

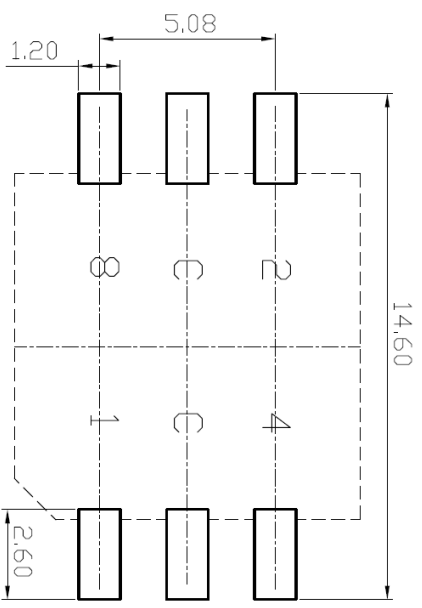
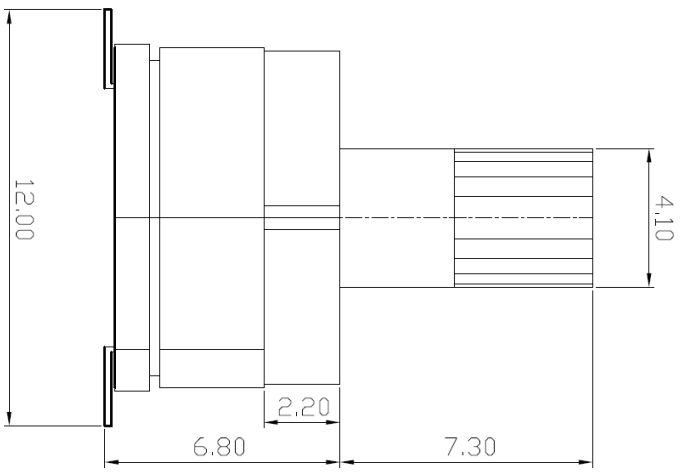
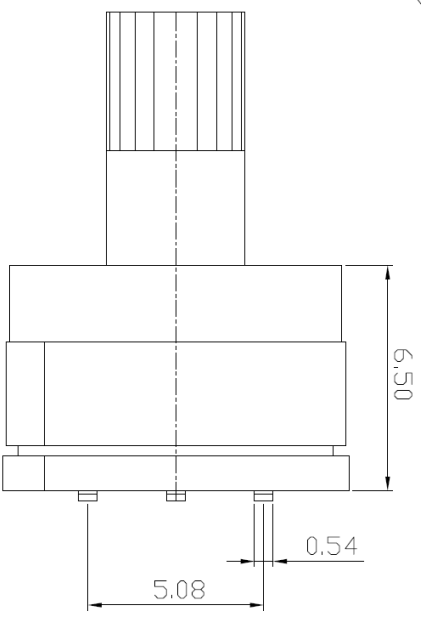
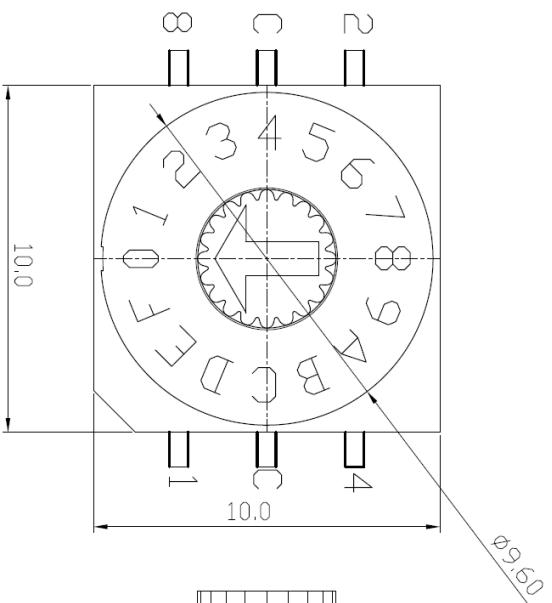
- 规格书 -

