Materials
Steel tin plated, 100 μ min.
 Base MaterialsUL94V-0 PBT plus glass
 fiber reinforced
 Cover/Base Color.....Black
 Actuator MaterialsDulacron POM
 plus glass fiber reinforced
 Actuator ColorBlack, brown, red
 Contact Disc MaterialsPhosphor bronze
 with silver cladding
 Terminal Materials
Brass with silver cladding
 Wave Soldering Process
Recommended solder temperature
 at 260°C (500°F) max., 5 seconds
 Hand Soldering Process
Use a soldering iron of 30 watts
 or less, controlled at 320°C (608°F)
 for approximately 2 seconds while
 applying solder
 Packaging1,000 pieces per bag

Product Dimensions

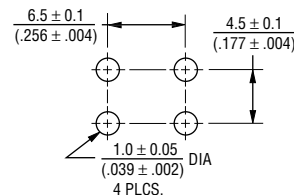
SDTX-610/620/630/650/660



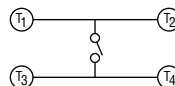
SDTX-644/648



RECOMMENDED PCB LAYOUT

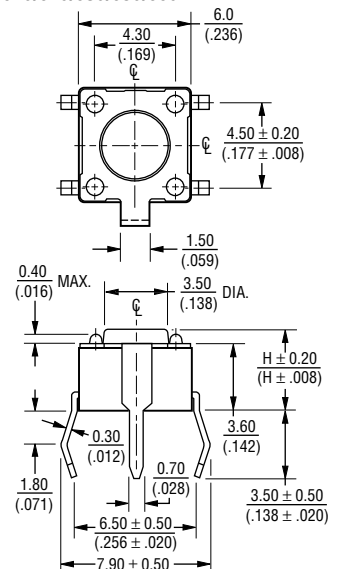


CIRCUIT DIAGRAM

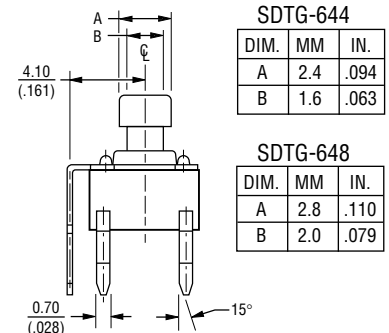


DIMENSIONS: MM
(IN)

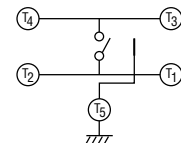
SDTG-610/620/630/650/660



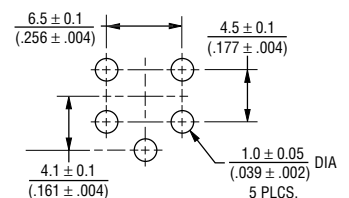
SDTG-644/648



CIRCUIT DIAGRAM



RECOMMENDED PCB LAYOUT



Additional Features

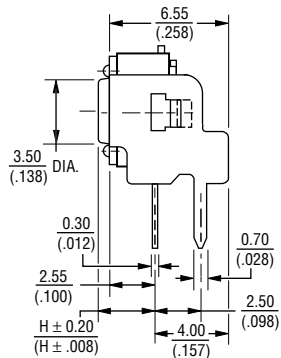
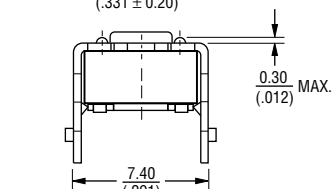
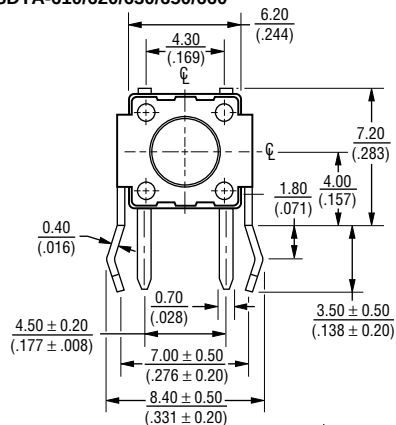
- Insert molding in the contact with special treatment prevents flux buildup during soldering and permits autodipping

SDT Series Tact Switch

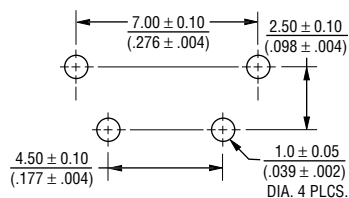
BOURNS®

Product Dimensions

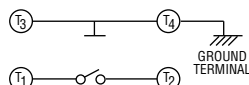
SDTA-610/620/630/650/660



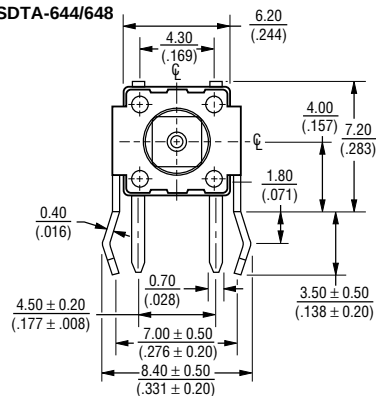
RECOMMENDED PCB LAYOUT



CIRCUIT DIAGRAM



SDTA-644/648

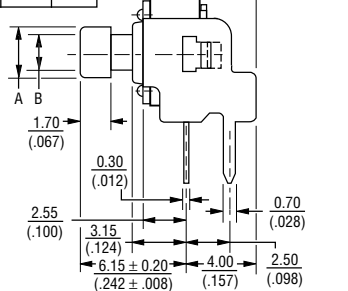


SDTA-644

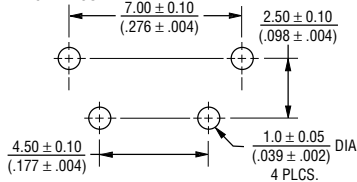
DIM.	MM	IN.
A	2.4	.094
B	1.6	.063

SDTA-648

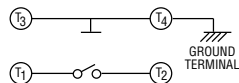
DIM.	MM	IN.
A	2.8	.110
B	2.0	.079



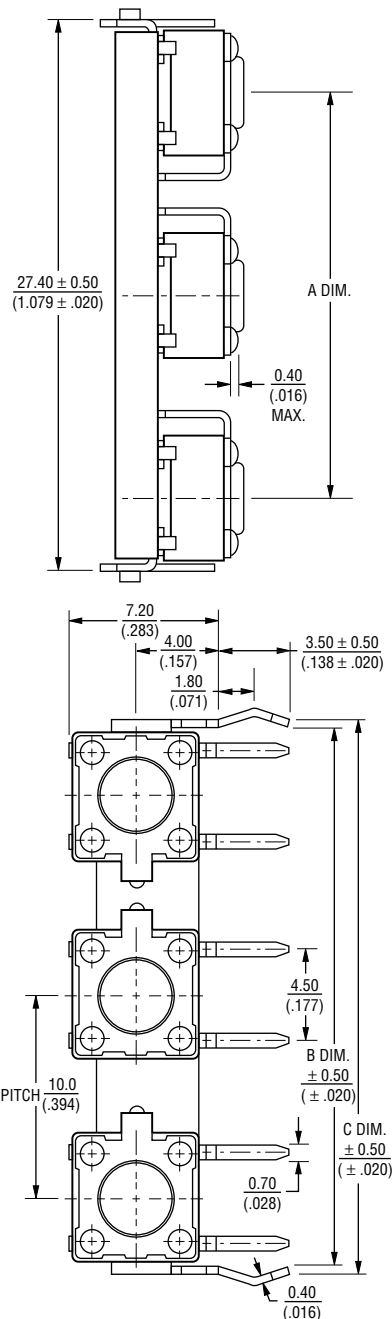
RECOMMENDED PCB LAYOUT



CIRCUIT DIAGRAM



SDTU Series

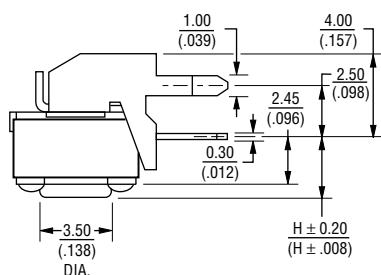


SDT Series Tact Switch

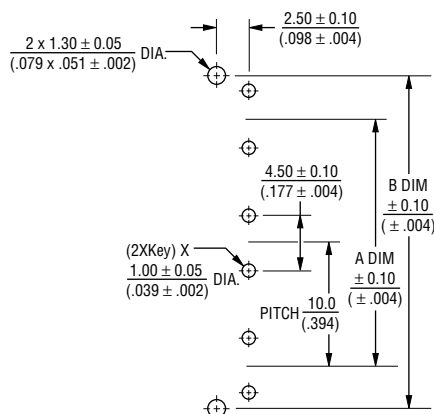
BOURNS®

Product Dimensions

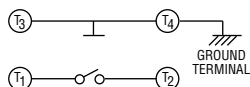
SDTU Series (Continued)



