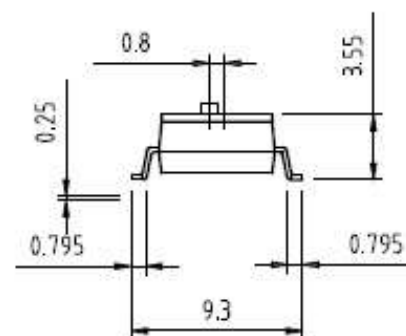


P.C.B LAYOUT



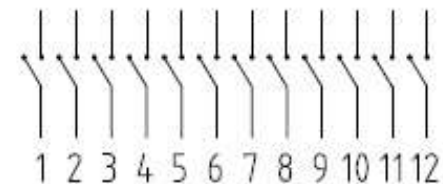
### ORDER INFORMATION

SWDM-XX - XX

No. of Position

GE:3u" Gold plated  
GK:4u" Gold plated  
GF:10u" Gold plated  
GA:12u" Gold plated  
GB:20u" Gold plated  
GG:30u" Gold plated

### SCHEMATIC



Poles	A(mm)
01	2.54
02	5.08
03	7.62
04	10.16
05	12.70
06	15.24
07	17.78
08	20.32
09	22.86
10	25.40
12	30.48

Name	Material	Finished
Base	PPS UL94 V0	Black
Cover	PPS UL94 V0	Black
Actuator	Nylon UL94 V0	White
Movable	Copper Alloy	Gold
Terminal Contact	Brass	Gold
Terminal	Brass	Gold / Tin

**MOBICON**  
Electronic Components

PART NO.	SWDM-XX-XX	DRAWN	Andrew
DRAWING NO.	SWDM-XX-XX	CHECKED	Claudla
DATE	2014/07/01	APPROVED	Brian

TITLE:	SLIDE SWITCH SMT Type	REV.	A0	TOLERANCE	.X ±0.25 .XX ±0.20	SCALE	1:1	UNIT	mm	NO.	DESCRIPTION	DATE	2023/10/6
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# Approval Data

CUSTOMER APPROVAL		
PREPARED	CHECKED	APPROVED

CUSTOMER:

P/N: SWDM SERIES

# Index

§ Inspection Report.....	2 pages
§ Standard Specification.....	6 pages
§ Detail Drawing.....	4 pages
§ Material UL Card.....	2 pages

## **SWDM series DIP Switch**

### **STANDARD SPECIFICATION**

#### **1.Ratings:**

- 1.1 **Mechanical Life** : 3000 cycles minimum
- 1.2 **Contact Rating**: 100mA at 50 Vdc non-switching; 25 mA at 24 Vdc, 10 mA at 50 Vdc Switching.
- 1.3 **Contact Resistance**:
  - 50 milliohms maximum (initial)
  - 100 milliohms maximum (after test)
- 1.4 **Insulation Resistance**: 100MΩ Min.at 500 Vdc between adjacent closed contacts and also across open switch contacts.
- 1.5 **Dielectric Strength**: 500 Vac, RMS, minimum voltage measured between adjacent closed contacts and also across open switch contacts.
- 1.6 **Switch Capacitance**: 5pF at 1 MHz
- 1.7 **Operating Temperature**: -40°C to +85°C.
- 1.8 **Storage Temperature**: -40°C to +85°C.
- 1.9 **Test condition** : The standard test shall be 5 ~ 35°C temperature and 45 ~ 85% relative humidity 860 ~ 1060 Hpa atmospheric pressure unless otherwise specified. In case of any question happen, retest condition shall specify by temperature 20 ± 2°C, 65 ±5%RH and 860 ~ 1060 Hpa.

#### **2.Materials and Finishes:**

- 2.1 Finished code :
  - G**: Full Gold Plated (Contact area & Terminal with gold-plated )
- 2.2 Plated code :
  - E**: 3 u" Gold-Plated
  - K**: 4 u" Gold-Plated
  - F**: 10u" Gold-Plated
  - A**: 12u" Gold-Plated
  - B**: 20u" Gold-Plated
  - G**: 30u" Gold-Plated
- 2.3 **Base** : UL 94 V0 grade PPS Thermoplastic / Black color
- 2.4 **Cover** : UL 94 V0 grade PPS Thermoplastic / Black color
- 2.5 **Actuator** : UL 94 V0 grade NYLON Thermoplastic / Whit color

#### **3.Processing:**

- 3.1 **Switch Operation and Taping**
  - 3.1.1 Use tweezers or ball point pen for operation.
  - 3.1.2 Flux cleaning should be done without removing the tape
  - 3.1.3 If the tape is removed, it adhered less than before when it is placed back on, possibly causing flux inflow.
  - 3.1.4 Sealed switches withstand aqueous, detergent and isopropyl alcohol washing.

