SPECIFICATION SHEET

NEW

Sub-miniature Slide Switches - Washable 7E series

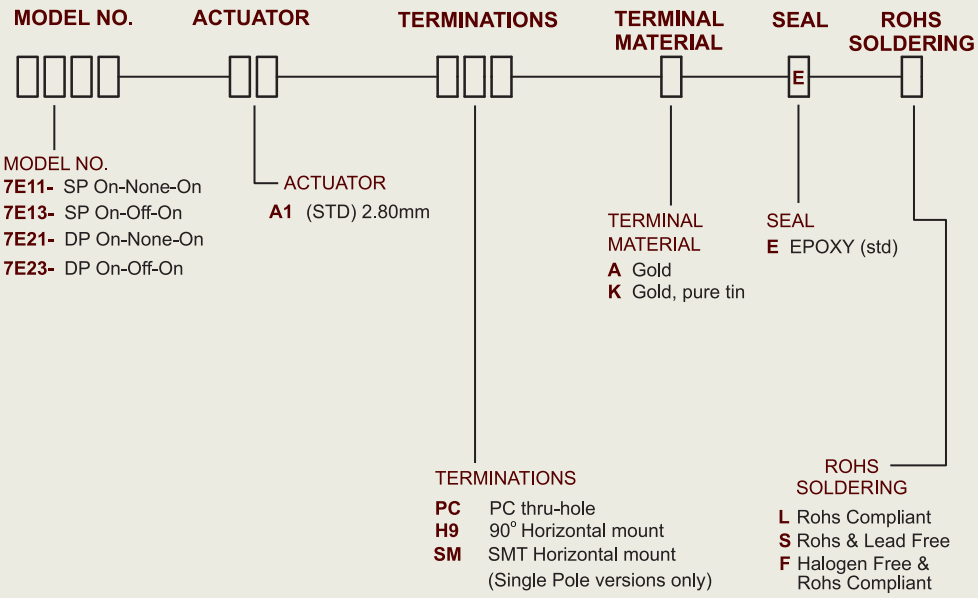
General Specification

Contact Rating:	0.4VA max. @ 48VAC or DC max.
Initial contact resistance:	50mΩ max.
Insulation resistance:	500MΩ min. at 250VDC
Dielectric strength:	500VAC rms min. at sea level, 1 minute.
Mechanical life at no load:	40,000 make-and-break cycles min.
Operating temperature range:	-20°~ +80°C
Degree of Protection:	IP67

Materials

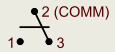
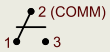
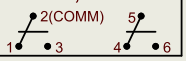
Housing/Switch Support:	Brass, nickel plated.
Actuator:	PBT, yellow std.
Case:	PBT (UL94V0), washable
Contact/Terminals:	Phosphor bronze - gold plated over nickel barrier
Terminal Seal:	Epoxy

How to Order



SPECIFICATION SHEET

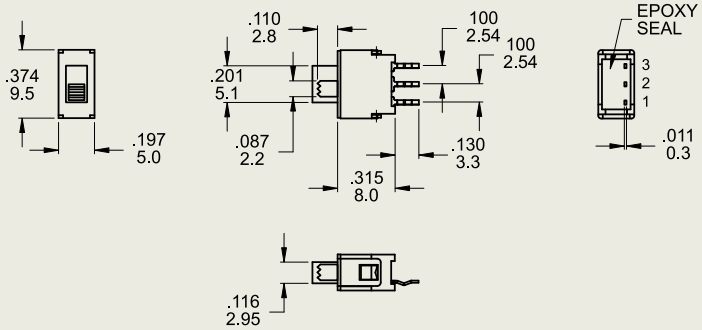
Switch Function

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC		
		POS.1	POS.2	POS.3	POS.1	POS.2	POS.3
SP	7E11	ON	NONE	ON	2-1	N/A	2-3
	7E13	ON	OFF	ON		OPEN	
DP	7E21	ON	NONE	ON	2-1,5-4	N/A	2-3,5-6
	7E23	ON	OFF	ON		OPEN	

