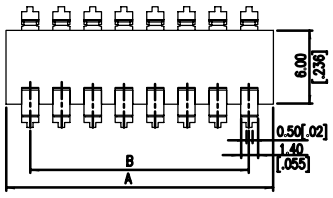
DIP Switch

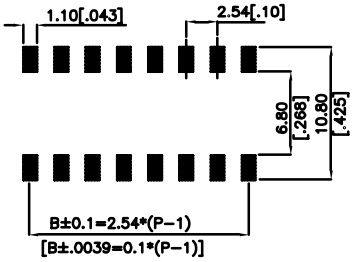
RoHS Compliant

Specification

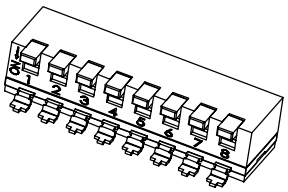
General Tolerances : ±0.2mm
Pitch : 2.54mm [0.1]

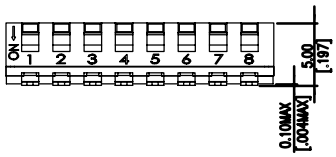
Diagram

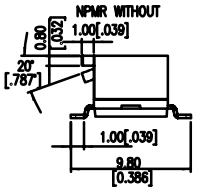




P.C.B. LAYOUT





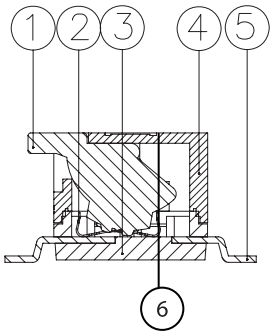


SCHEMATIC(TYP.)

CIRCUIT DIAGRAM

Dimensions : Millimetres (Inches)

Item	Description	Q'ty	Materials	Treatment
1	Actuator	*	High – Temp. Thermoplastic LCP	Molded White
2	Contact		Copper	Gold Plated 0.075um min .
3	Base	1	High – Temp. Thermoplastic Nylon 9T UL 94V-0	Molded Black
4	Cover			
5	Terminal		Brass	Gold Plated 0.075um min .
6	APE		Kapton	--



1. **Style**

This specification describes “PUSH LEVER SWITCHES”, mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristics.

1.1 Operating Temperature Range: -20°C+85°C

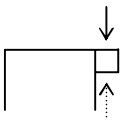
1.2 Storage Temperature Range : -40°C+85°C

1.3 The shelf life of product is within 6 months.

2. Current Range : 100mA, 50V DC
   Switching : 25mA , 24V DC

3. Type of Actuation: Actuated by Rotating

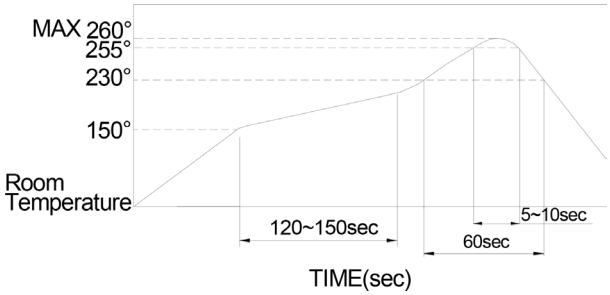
4. **Test Sequence**:

Item	Description	Test Conditions	Requirements
Electric Performance			
1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
2	Contact Resistance	1. To be measured between the two terminals associated with each switch pole. 2. Measurements shall be made with a 1kHz shall current contact resistance meter.	1) 100mΩ max. (initial) 2) After various kinds of test, it contacts impedance and can not be worth being higher than 200 mΩ Max
3	Insulation Resistance	500V DC, 1 minute ± 5 sec.	100MΩ Min.
4	Dielectric Withstanding Voltage	100 V AC (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
5	Capacitance	1 MHz ±10 kHz	5 pF max.
Mechanical Perfprmance			
6	Operation Force	Applied in the direction of operation. ON→OFF OFF→ON 	800gf Max (7.84N Max)

7	Stop Strength	A static load of 1 kgf (9.8N) is applied in the operating direction and pulling direction operated for a period of 60 seconds.	There shall be no sign of damage mechanically There shall be no sign of electrical function out of order or damage.
8	Soldering Heat Resistance	Soldering Temperature : TEMP TIME 260°C±5°C 5±1 sec. 2.SMT TYPE NPM :SEE PAGE 4/4 3.Frequency of Soldering Process: 2 times max. (PCB is 1.6mm in thickness.)	As shown in item 1, 2, 3, 4, 6
9	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F 1. Frequency: 10-55-10 Hz 1 min/cycle. 2. Direction: 3 vertical directions including the direction of operation. 3. Test Time: 2 hours each direction.	As shown in item 1, 2, 3, 4, 6
10	Shock	Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F 1) Acceleration: 50G 2) Action time:11±1m seconds 3) Testing Direction: 6 sides 4) Test Cycle: 3 times in each direction	As shown in item 1, 2, 3, 4, 6
11	Solderability	1)NP-V Soldering Temperature:245±3°C Lead-Free solder: M705E JIS Z 3282 Class A (Tin 96.5%, Silver 3%, Copper 0.5%) 2)Flux: 5-10 seconds. 3)Duration of solder Immersion: 5±1 sec.	No anti-soldering and the coverage of dipping into solder must more than 75% was requested.
Durability			
12	Operating Life	Measurements shall be made following the test forth below: 1. 10 mA, 5V DC resistive load 2. Rate of Operation: 15~20 cycles/ minute 3. Cycle of Operation: 2000 cycles.	1. As shown in item 1, 3,4 2. Contact Resistance: 200mΩ max.
Weather-Proof			
13	Resistance Low 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: 1)Temperature: -40±3°C 2)Time: 96 hours	As shown in item 2, 3, 4, 6
14	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: 1. Temperature: 85±2°C 2. Time: 96 hours	1.As shown in item 3, 4, 6 2.Contact Resistance: 200mΩ max.

15	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: 1. Temperature:85±2°C 2. Relative Humidity:90~95% 3. Time:96 hours	1.As shown in item 1, 4, 6 2.Contact Resistance: 100mΩ max. 3.Insulation Resistance : 100MΩ min.

Soldering Conditions



- The condition mentioned above is the temperature on the Cu foil of the PCB surface.
  There are cases where board's temperature greatly differs from switch's surface temperature depending on board's material, size, thickness, etc. Care, therefore, should be used not to allow switch's surface temperature to exceed 260°C.
- Manual Soldering

Soldering Temperature Max.350°C
Continuous Soldering Time Max. 5 seconds

Part Number Table

Description	Part Number
DIP Switch, SMT, 4 Position	MPNPM-04VR