RECOMMENDED PCB LAYOUT

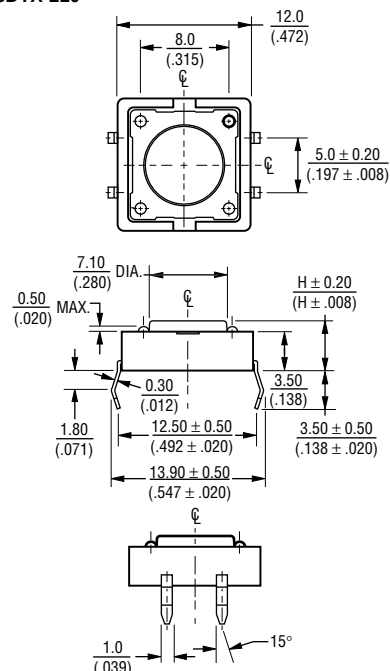


CIRCUIT DIAGRAM

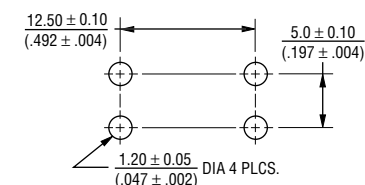


DIM.	3 KEYS (-11)	4 KEYS (-12)	6 KEYS (-13)
A	$\frac{20}{(.787)}$	$\frac{30}{(1.181)}$	$\frac{50}{(1.969)}$
B	$\frac{27}{(1.063)}$	$\frac{37}{(1.457)}$	$\frac{57}{(2.244)}$
C	$\frac{28.4}{(1.118)}$	$\frac{38.4}{(1.512)}$	$\frac{58.4}{(2.299)}$

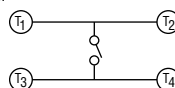
SDTX-210



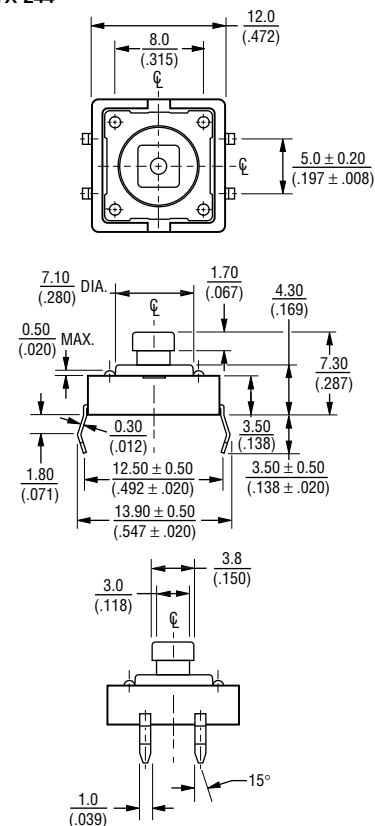
RECOMMENDED PCB LAYOUT



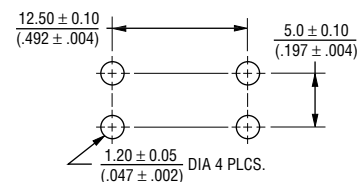
CIRCUIT DIAGRAM



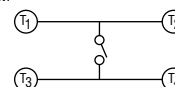
SDTX-244



RECOMMENDED PCB LAYOUT



CIRCUIT DIAGRAM

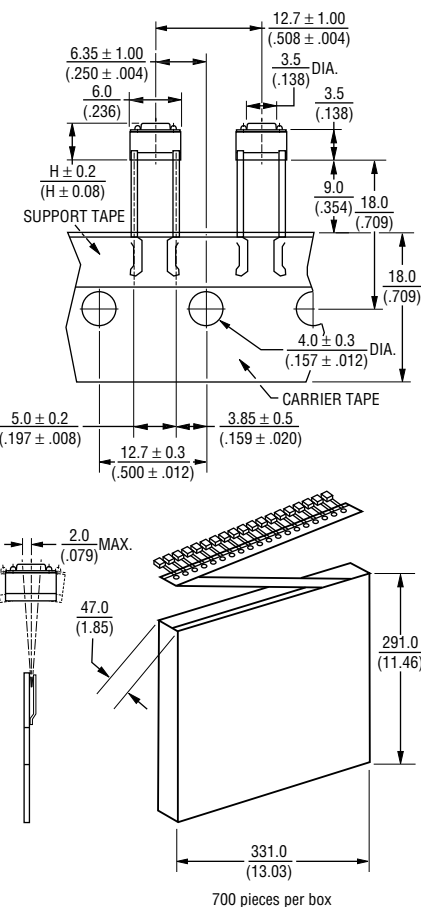


SDT Series Tact Switch **BOURNS®**

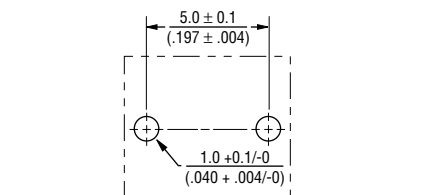
SDT Series Tact Switch **BOURNS®**

Packaging Specifications

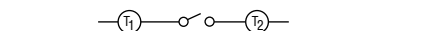
SDTX-610/620/630/644/648/650 Ammo Pack



RECOMMENDED PCB LAYOUT



CIRCUIT DIAGRAM



How to Order

SDT G - 6 10 - K 2 1

Model _____

Product Series _____

- X = Standard
- G = Ground Terminal
- A = Right Angle Type
- U = Multiple Type

Body Size _____

- 6 = 6mm
- 2 = 12mm *

Distance From First Pin
to Top of Head _____
(Right Angle Type)

- 10 = 3.15mm
- 20 = 3.85mm
- 30 = 5.85mm
- 44 = 6.15mm (square head)
- 48 = 6.15mm (square head)
- 50 = 8.35mm
- 60 = 11.85mm

Height (Standard Type)

- 10 = 4.3mm
- 20 = 5.0mm
- 30 = 7.0mm
- 44 = 7.3mm (square head)
- 48 = 7.3mm (square head)
- 50 = 9.5mm
- 50 = 9.5mm
- 60 = 13mm

Actuating Force _____

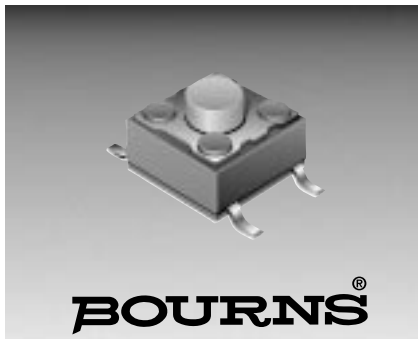
- K = 100g (black head - 6mm only)
- N = 160g (brown head)
- R = 260g (red head)

**Pitch (U Type Only) _____

- 1 = 3mm
- 2 = 15mm
- 3 = 18mm

*"X" pin style only: options 10 and 44 are available for Height.

****For X type only, substitute "AP" for Ammo Pack in place of last two digits of part number.**



Features

- Available sharp click feel with a positive tactile feedback
- Ultra-miniature and lightweight structure suitable for high density mounting
- Very economical with high reliability

Applications

- Musical equipment
- Electronic equipment
- Test equipment

SDTM Series SMD Tact Switch

Electrical Characteristics

Electrical Life

.....100,000 cycles min. for 260g
500,000 cycles min. for 70g,
100g, 160g

RatingDC 12V, 50mA

Contact Resistance100 mohms max.

Insulation Resistance ..100Mohms min.,
DC 500V min.

Dielectric Strength

.....AC 250V for 1 minute

Contact Arrangement...1 pole 1 position

Environmental Characteristics

Mechanical Life100,000 cycles min.