MOM=MOMENTARY

Function/Mounting Options

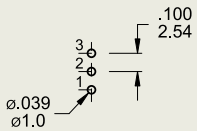
PC



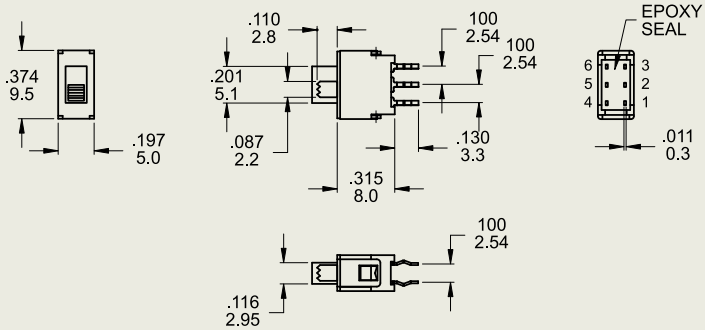
SPDT

Part No. Shown : 7E11-A1PCAE

P.C. MOUNTING



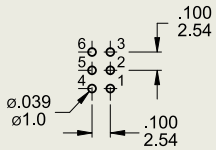
PC



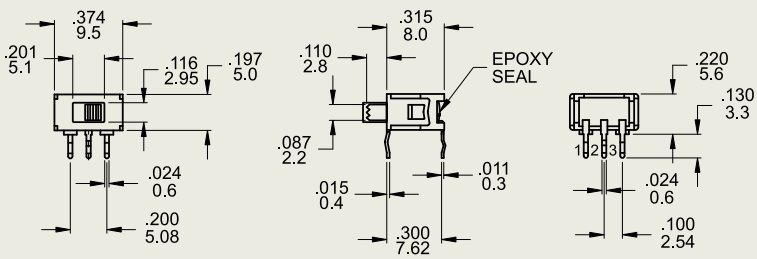
DPDT

Part No. Shown : 7E21-A1PCAE

P.C. MOUNTING



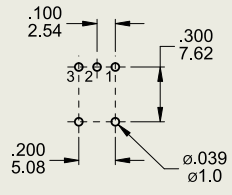
H9



SPDT

Part No. Shown : 7E11-A1H9AE

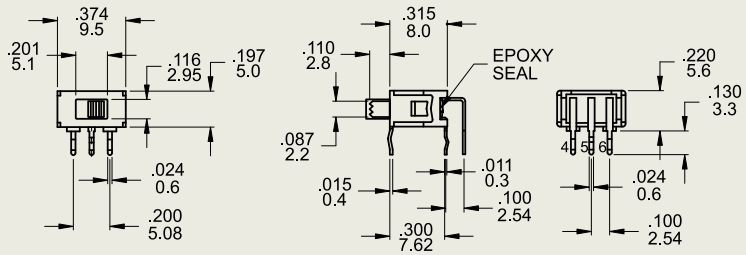
P.C. MOUNTING



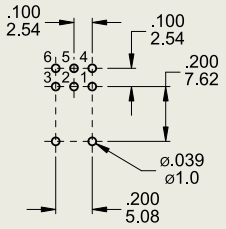
SPECIFICATION SHEET

Function/Mounting Options (contd.)

H9



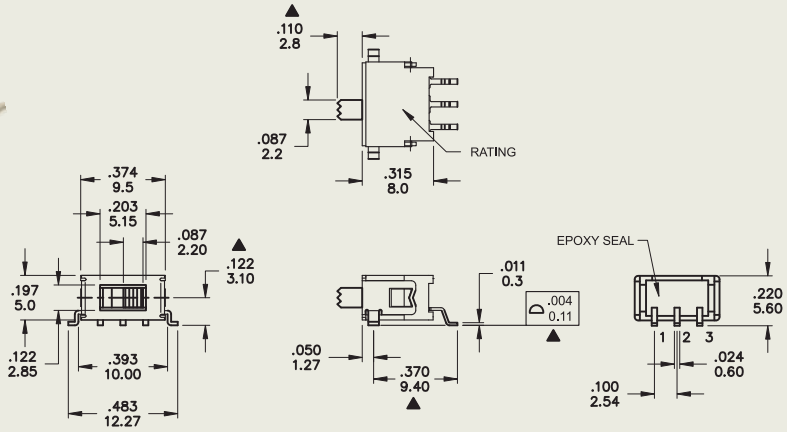
P.C. MOUNTING



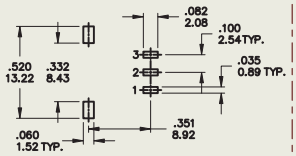
DPDT

Part No. Shown : 7E21-A1H9AE

SM



P.C. MOUNTING



SPDT (only)

