

<b><i>SH</i></b>	<b>Technical Standards</b>	Standard	7.1
<b>E-SPEC-09</b>	<b>T80-S Specification</b>	Edition	E2
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1. Style :

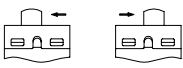
This specification describes slide switch mainly used as small current and signal switch of electric device with the general required of mechanical and characteristics.

Operating and storage temperature range:-30°C~+85°C

2. Rated Current : **6A,125VAC/3A,250VAC** or 28VDC

3. Type of Actuation : Actuated by sliding.

4. Programmer of test :

peculiarity	ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENTS
<b>ELECTRIC CHARACTERISTICS</b>	1	Visual Examination	By visual examination check without any pressure and testing	There shall be no defect that affect the function of the product
	2	Contact Resistance	①To be measured between the two terminals associated with each switch pole. ②Measurements shall be made with a 1kHz shall current contact resistance meter.	10mΩ MAX(initial)
	3	Insulation Resistance	500VDC,1min±5sec	1000MΩ MIN
	4	Dielectric withstanding voltage	1500VAC (50Hz or 60 Hz) shall be applied between all the adjacent terminals and between the terminal and the frame for 1 minute.	There shall be no breakdown or flashover
<b>MECHANICAL CHARACTERISTICS</b>	5	Operating Force	Applied in direction operation 	10N max
	6	Stop Strength	A static load of 30N is applied in the operating direction and pulling direction operated for a period of 30 seconds.	There shall be no sign of damage mechanically

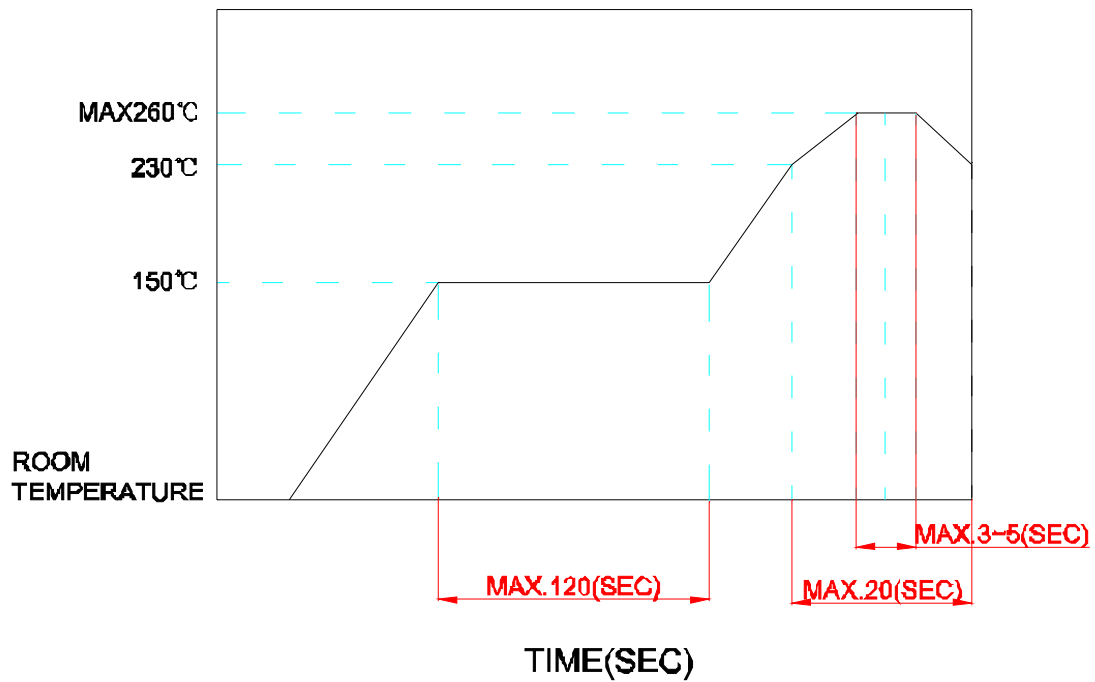
<b>MECHANICAL CHARATERISTICS</b>	7	Soldering Heat Resistance	<input type="checkbox"/> through hole type ( 1 ) Soldering Temperature : 260±5°C ( 2 ) Duration of Solder Immersion : 5±1sec ( 3 ) Frequency of Soldering Process, 2 times Max (PCB is 1.6mm in thickness)	As show in item 2~6
	<b>DURABILITY</b>	8	Operation Life	Measurements shall be made following the test set forth below: ①3A, 250VAC resistive load ②Rate of Operation : 6~8cycles/minute ③Cycle of Operation : 30,000cycles
<b>WEATHER-PROFF</b>		9	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made ①Temperature : -30±3°C ②Time : 48 hours
	10	Resistance high Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made ①Temperature : 85±3°C ②Time : 48 hours	As show in item 2~6
	11	Resistance Humidity	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made ①Temperature : 40±2°C ②Relative Humidity : 90-95%RH ③Time : 48 hours	1.As show in item 4~6 2. Contact Resistance: 100mΩ max 3. Insulation Resistance: 10MΩ min