Operation Force..70g, 100g, 160g, 260g

Tolerance.....±50g (±20g for 70g)

Stop Strength..Place the switch vertical,
a static load of 3kg shall be

applied in the direction of actuator
operation for a period of 15 seconds

Stroke.....0.25mm (+0.2mm, -0.1mm)

Temperature Range.....-25°C to +70°C

Vibration TestMIL-STD-202F,
Method 201A

Frequency10-50-10Hz/1minute

Directions.....X,Y,Z 3 mutually per
pendicular directions

Time.....2 hours each direction,
high reliability

Shock TestMIL-STD-202F,
Method 213A, Condition A

Gravity50g (peak value), 11msec.

Directions/Time.....6 sides and 3 times
in each direction

Physical Characteristics

Cover MaterialsStainless steel

Base MaterialsThermoplastic Nylon
FG 101, UL94V-0

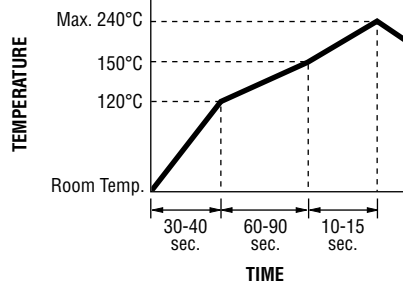
Actuator MaterialsThermoplastic
Nylon UL94V-0

Color.....Light blue, black, brown, red

Contact Disc. MaterialsPhosphor
bronze with silver cladding

Terminal MaterialsBrass with silver
cladding

REFLOW SOLDERING PROFILE (SMD MODEL)



SOLDERING PROCESS

Hand Soldering

Soldering iron of 30W or less,
controlled at 320°C for approx. 2
seconds while applying solder.

Reflow Soldering

Peak temperature or reflow oven
should be set to 240°C max.

HOW TO ORDER

SDT M - 6 10 - K TR

Model

Product Code

M = SMD

Size

6 = 6mm

Height

10 = 4.3mm

20 = 5.0mm

30 = 7.0mm

44 = 7.3mm (square head)

50 = 9.5mm

60 = 13mm

Actuating Force

U = 70g (blue)

K = 100g (black)

N = 160g (brown)

R = 260g (red)

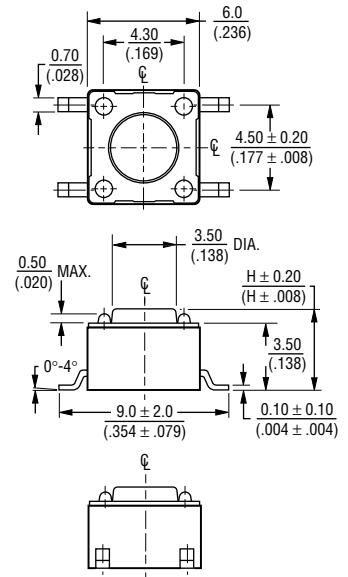
Packaging Option

TR = Embossed tape

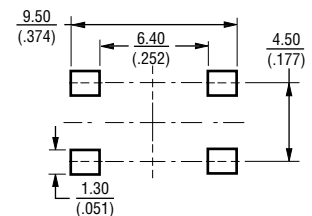
610 = 1000 pcs.

620 = 900 pcs.

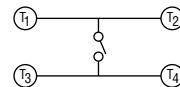
Product Dimensions



RECOMMENDED PCB LAYOUT



CIRCUIT DIAGRAM



DIMENSIONS: $\frac{MM}{(IN)}$

Additional Features

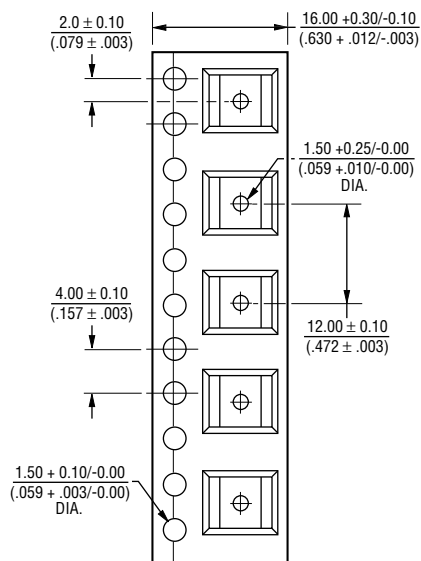
- Insert molding in the contact with special treatment prevents flux buildup during soldering and permits autodipping

SDTM Series SMD Tact Switch

BOURNS®

Packaging Specifications

SDTM610/620(TR)





Features

- Through-hole and SMD styles available
- Available sharp click feel with a positive tactile feedback
- Ultra-miniature and lightweight structure suitable for high density mounting
- Designed for washing after soldering

Applications

- Stereos
- Radios
- Television & decoder boxes
- GPS receivers

ST(H,M,J)W Series Sealed Tact Switch

Electrical Characteristics

Electrical Life

.....100,000 cycles min. for 160G, 260g
 RatingDC 12V, 50mA
 Contact Resistance.....100 mohms max.
 Insulation Resistance 100Mohms min.,
 DC 500V min.

Dielectric Strength

.....AC 250V for 1 minute
 Contact Arrangement...1 pole 1 position

Environmental Characteristics

Mechanical Life100,000 cycles min.
 Operation Force.....160g, 260g
 Tolerance±50g
 Stop Strength...Place the switch vertical,

a static load of 3kg shall be
 applied in the direction of actuator

operation for a period of 15 seconds
 Stroke.....0.25mm (+0.2mm, -0.1mm)
 Operating Temperature Range

.....-25°C to +70°C

Storage Temperature Range

.....-35°C to +80°C

Vibration TestMIL-STD-202F,
 Method 201A

Frequency10-55-10Hz/1minute

Directions.....X,Y,Z 3 mutually per
 pendicular directions

Time.....2 hours each direction,
 high reliability

Shock TestMIL-STD-202F,
 Method 213B, Condition A

Gravity50g (peak value), 11msec.

Directions/Time.....6 sides and 3 times
 in each direction

Physical Characteristics

Cover Materials.....Stainless steel

Base Materials.....Thermoplastic LCP
 UL94V-0 black

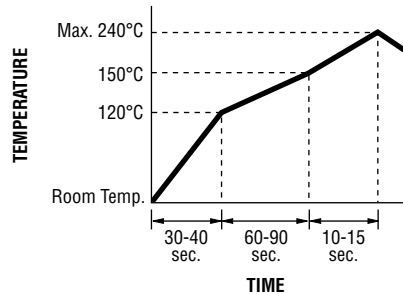
Actuator Materials.....Thermoplastic
 Nylon UL94V-0 (680, 690)

ColorBrown, Red (Silver 680 type)

Contact Disc. MaterialsPhosphor
 bronze with silver cladding

Terminal MaterialsBrass with silver
 cladding

REFLOW SOLDERING PROFILE (SMD MODEL)



SOLDERING PROCESS

Hand Soldering

Soldering iron of 30W or less,
 controlled at 320°C for approx. 2
 seconds while applying solder.

Reflow Soldering

Peak temperature or reflow oven
 should be set to 240°C max.

How to Order

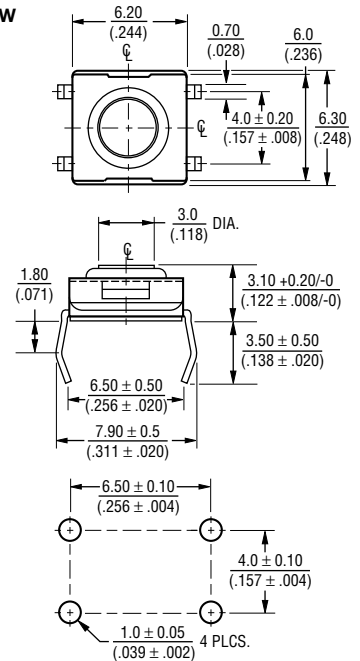
STM W - 6 60 - N TR

Model _____
 STM = SMD
 STH = Through-hole
 STJ = SMD J-Hook
 Product Type _____
 W = Washable
 Size _____
 6 = 6mm
 Height _____
 60 = 3.1mm (N)
 80 = 2.30mm (S)
 90 = 3.7mm (N,R)
 Actuating Force _____
 S = 160g (Silver)
 N = 160g (Brown)
 R = 260g (Red)
 Packaging Option _____
 (Type M, J only)
 TR = Embossed tape
 660, 680 = 2000 pcs.
 690 = 1900 pcs.