# **STANDARD SPECIFICATION**

## **4. ELECTRICAL CHARACTERISTIC :**

ITEM	TEST DESCRIPTION	TEST CONDITIONS	SPECIFICATION
4.1	<b>Contact Resistance</b>	To be measure with AC 1 KHz $\pm$ 200Hz (Max 20mV, Max 50mA) or 10mA, 5V DC.	Max 50 m $\Omega$
4.2	<b>Insulation Resistance</b>	To be measured with an insulation measuring device of 500V DC between all the terminals and between the terminals and the frame for 1 minute $\pm$ 5 seconds.	Min 100M $\Omega$
4.3	<b>Dielectric Breakdown Voltage</b>	AC 500V (50-60Hz, 2mA current) being applied between all the adjacent terminals and between the terminal and frame for 1 minute.	No breakdown insulation

## **5. MECHANICAL CHARACTERISTIC :**

ITEM	TEST DESCRIPTION	TEST CONDITIONS	SPECIFICATION
5.1	<b>Operation Force</b>	Applied in the direction of operation.	20-1000gf
5.2	<b>Terminal Strength</b>  <b>MIL-STD-202F</b> <b>Method : 211A</b> <b>Condition : C</b>	Measurement in made with a static load applied to the foot of the control unit in the operating direction. A static force of 500gf being applied in one direction on the tip of the terminal for 5~10seconds. One time each terminal.	No bending or deflection experienced. The terminal may be bent, but shall not break or damage the insulation material.
5.3	<b>Operation Strength</b>	A load of 1Kgf is applied in the operating direction and pulling direction of the control unit for 15 seconds.	Electrical characteristic of the above(4.1~4.3) shall be assured.

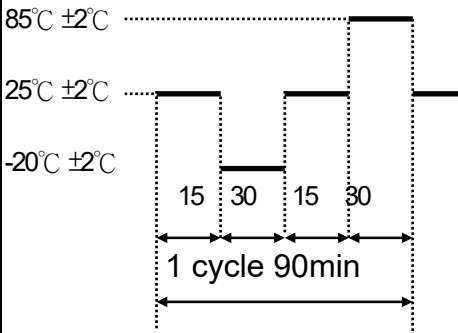
# **SWDM series DIP Switch**

## **STANDARD SPECIFICATION**

### **6. RELIABILITY**

<b>6.1</b>	<b>Cold Resistance</b>  <b>JIS-C5021</b>	Switch for testing being kept in the conditions at $-40 \pm 2^{\circ}\text{C}$ in temperature for 96hours, and in a normal ambient condition for one hour, then to be measured within one hour. (Drops of water being taken away)	Contact resistance Min $100\text{m}\Omega$ Insulation resistance Min $100\text{M}\Omega$ Dielectric breakdown voltage: AC 500V 1 minute no breakdown insulation
<b>6.2</b>	<b>Dry Heat Resistance</b>  <b>JIS-C5022</b>	Switch for testing being kept in the conditions at $85 \pm 2^{\circ}\text{C}$ in temperature for 250 hours, and in a normal ambient condition for one hour, then to be measured within one hour.	Operating force 1000gf Max. There shall be no defects in appearance or in the mechanical functions.
<b>6.3</b>	<b>Humidity Resistance</b>  <b>MIL-STD-202F</b> <b>Method : 103B</b> <b>Condition : C</b>	Switch for testing being kept in the conditions at $40 \pm 2^{\circ}\text{C}$ in temperature and 90~95% RH for 250 hours, and in a normal ambient condition for one hour, then measured within one hour.	Contact resistance Max $100\text{m}\Omega$ Insulation resistance Min $100\text{M}\Omega$ Dielectric breakdown voltage: AC 500V 1 minute no breakdown insulation Operating force 20~1000gf Max.
<b>6.4</b>	<b>Vibration Test</b>  <b>MIL-STD-202F</b> <b>Method : 201A</b> <b>Condition : A</b>	The range of vibration: 10 ~ 55Hz Total width of vibration: 1.5mm The proportion of vibration: 10~55~10(Hz) approx. 1 minute The variation of the number of vibration: Logarithmic or approx. straight line The directions: 3 vertical directions including operation direction Amplitude : 0.03inch~0.06inch Duration: 2 hours each (Total 6 hours)	There should be no defects in appearance or in the mechanical functions.