产品型号: MHR-16S

产品名称: 旋转编码开关

SM SWITCH CO.,LTD

Add : 江苏省无锡市新吴区弘毅路8号金帛座706室
 韩国京畿道富川市三鹊路22号富川科技园103-506栋
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P.C.B DIMENSION

| | | |
|------|------|---------|
| MARK | DATE | REMARKS |
| △ | | |
| △ | | |

| | | Real Code | | | | |
|----|----------|-----------|---|---|---|---|
| | | C | 1 | 2 | 4 | 8 |
| 16 | Position | ● | ● | ● | ● | ● |
| 15 | Position | ● | ● | ● | ● | ● |
| 14 | Position | ● | ● | ● | ● | ● |
| 13 | Position | ● | ● | ● | ● | ● |
| 12 | Position | ● | ● | ● | ● | ● |
| 11 | Position | ● | ● | ● | ● | ● |
| 10 | Position | ● | ● | ● | ● | ● |
| 9 | Position | ● | ● | ● | ● | ● |
| 8 | Position | ● | ● | ● | ● | ● |
| 7 | Position | ● | ● | ● | ● | ● |
| 6 | Position | ● | ● | ● | ● | ● |
| 5 | Position | ● | ● | ● | ● | ● |
| 4 | Position | ● | ● | ● | ● | ● |
| 3 | Position | ● | ● | ● | ● | ● |
| 2 | Position | ● | ● | ● | ● | ● |
| 1 | Position | ● | ● | ● | ● | ● |
| 0 | Position | ● | ● | ● | ● | ● |
| A | Position | ● | ● | ● | ● | ● |
| B | Position | ● | ● | ● | ● | ● |
| C | Position | ● | ● | ● | ● | ● |
| D | Position | ● | ● | ● | ● | ● |
| E | Position | ● | ● | ● | ● | ● |
| F | Position | ● | ● | ● | ● | ● |

| | | | |
|---------|---------|---------|---------------------|
| APPD | CHKD | D'SCD | TITLE |
| YD WANG | J.S KIM | H.S LEE | ROTARY DIP SWITCH |
| | | | MODEL NO. |
| | | | MHR-16S |
| | | | SM SWITCH CO., LTD. |
| | | | REV |
| | | | A |



ROTARY DIP SWITCH SPECIFICATION

Rev. B
P:1/4

1. Style:

This specification describes "Rotary Switch" mainly used as signal switch of electric devices with the general requirements of mechanical and electrical characteristics.

1.1 Operating / Storage Temperature Range : -40°C ~ +85°C

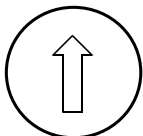
2. Current Range:

2.1 None-Switching : 200 mA, 42V

2.2 Switching : 150 mA, 42V

3. Type of Actuation : Rotating

4. Test Sequence :

| ELECTRICAL PERFORMANCE | ITEM | DESCRIPTION | TEST CONDITIONS | REQUIREMENTS |
|------------------------|-----------------|--|--|---|
| | 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 | 80mΩ max.(initial) |
| | 3 | Insulation Resistance | 250V DC, 1minute ±5seconds | 100MΩ min |
| | 4 | Dielectric withstanding Volotage | 250V AC(50Hz or 60Hz)shall be applied between all the adjacent terminal and between the terminal and the frame For 1 minute | There shall be no breakdown or flashover |
| 5 | Operation Force | Applied in the direction of operation  | 700gf/cm. max | |