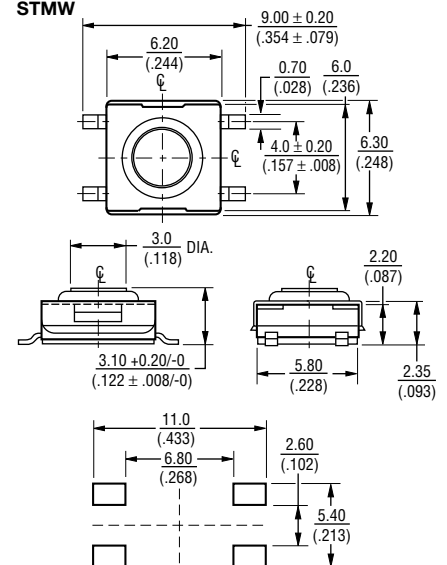
DIMENSIONS: $\frac{MM}{(IN)}$

Product Dimensions

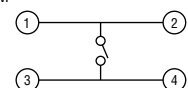
STHW



STMW



CIRCUIT DIAGRAM



Additional Features

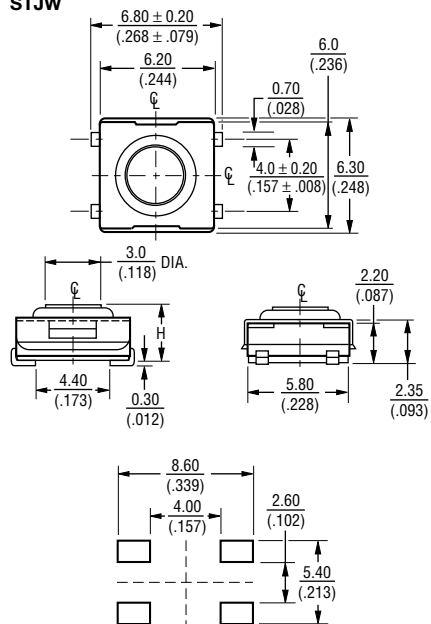
- Insert molding in the contact with special treatment prevents flux buildup during soldering and permits autodipping

ST(H,M,J)W Series Sealed Tact Switch

BOURNS®

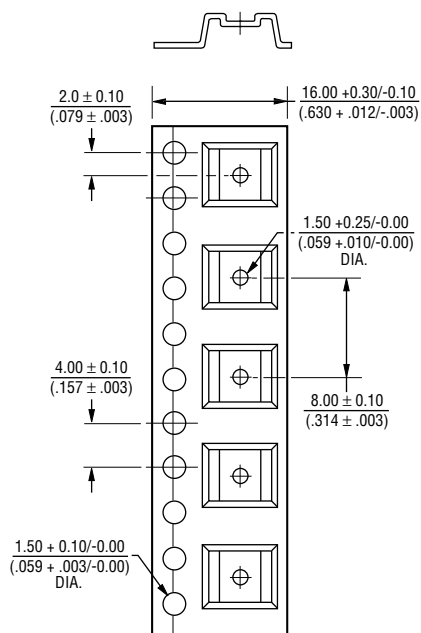
Product Dimensions

STJW



Packaging Specifications

STMW-660/680/690(TR) STJW-660/680/690(TR)





Features

- Super-thin 4.5mm square SMD
- Two different operating forces
- 0.55mm height without knob
- Compatible with surface mount reflow soldering processes

Applications

- Camcorders
- Audio equipment
- Electronic toys
- Cellular phones, pagers

STJN-4 SMD Super-Thin Tact Switch

Electrical Characteristics

Max. Power Rating ..12VDC max., 20mA
 Contact Resistance100 milliohms max.
 Insulation Resistance50 megohms min., 100 VDC
 Dielectric StrengthAC 100V for 1 minute
 Bounce
 On3ms max.
 Off10ms max.
 CircuitN.O. SPST

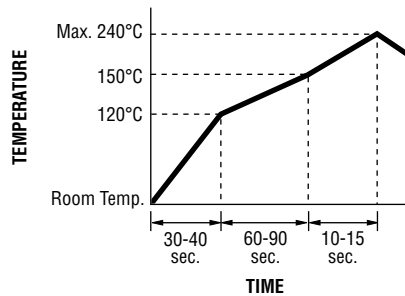
Mechanical Characteristics

Mechanical Life50,000 cycles min.
 Actuation Force
 160gf $\pm$ 50gf (1.6N $\pm$ 0.5N)
 240gf $\pm$ 60gf (2.4N $\pm$ 0.6N)
 Stroke0.2mm $\pm$ 0.1mm

General Characteristics

Switch Type(N.O.) SPST
 Operating Temperature Range-20°C to +70°C
 Storage Temperature Range-40°C to +85°C

Reflow Soldering Profile



SOLDERING PROCESS

Hand Soldering

Soldering iron of 30W or less, controlled at 320°C for approx. 2 seconds while applying solder.

Reflow Soldering

Peak temperature or reflow oven should be set to 240°C max.

How to Order

STJ N - 4 05 - N TR

Model _____
 Thin SMD Tact Switch

Product Code _____
 N = Non-washable

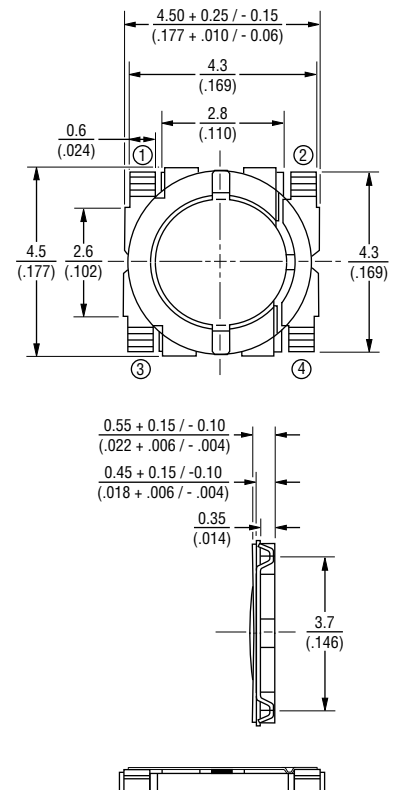
Size _____
 4 = 4.5mm

Height _____
 05 = 0.55mm (without knob)

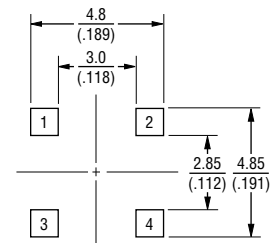
Actuating Force _____
 N = 160gf (1.6N)
 P = 240gf (2.4N)

Packaging _____
 TR = Embossed Tape
 10,000 pcs./reel

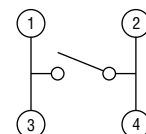
Product Dimensions



Recommended PCB Layout



Circuit Diagram





Features

- Thin 5mm square SMD
- Three different operating forces
- 0.8mm height without knob (1.5mm with knob)
- Compatible with surface mount reflow soldering processes

Applications

- Camcorders
- Audio equipment
- Electronic toys
- Cellular phones, pagers

STJN-5 SMD Thin Tact Switch

Electrical Characteristics

Max. Power Rating ..12VDC max., 50mA
 Contact Resistance
100 milliohms max.
 Insulation Resistance
100 megohms min., 100 VDC
 Dielectric Strength
AC 250V for 1 minute
 Bounce
 On3ms max.
 Off10ms max.
 CircuitN.O. SPST

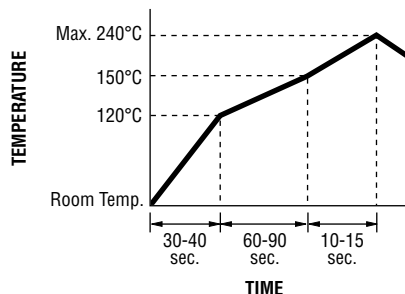
Mechanical Characteristics

Mechanical Life
 100gf + 160gf500,000 cycles min.
 260 gf200,000 cycles min.
 Actuation Force
100gf $\pm$ 50gf (1.0N $\pm$ 0.5N)
160gf $\pm$ 50gf (1.6N $\pm$ 0.5N)
260gf $\pm$ 60gf (2.6N $\pm$ 0.6N)
 Stroke.....0.25mm +0.10/-0.20

General Characteristics

Switch Type(N.O.) SPST
 Operating Temperature Range
-20°C to +70°C
 Storage Temperature Range
-40°C to +85°C

Reflow Soldering Profile



SOLDERING PROCESS

Hand Soldering

Soldering iron of 30W or less, controlled at 320°C for approx. 2 seconds while applying solder.

