

# DATA SHEET

**SUNGMUN CODE :** HASR-16S

**DESCRIPTION :** ROTARY DIP SWITCH

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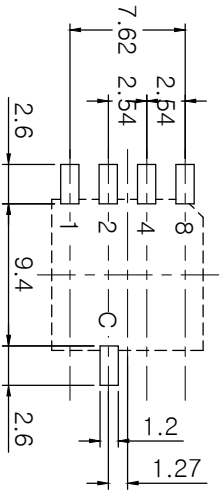


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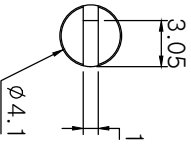
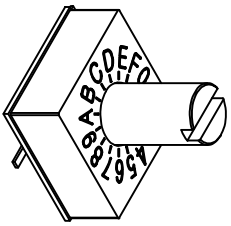
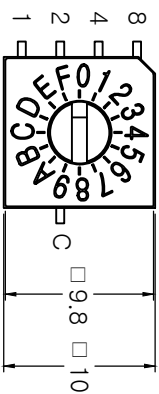
MRK.	DATE	REVISION	SIGN
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## SPECIFICATION

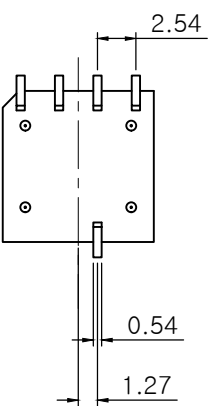
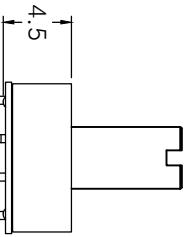
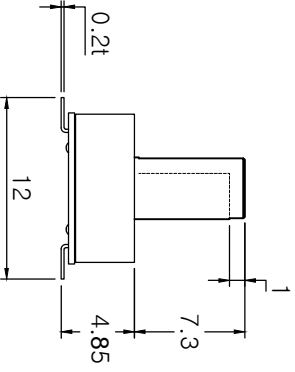
1. Rating : 25mA, DC 12V (Switching)  
25mA, DC 24V (None-Switching)
2. Contact Resistance : 100mΩ Max
3. Insulation Resistance : 100MΩ Min
4. Operating Force : 700gf Max
5. Life cycle : 10,000 steps
6. Sealing : IP67 (Dust & Water proof)
7. Packing : 50pcs Tube



P.C.B DIMENSION (Top View)



ACTUATOR



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

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DRAW/DESIGNED	CHECKED	APPROVED	G.TOL		TITLE
J.S YANG	W.J LEE	K.I LEE	±0.3	ROTARY DIP SWITCH	
2021-10-29	2021-10-29	2021-10-29	UNIT	MODEL NO.	
			mm	HASR-16S	
			SCALE	DRAW NO.	
			2:1	HASR-16S-03	
			SIZE	REV.	
			A4	03	



### 1. Description:

This specification describes "10X10 slim size of Rotary Dip Switches" which is U&H series.

1-1 Operating / Storage Temperature Range : -40°C ~ +85°C

### 2. Rating:

2-1 None-Switching : 25 mA, DC 24V

2-2 Switching : 25 mA, DC 12V

3. Type of Actuation : Rotating

### 4. Electrical Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
4-1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
4-2	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.	100mΩ max.
4-3	Insulation Resistance	250V DC, 1minute ±5seconds	100 MΩ min.
4-4	Dielectric withstanding Voltage	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.



# "U/H" SERIES ROTARY DIP SWITCH SPECIFICATION (10X10)

## 5. Mechanical Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
5-1	Operation Force	Operating direction shall be clockwise or counter clockwise direction	700gf·cm max
5-2	Operation Life	Measurements shall be made following the test set forth below: 1)150mA, 24V DC resistive load 2)Rate of operation: 15~20 cycles/ minute 3)Step of operation: 10,000 steps	1)As shown in item 4-3, 4-4 2)Contact Resistance: 200mΩ max

## 6. Environmental Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
6-1	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: 1)Temperature: -40°C ±3°C 2)Time: 96 hours	1)As shown in item 4-3, 4-4, 5-1 2)Contact Resistance: 200mΩ max
6-2	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: 1)Temperature: 85°C ±2°C 2)Time: 96 hours	1)As shown in item 4-3, 4-4, 5-1 2)Contact Resistance: 200mΩ max
6-3	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: 1)Temperature: 40°C ±2°C 2)Relative humidity: 90~95% 3)Time: 96 hours	1)As shown in item 4-4, 5-1 2)Contact Resistance: 200mΩ max 3)Insulation Resistance: 10 MΩ min

7. This item is "RoHS" Compliant

8. Manual Soldering : Max 350°C, 3 sec.

9. Wave Soldering : Max 260°C, 5 sec.

10. Reflow Soldering Conditions: (SMD type only)



**10-1 Condition for Soldering**

Profile Feature	Pb-Free Assembly
Average Ramp-UP Rate( $T_s \text{ max}$ to TP)	3°C/second max
Preheat	
- Temperature Min( $T_s \text{ min}$ )	150°C
- Temperature Max( $T_s \text{ max}$ )	200°C
- Time ( $t_s \text{ min}$ to $t_s \text{ max}$ )	60-180seconds
Time maintained above:	
- Temperature ( $T_L$ )	217°C
- Time ( $t_L$ )	60-150seconds
Peak/Classification Temperature(TP)	260°C +0°C/ -5°C
Time within 5°C of actual Peak Temperature(TP)	5~10 seconds
Ramp-Down Rate	6°C/sec max
Time 25°C to Peak Temperature	8 minutes max

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