Part No. Shown : 7E11-A1SMAE

SPECIFICATION SHEET

7E SERIES SPECIFICATION

Test Sequence

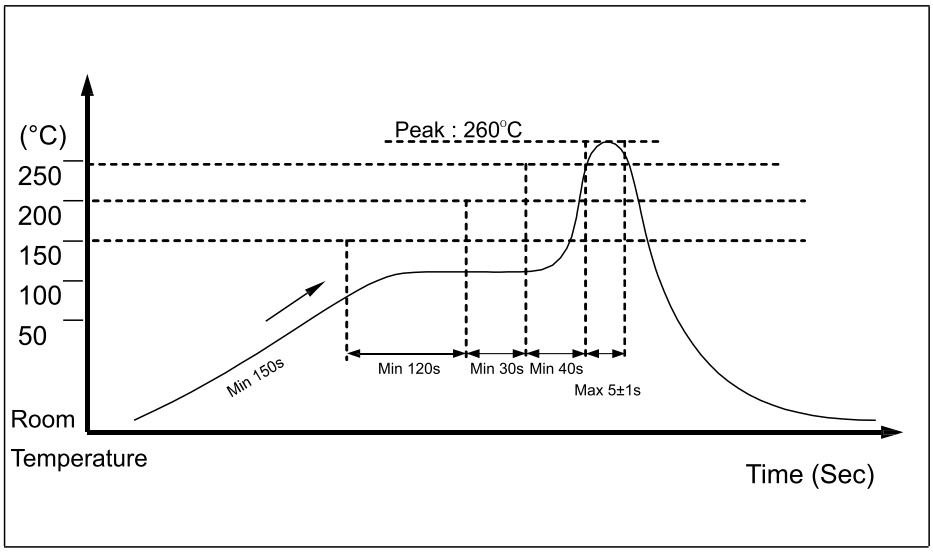
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
1	Visual Examination	Visual Examination check without any external force applied	There shall be no defects that affect the serviceability of the product.
2	Contact Resistance	@2-4VDC,100mA for both gold and gold/pure tin contacts.	50mΩ Max.
3	Insulation Resistance	Measurements shall be made following application of 250 VDC potential across terminals and cover.	500MΩ min/250VDC 100mA
4	Dielectric WithstandingVoltage	500 VAC (50Hz or 60Hz) 0.5mA shall be applied across terminals and cover for 1 minute.	There shall be no breakdown or flashover.
5	Solder Heat Resistance	**Wave Soldering** Soldering Temperature:260+/- 5°C. Duration of Solder Immersion: 5 ±1 Seconds. Frequency of soldering process 2 times max. PCB is 1.6mm in thickness	Shall be free from pronounced backlash and falling-off or breakage of terminals. Shall conform to the limits in items 2 to 4.
6	Vibration	Shall be tested in accordance with Method 201A of MIL-STD-202F. (a) Frequency: 10-55-10Hz in 1 min./cycle. (b) Direction: 3 vertical directions including the directions of operation (c) Test time: 2 hours in each direction	Shall conform to the limits in items 2 to 4.
7	Shock	Shall be tested in accordance with Method 213B condition A of MIL-STD-202F (a) Acceleration: 50g (b) Action time: 11+/-1ms (c) Testing direction: 6 sides (d) Test cycle: 3 times in each direction	Shall conform to the limits in items 2 to 4.
8	Actuation Force	Model-1305N Mechanical Test	Test Force : 300+/-100g.
9	Operating Life	Measurements shall be made following the test below: (a) Working with 0.4VA max @ 48VAC or DC max. (b) Rate of operation: 6-8 operations per minute (c) Mechanical Life Test: 40,000 cycles:	(1) Shall conform to the limits in items 3 to 4.
10	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: (a) Temperature -20±3°C. (b) Time 96 hours.	Shall conform to the limits in items 1 to 4.
11	Resistance High Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: (a) Temperature 80±2°C . (b) Time 96 hours.	Shall conform to the limits in items 1 to 4.

⑫	Resistance Humidity	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: (a) Temperature 40±2°C. (b) Relative Humidity 90~95%. (c) Time 96 hours.	Shall conform to the limits in items ① to ④.
⑬	The Salt Testing	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: (a) Temperature 35±2°C. (b) The ratio of salt-water: 5%. (c) The spray amount of salt- water 1~2 ml/h. (d) Time 48 hours.	The testing standard based on bubble, crack, and magnifying glass with gauge.

Soldering Conditions

Wave soldering

Temperature Profile



(PCB is 1.6mm in thickness)

Manual Soldering

Soldering Temperature	**Max.300°C**
Continuous Soldering Time	**Max. 3 seconds**

Precautions in Handling:
Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.