Reflow Soldering

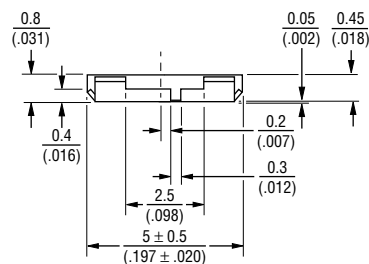
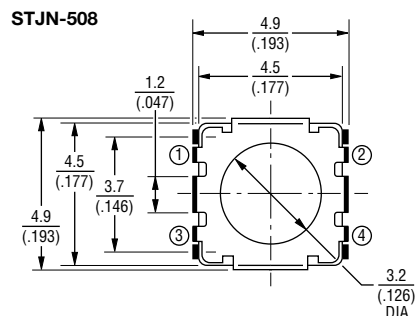
Peak temperature or reflow oven should be set to 240°C max.

How to Order

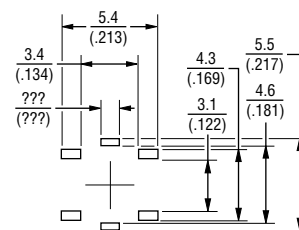
STJ N - 5 08 - N TR

Model _____
 Thin SMD Tact Switch
 Product Code _____
 N = Non-washable
 Size _____
 5 = 5mm
 Height _____
 08 = 0.8mm (without knob)
 15 = 1.5mm (with knob)
 Actuating Force _____
 K = 100gf (1.0N)
 N = 160gf (1.6N)
 R = 260gf (2.6N)
 Packaging _____
 TR = Embossed Tape
 5,000 pcs./reel

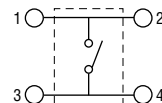
Product Dimensions



Recommended PCB Layout



Circuit Diagram



TOLERANCES: $\pm$.38 EXCEPT WHERE NOTED.

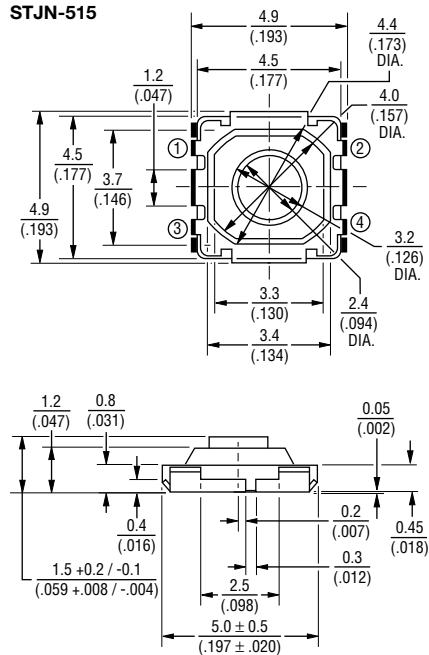
DIMENSIONS: $\frac{\text{MM}}{(\text{IN})}$

STJN-5 SMD Thin Tact Switch

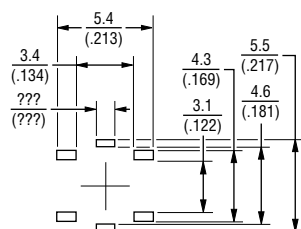
BOURNS®

Product Dimensions

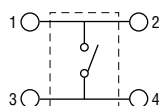
STJN-515

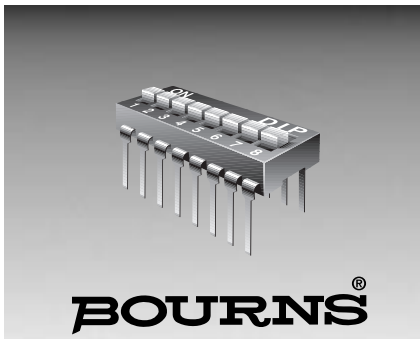


Recommended PCB Layout



Circuit Diagram





Features

- Double contacts offer high reliability
- Low contact resistance
- Self-clean on contact area
- Splay terminals allow for automatic insertion by IC insertion machine
- Straight terminals are available for manual insertion

Applications

- PC interface boards
- LANs
- Auto dialing systems
- Remote controlled systems

SDI Series DIP Switch (Machine Insertable Type)

Electrical Characteristics

Electrical Life2,000 operations min.
per switch, 24VDC, 25mA
Non-Switching Rating100mA, 50VDC
Switching Rating25mA, 24 VDC
Contact Resistance (@ current 100mA)
.....50 milliohms max. at initial
100 milliohms max. after life test
Insulation Resistance
.....100 megohms min. at 500 ±15VDC
Dielectric Strength.....500VDC/minute
Capacitance5pf max. between
adjacent closed switch
CircuitSingle pole single throw

Environmental Characteristics

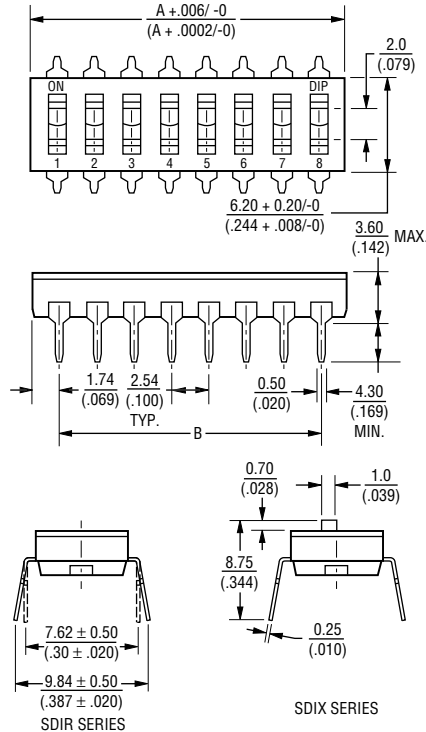
Mechanical Life...2,000 operations per switch
Operation Force800g max.
Stroke.....1.0mm
Operating Temp. Range.....-40°C to +85°C
Storage Temperature-40°C to +85°C
Vibration TestMIL-STD-202F,
Method 201A
Frequency10-55-10 Hz/minute
DirectionsX,Y,Z, three mutually
perpendicular directions
Time.....2 hours each direction.
High reliability
Shock TestMIL-STD-202F,
Method 213B, Condition A
Gravity50G (peak value), 11 msec
Direction & Times.....6 sides and
3 times in each direction.
High reliability

Physical Characteristics

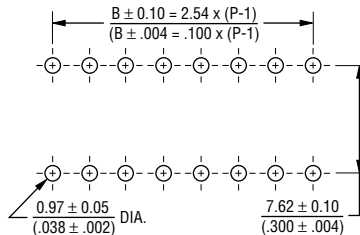
Base and Cover Materials
.....UL94V-0 high-temperature
thermoplastic PPS
ColorBlack
Actuator MaterialsUL94V-0 Nylon
plus glass fiber reinforced
ColorWhite
Contact MaterialsAlloy copper
Terminal MaterialsBrass
Contact Plating Materials
.....3 micro inches gold plating
over 40 micro inches nickel
Terminal Plating MaterialsGold
Wave Soldering Process*
.....Recommended solder temp. at 260°C
(500°F) max., 5 sec.
Hand Soldering Process*
.....Use a soldering iron of 30 watts
or less, controlled at 320°C (608°F) for
approx. 2 sec. while applying solder
Cleaning Process*
.....Flux clean using force rinse, high
agitation or triple bath cleaning method.
Freon TF or TE give excellent results.
When vapor methods are used, do not
subject the switch to solvents at
temperatures above 51°C (125°F).
Standard Packaging
.....IC tubes/all poles in the "off" position

Product Dimensions

SDI Series



RECOMMENDED PCB LAYOUT



SCHEMATIC (TYP.)