### 5. Safety Approval:

- 5.1 This series carry the UL approvals and c-UL(the same effect with CSA)
- 5.2 The File no.of UL:E123142
- 5.3 The applying category no.of UL:T80-S
- 5.4 The File no.of TUV:R50132949
- 5.5 The applying category no.of TUV:T80-S1 · T80-S2
- 5.6 The File no.of CQC:CQC08002027717
- 5.7 The applying category no.of CQC:T80-S1 · T80-S2

### 6. Soldering Condition

- Condition for soldering



- Manual soldering :

Soldering Temperature	MAX.350°C
Continuous Soldering Time	MAX.3 seconds

- Precautions in Handling :

1. Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
2. Don't wash switch body.

**7. Material :**

7.1 CACE : diallyl phthalate(DAP)(UL94V-0)

7.2 SLIDE HANDLE : Nylon

7.3 HOUSING : Stainless Steel

7.4 END CONTACTS : Copper alloy , silver or gold plated

7.5 CENTER CONTACTS & ALL TERMINALS : Copper alloy , silver or gold plated

7.6 TERMINAL SEAL : Epoxy

**8. PART NUMBERING OPTION:**

8.1

TS-13-A1-2 - C Q - E -S20 -H

Model No.		Switching Position		
SPST	TS-13(2P)	ON	NONE	OFF
SPDT	TS-13	ON	NONE	ON
SPDT	TS-13A	ON	NONE	MOM
SPDT	TS-14	ON	OFF	ON
DPDT	TS-11	ON	NONE	ON
DPDT	TS-12	ON	OFF	ON

Actuator Options:  
A1 / A2 / A3 / A4 / A5/A6/A7/  
S1 (for 6P)

Actuator Color option	
Code	Color
1	White
2	Black
9	Gray

RoHS code:  
H = RoHS Compliant

Support Bracket Option:  
S20 : 8.89(SPDT)  
S20: 10.16(DPDT)  
S25: 13.67 (SPDT)

Epoxy Sealed:  
:none seal  
E :epoxy seal

Contact / Terminal Plated Option:  
See 9. Contact Option:

Terminal Options:  
B / C / D / D1 / D3

### 8.2

TS-13P-A1-2-Q-E-□-H

Horizon Right Angle	Vertical Right Angle	Switches Function
TS-13P(2P)	TS-13L(2P)	SPST on-none-off
TS-13P	TS-13L	SPDT on-none-on
TS-13PA	TS-13LA	SPDT on-none-mom
TS-14P	TS-14L	SPDT on-off-on
TS-11P	TS-11L	DPDT on-none-on
TS-12P	TS-12L	DPDT on-off-on

Actuator Options:  
A1 / A2 / A3 / A4 / A5 / A6 / S1 (for 6P)

Actuator Color option	
Code	Color
1	White
2	Black
9	Gray

RoHS code:  
H = RoHS Compliant

Support Bracket:  
□: straight type (std.)  
S: snap-in type

Epoxy Sealed:  
□: none seal  
E: epoxy seal

Contact / Terminal Plated Option:  
See 9. Contact Option:

### 9. Contact Option:

OPTION CODE	CONTACT PLATING	TERMINAL PLATING	RATING
Q	Silver plated	Silver plated	6A @125VAC or 28 V DC;3A@250VAC
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4 VA MAX @20 V AC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4VA MAX @20 V AC or DC MAX or 6A@ 125VAC or 28 V DC;3A@250VAC
K	Gold plated over nickel plated	Tin over nickel plated	0.4 VA MAX @20 V AC or DC MAX