ROTARY DIP SWITCH SPECIFICATION

Rev. B
P: 2/4

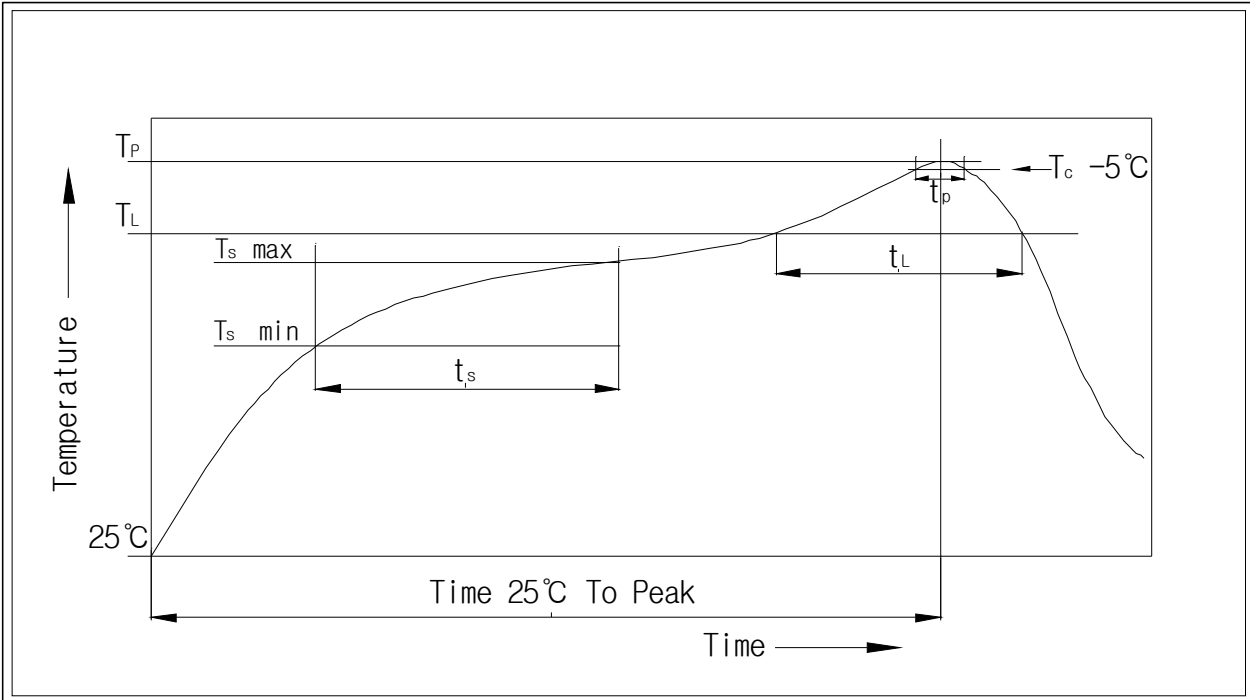
| | | | | |
|---|----------|--|---|---|
| M A C H I N P E R F O R M A N C E | 6 | Operation Life | <p>Measurements shall be made following the test set forth below:</p> <p>1)150mA, 42V DC resistive load 2)Rate of operation: 15~20 cycles/ minute 3)Step of operation: 10,000 steps</p> | <p>1)As shown in item 3,4 2)Contact Resistance: 200mΩ max 3)Final-after test</p> |
| | 7 | Resistance Low Temperature | <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1)Temperature: -60℃ ±3℃ 2)Time: 96 hours</p> | <p>1)As shown in item 3~5 2)Contact Resistance: 200mΩ max</p> |
| | 8 | Resistance High Temperature | <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1)Temperature: 125℃ ±2℃ 2)Time: 96 hours</p> | <p>1)As shown in item 3~5 2)Contact Resistance: 200mΩ max</p> |
| | 9 | Resistance Humidity | <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1)Temperature: 40℃ ±2℃ 2)Relative humidity: 90~95% 3)Time: 96 hours</p> | <p>1)As shown in item 4 2)Contact Resistance: 200mΩ max 3)Insulation Resistance: 10MΩ min</p> |



ROTARY DIP SWITCH SPECIFICATION

Rev. B
P: 3/4

6. Reflow Soldering Conditions:



1) Classification Reflow Profiles

| Profile Feature | Pb-Free Assembly |
|--|---------------------------------|
| Average Ramp-UP Rate(T_s max to T_P) | 3°C/second max |
| Preheat - Temperature Min(T_s min) - Temperature Max(T_s max) - Time (t_s min to t_s max) | 150°C 200°C 60-180seconds |
| Time maintained above: - Temperature (T_L) - Time (t_L) | 217°C 60-150seconds |
| Peak/Classification Temperature(T_P) | 260°C +0°C/ -5°C |
| Time within 5°C of actual Peak Temperature(t_P) | min 30 seconds |
| Ramp-Down Rate | 6°C/sec max |
| Time 25°C to Peak Temperature | 8 minutes max |

7. This item is "ROHS" Compliant



ROTARY DIP SWITCH SPECIFICATION

Rev. B
P: 4/4

8. Part List

| NO | PART NAME | Q'TY | MATERIALS | TREATMENT | REMARK |
|----|--------------------|------|-----------------|--|---|
| 1 | COVER | 1 | LCP | | Print |
| 2 | BASE | 1 | | | |
| 3 | ACTUATOR | 1 | PA66, STS | | |
| 4 | CONTACT & TERMINAL | 1 | PHOSPHOR BRONZE | CONTACT AND TERMINAL PLATING: GOLD PLATING OVER NICKEL | Au 0.03 μ m Min Ni 0.1 μ m Min |
| 5 | PCB | 1 | EPOXY | PLATING: GOLD PLATING | Au 0.05 μ m Min |
| 6 | O-Ring | 1 | SILICONE | | |