1-10 POSITIONS AVAILABLE



DIMENSIONS: $\frac{MM}{(IN)}$

How to Order

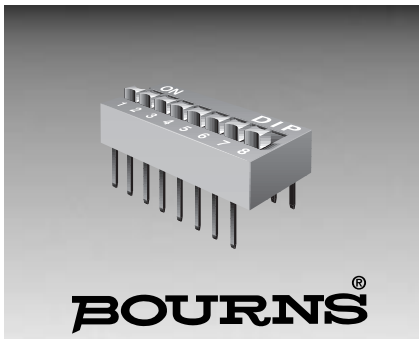
Model **SDI R - 1 - T S**
 Actuator
 • X = Raised Actuator
 • R = Recessed Actuator
 Number of Positions
 • 1 = 1 Position
 • 2 = 2 Positions
 • 4 = 4 Positions
 • 6 = 6 Positions
 • 8 = 8 Positions
 • 10 = 10 Positions
 Seal
 • X = Standard (Not Sealed)
 • T = Top Tap Sealed ("R" actuator only)
 Terminal Type
 • S = Splay Terminal
 • H = Straight Terminal

SDI Series Dimensions

MODEL NO.	POSITIONS	DIM. A	DIM. B
SDI-10	10	26.34	22.86
SDI-8	8	21.26	17.78
SDI-6	6	16.18	12.70
SDI-4	4	11.10	7.62
SDI-2	2	6.02	2.54
SDI-1	1	3.48	—

*For best results, keep all switch contacts in their "off" position for all operations.

Specifications are subject to change without notice.



Features

- Normal open contact system
- Low contact resistance
- High reliability
- Self-clean on contact area

Applications

- PC interface boards
- LANs
- Auto dialing systems
- Remote controlled systems

SDS/SDP/SDA Series Slide DIP Switch

Electrical Characteristics

Electrical Life2,000 operations min.
per switch, 24VDC, 25mA
Non-Switching Rating100mA, 50VDC
Switching Rating25mA, 24 VDC
Contact Resistance (@ current 100mA)
.....50 milliohms max. at initial
100 milliohms max. after life test
Insulation Resistance
at 500VDC $\pm 15V$ 100 megohms min.
between adjacent terminals
Dielectric Strength500VDC/minute
Capacitance5pF max. between
adjacent terminals
CircuitSingle pole single throw

Environmental Characteristics

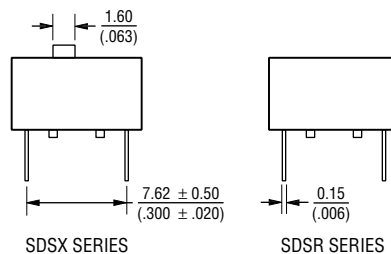
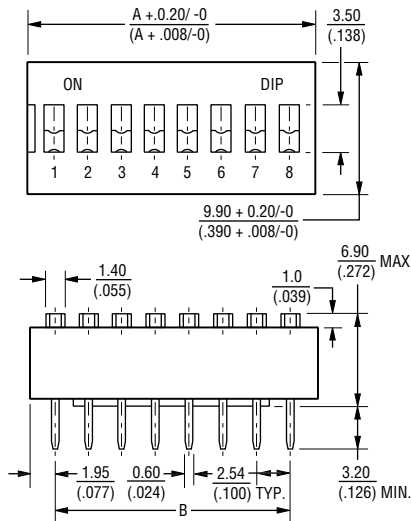
Mechanical Life ..2,000 operations per switch
Operation Force800g max.
Stroke2.0mm
Operating Temp. Range-40°C to +85°C
Storage Temperature-40°C to +85°C
Vibration TestMIL-STD-202F,
Method 201A
Frequency10-55-10 Hz/1 minute
DirectionsX,Y,Z, three mutually
perpendicular directions
Time2 hours each direction.
High reliability
Shock TestMIL-STD-202F,
Method 213B, Condition A
Gravity50G (peak value), 11 msec
Direction & Times6 sides and
3 times in each direction.
High reliability

Physical Characteristics

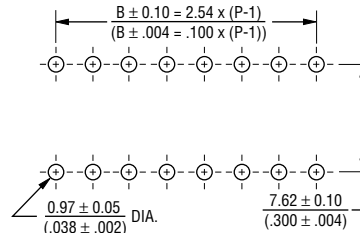
Base and Cover Materials
.....UL94V-0 PBT plus glass fiber reinforced
ColorBlack base, red cover
Actuator MaterialsUL94V-0 PBT
plus glass fiber reinforced
ColorWhite
Contact MaterialsPhosphor bronze with
3 micro inches gold plating over nickel
Top Seal MaterialsPolyester film
Potting MaterialsEpoxy
Wave Soldering Process*
.....Recommended solder temp. at 260°C
(500°F) max., 5 sec.
Hand Soldering Process*
.....Use a soldering iron of 30 watts
or less, controlled at 320°C (608°F) for
approx. 2 sec. while applying solder
Cleaning Process*
.....Flux clean using force rinse, high
agitation or triple bath cleaning method.
Freon TF or TE give excellent results.
When vapor methods are used, do not
subject the switch to solvents at
temperatures above 51°C (125°F).
Standard Packaging
.....IC tubes/all poles in the "off" position

Product Dimensions

SDS Series



RECOMMENDED PCB LAYOUT



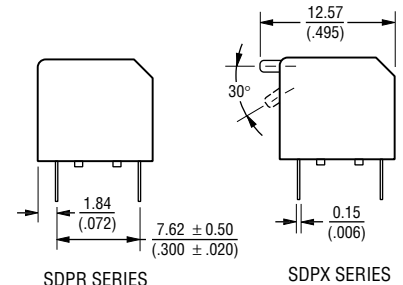
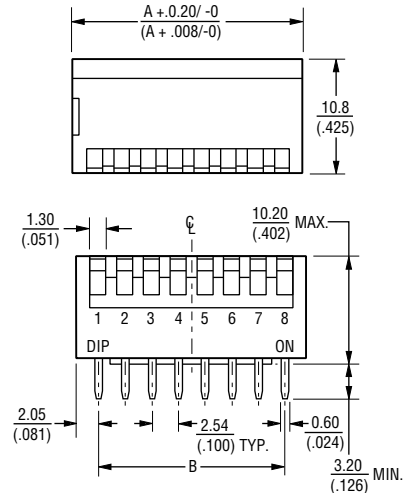
SCHEMATIC (TYP.)

2,3,4,5,6,7,8,9,10,12 POSITIONS AVAILABLE

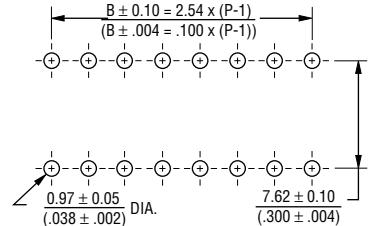


SEE FOLLOWING PAGE FOR A & B DIMENSION CHART.

SDP Series

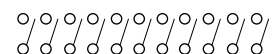


RECOMMENDED PCB LAYOUT



SCHEMATIC (TYP.)

2,3,4,5,6,7,8,9,10,12 POSITIONS AVAILABLE



SEE FOLLOWING PAGE FOR A & B DIMENSION CHART.

DIMENSIONS: MM
(IN)

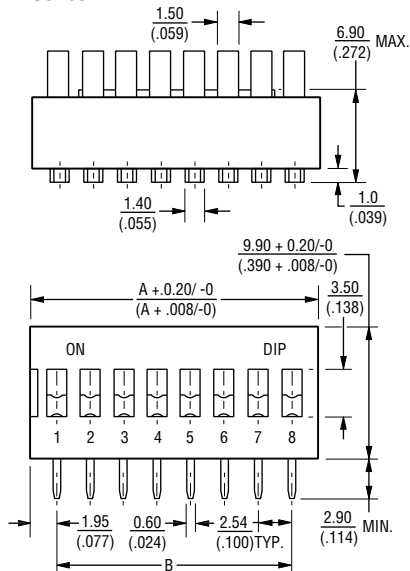
*For best results, keep all switch contacts in their "off" position for all operations.

SDS/SDP/SDA Series Slide DIP Switch

BOURNS®

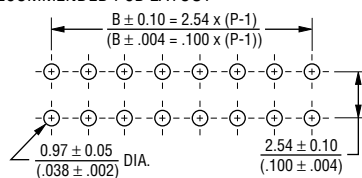
Product Dimensions

SDA Series



SDAX SERIES

RECOMMENDED PCB LAYOUT



SCHEMATIC (TYP.)

2,3,4,5,6,7,8,10,12 POSITIONS AVAILABLE



SDS/SDP/SDA Series Dimensions

POSITIONS	DIM. A	DIM. B
12	31.84	27.94
10	26.76	22.86
9	24.22	20.32
7	21.68	17.78
7	19.14	15.24
6	16.60	12.70
5	14.06	10.16
4	11.52	7.62
3	8.98	5.08
2	6.44	2.54

How to Order

Model SD S R - 2 R X - T

Type _____

- S = Standard
- A = Right Angle Type
- P = Piano Type

Actuator _____

- X = Raised Actuator
- R = Recessed Actuator

Number of Positions _____

- 2 = 2 Positions
- 3 = 3 Positions
- 4 = 4 Positions
- 5 = 5 Positions
- 6 = 6 Positions
- 7 = 7 Positions
- 8 = 8 Positions
- 9 = 9 Positions
- 10 = 10 Positions
- 12 = 12 Positions

Cover Color _____

- R = Red

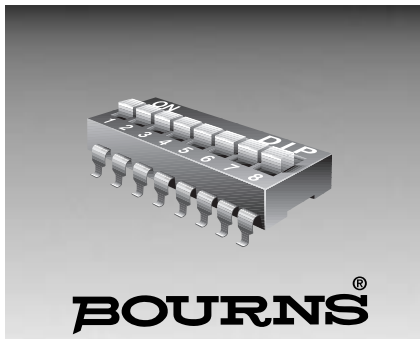
Switch Function _____

(Piano type ONLY - Type "P")

- X = Push Down "On"
- U = Push Down "Off"

Seal _____

- X = Standard (Not Sealed)
- T = Top Tap Sealed



Features

- Double contacts
- Low contact resistance
- Self-clean on contact area
- Vapor phase solderable, IR-reflow solderable
- Terminal plating by gold gives excellent results when soldering

Applications

- PC interface boards
- LANs
- Auto dialing systems
- Remote controlled systems

SDM Series Surface Mount DIP Switch

Electrical Characteristics

Electrical Life2,000 operations min.
per switch, 24VDC, 25mA
Non-Switching Rating100mA, 50VDC
Switching Rating25mA, 24 VDC
Contact Resistance (@ current 100mA)
.....50 milliohms max. at initial
100 milliohms max. after life test
Insulation Resistance
.....100 megohms min. at 500 ±15VDC
Dielectric Strength500VDC/minute
Capacitance5pF max. between
adjacent closed switch
CircuitSingle pole single throw

Environmental Characteristics

Mechanical Life..2,000 operations per switch
Operation Force800g max.
Stroke.....1.0mm
Operating Temp. Range.....-40°C to +85°C
Storage Temperature-40°C to +85°C
Vibration TestMIL-STD-202F,
Method 201A
Frequency10-55-10 Hz/1 minute
DirectionsX,Y,Z, three mutually
perpendicular directions
Time.....2 hours each direction.
High reliability
Shock TestMIL-STD-202F,
Method 213B, Condition A
Gravity50G (peak value), 11 msec
Direction & Times.....6 sides and
3 times in each direction.
High reliability

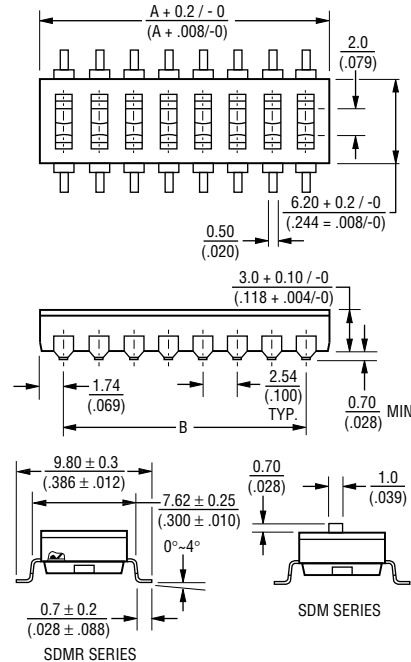
Physical Characteristics

Base and Cover Materials
..UL94V-0 PPS plus glass fiber reinforced
ColorBlack
Actuator MaterialsNylon
plus glass fiber reinforced
ColorWhite
Contact MaterialsAlloy copper
Terminal MaterialsBrass
Contact Plating Materials3 micro inches
gold plating over 40 micro inches nickel
Terminal Plating MaterialsGold
Soldering ProcessVapor phase and
IR-reflow soldering can be applied
Cleaning ProcessFreon TE, TF or
trichloromethane by ultrasonic
wave washing for 2 minutes give
excellent results

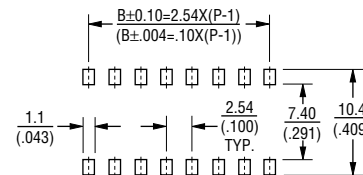
Standard Packaging
.....IC tubes/all poles in the "off" position

Product Dimensions

SDM Series



RECOMMENDED PCB LAYOUT



SCHEMATIC (TYP.)

2,3,4,5,6,7,8,9,10,12 POSITIONS AVAILABLE

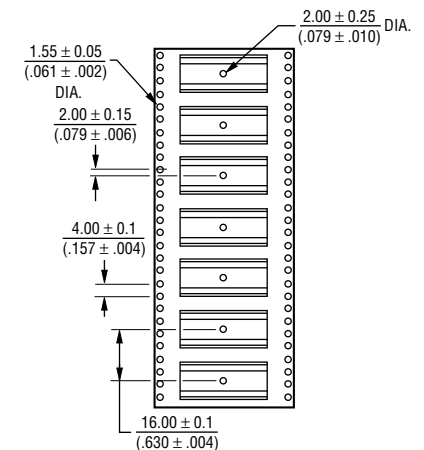


MODEL NO.	POSITIONS	DIM. A	DIM. B
SDM-12	12	31.42	27.94
SDM-10	10	26.34	22.86
SDM-8	8	21.26	17.78
SDM-6	6	16.18	12.70
SDM-4	4	11.10	7.62
SDM-2	2	6.02	2.54

DIMENSIONS: $\frac{\text{MM}}{(\text{IN})}$

Packaging Specifications

TAPE AND REEL PACKAGING SPECIFICATIONS



POLE	TAPE SIZE (W)
2,3	16mm
4,5,6	24mm
7,8	32mm
9,10,12	44mm

How to Order

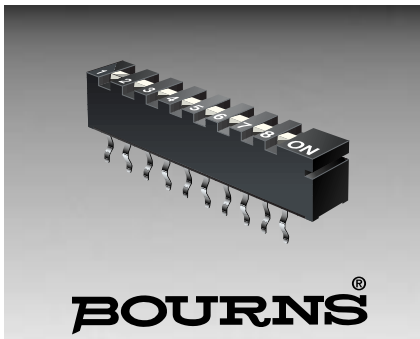
Model SDM R - 2 - T R

Actuator _____
 • X = Raised Actuator
 • R = Recessed Actuator

Number of Positions _____
 • 2 = 2 Positions
 • 4 = 4 Positions
 • 6 = 6 Positions
 • 8 = 8 Positions
 • 10 = 10 Positions
 • 12 = 12 Positions

Seal _____
 • X = Standard (Not Sealed)
 • T = Top Tap Sealed ("R" Actuator only)

Packaging Option _____
 (Top Sealed, Recessed only)
 • R = Tape and Reel Packaging
 (900 pcs./reel)



Features

- Double contact offers high reliability
- Splay terminals for automatic insertion by IC machine
- Insert molding of terminals and ultrasonic welding
- High density and thinner outline to reduce package space

Applications

- Interface boards from PC to modems, printers, plotters, instruments for IBM
- PC/XT/AT and compatibles
- Portable data logging systems
- Auto dialing & alarm monitoring systems
- I/O modules, signal conditioners
- Converters (communication)

SPI Series Single In Line Package Switch

Electrical Characteristics

Electrical Life1,000 operation cycles per switch min.
 Non-Switching Rating100mA, 50VDC
 Switching Rating10mA, 5VDC
 Contact Resistance100mohms max.
 Insulation Resistance100Mohms min.
 DC 100V min.
 Dielectric StrengthAC 300V for 1 minute
 Capacitance5pF max.
 CircuitSingle pole single throw

Environmental Characteristics

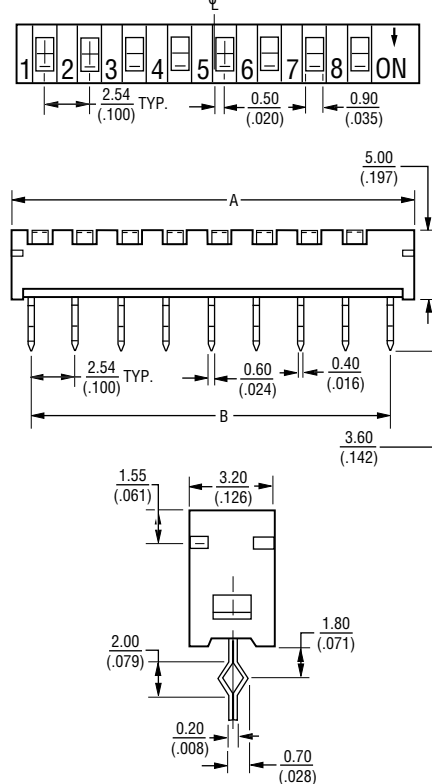
Mechanical Life1,000 operations per switch min.
 Operation Force800g max.
 Operating Temp. Range-30°C to +80°C
 Storage Temperature-30°C to +80°C
 Vibration TestMIL-STD-202F, Method 201A
 Frequency10-50-10 Hz/1 minute
 DirectionsX,Y,Z, three mutually perpendicular directions
 Time2 hours each direction, high reliability
 Shock TestMIL-STD-202F, Method 213B, Condition A
 Gravity50G (peak value), 11 msec
 Direction & Times6 sides and 3 times in each direction, high reliability

Physical Characteristics

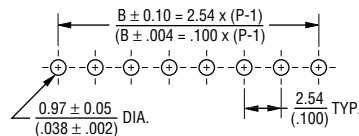
Cover MaterialsThermoplastic PBT, UL94V-0; black
 Base MaterialsThermoplastic PPS, UL94V-0; black
 Actuator MaterialsThermoplastic Nylon, UL94V-0; white
 Contact Materials ..Alloy Copper C5210-EH
 Contact Plating3 Micro inches gold over 40 micro inches nickel
 Terminal MaterialsBrass C2680C-H with 90/10 solder
 Hand Soldering ProcessUse a soldering iron of 30 watts or less, controlled at 270°C (608°F) for approx. 3 sec. while applying solder
 Wave SolderingRecommended solder at 245° C. 5 sec.
 Cleaning ProcessFreon TF or TE give excellent results. When vapor methods are used, do not subject the switch to solvents at temperatures above 51°C (125°F).
 PackagingAll poles in the "off" position

Product Dimensions

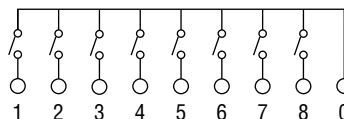
SPIX



RECOMMENDED PCB LAYOUT



CIRCUIT DIAGRAM



How to Order

SPI X - 8 - X

Model
 Terminal Style
 X = Straight
 Number of positions
 8 = 8 positions (9 pins)
 Option
 X = Standard packaging (tube)

DIMENSIONS ARE: METRIC
 (INCHES)

TOLERANCES: ±.2 EXCEPT WHERE NOTED.

DIMENSION A	DIMENSION B
22.86 (0.900)	17.78 (0.700)



Features

- Double contact offers high reliability
- Vapor phase and Infra-red solderable
- Terminal plating by gold gives excellent results when soldering
- Just 2.3mm total height
- Half pitch of 1.27mm(.050 in.)

Applications

- Interface boards from PC to modems, printers, plotters, instruments for IBM
- PC/XT/AT and compatibles
- Portable data logging systems
- Auto dialing & alarm monitoring systems
- I/O modules, signal conditioners
- Converters (communication)

SDH Series SMD DIP Switch Half Pitch

Electrical Characteristics

Electrical Life1,000 operation cycles per switch min.
 Non-Switching Rating100mA, 50VDC
 Switching Rating25mA, 24VDC
 Contact Resistance.....100mohms max.
 Insulation Resistance ..100Mohms min., DC 100V min.
 Dielectric Strength AC 300V for 1 minute
 Capacitance5pF max.
 between adjacent closed switch
 CircuitSingle pole single throw

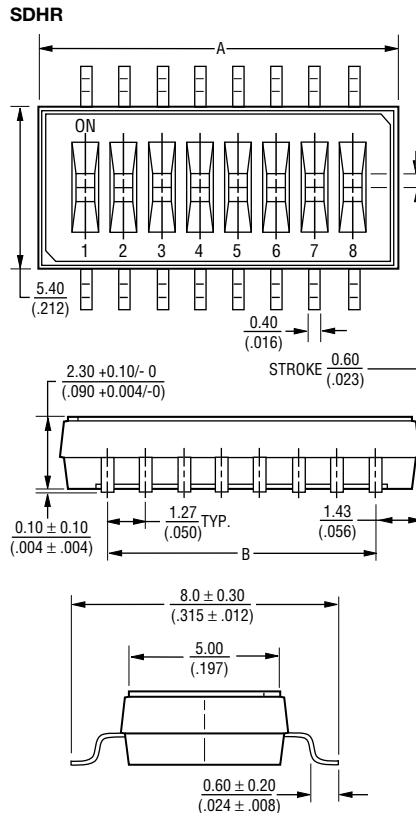
Environmental Characteristics

Mechanical Life2,000 operations per switch min.
 Operation Force500g max.
 Stroke.....0.6mm
 Operating Temp. Range -30°C to +85°C
 Storage Temperature-40°C to +85°C
 Vibration TestMIL-STD-202F, Method 201A
 Frequency10-50-10 Hz/1 minute
 Directions.....X,Y,Z, three mutually perpendicular directions
 Time.....2 hours each direction, high reliability
 Shock TestMIL-STD-202F, Method 213B, Condition A
 Gravity50G (peak value), 11 msec
 Direction & Times6 sides and 3 times in each direction. High reliability

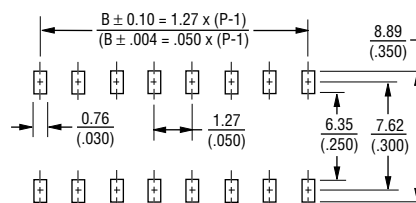
Physical Characteristics

Cover MaterialsThermoplastic Nylon, UL94V-0; black
 Base Materials.....Thermoplastic Nylon, UL94V-0; black
 Actuator MaterialsThermoplastic Nylon, UL94V-0; white
 Contact MaterialsAlloy Copper
 Contact Plating.....3 Micro inches gold over 40 micro inches nickel
 Terminal Materials.....Brass with Gold plating
 Reflow SolderingPeak temperature or reflow oven should be set to 240° C. max. 2 sec. while applying solder
 Cleaning ProcessFreon TF or trichlormethane by ultrasonic wave washing for 2 minutes
 Packaging.....All poles in the "off" position

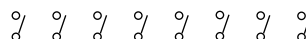
Product Dimensions



RECOMMENDED PCB LAYOUT



CIRCUIT DIAGRAM

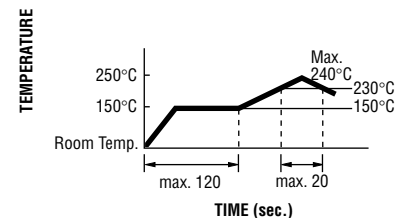


DIMENSION A	DIMENSION B
11.56 (0.455)	8.89 (0.350)

How to Order

Model _____ SDH R - 8 - T R
 Actuator _____
 R = Recessed
 Number of positions _____
 8 = 8 positions
 Seal _____
 T = Top tap sealed
 Packaging _____
 R = Tape and reel

REFLOW TEMPERATURE PROFILE



DIMENSIONS ARE: METRIC
(INCHES)

TOLERANCES: ±.2 EXCEPT WHERE NOTED.