# **SWDM series DIP Switch** **STANDARD SPECIFICATION**

6.5	<b>Shock Test</b>  <b>MIL-STD-202F</b> <b>Method : 213B</b> <b>Condition : A</b>		Contact resistance Max 100mΩ Insulation resistance Min 1000 MΩ Dielectric breakdown voltage: AC 500V 1 minute no breakdown insulation Operating force 20~1000gf Max. There shall be no defects in appearance or in the mechanical functions.
6.6	<b>Thermal Shock</b>	<p>After 5 cycle testing under the following conditions, the sample is allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement is made within 1 hour after that. Water drops should be eliminated.</p> <p>Temperature cycle</p>  <p>85°C ±2°C</p> <p>25°C ±2°C</p> <p>-20°C ±2°C</p> <p>15 30 15 30</p> <p>1 cycle 90min</p>	Contact resistance Max 100 mΩ Insulation resistance Min 100 MΩ Dielectric breakdown voltage: AC 500 V 1 minute no breakdown insulation Operating force 1000gf Max.  There shall be no defects in appearance or in the mechanical functions

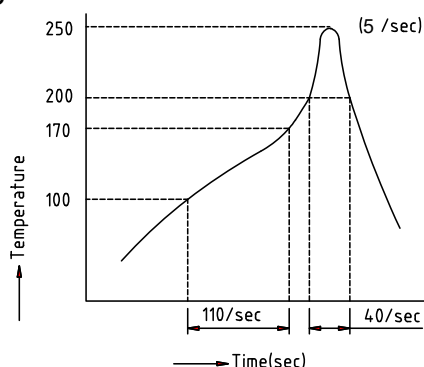
# SWDM series DIP Switch

## STANDARD SPECIFICATION

ITEM	TEST DESCRIPTION	TEST CONDITIONS	SPECIFICATION
6.7	<b>Resistance to Soldering Heat</b>  <b>JIS-C5034</b>	<b>Reflow Soldering</b> P.C. board terminal at $250 \pm 5^{\circ}\text{C}$ , $5 \pm 1$ second Should be operated in OFF positions when soldering <b>Wave Soldering :</b> Soldering temperature: $230 \pm 5^{\circ}\text{C}$ Immersing time: $3 \pm 0.5$ second <b>Iron Tip :</b> 30W Iron / ceramic Tip Temp. : $320 \pm 5^{\circ}\text{C}$ / 3 sec per pin	Contact resistance Max $50\text{m}\Omega$ Insulation resistance Min $100\text{M}\Omega$ Dielectric breakdown voltage AC500V 1 minute no breakdown insulation Operating force 1000gf Max

**(1) Reflow soldering:**

Device :In-line or Batch system  
Apply reflow soldering only once



**(2)** When soldering two or more terminals to the common land, use solder resist to solder them independently.

6.8	<b>Salt-Spray Test</b>  <b>MIL-STD-202F</b> <b>Method : 101D</b> <b>Condition : B</b>	The sample is allowed to stand in the test chamber controlled to $35 \pm 2^{\circ}\text{C}$ in temperature and $5 \pm 1\%$ (weight ratio) salt-water concentration for $48 \pm 1$ hour and is subjected to test. Then, salt deposits attached to the sample are washed away with water.	Shall be free from functionally harmful rust. There shall be no defects in appearance or in the mechanical functions.
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***SWDM series DIP Switch***  
**STANDARD SPECIFICATION**

**7. DURABILITY**

ITEM	TEST DESCRIPTION	TEST CONDITIONS	SPECIFICATION
7.1	<b>Operation Life With No Load</b>	3,000 cycle operation at a rate of 15 ~20 cycle / minute	Contact resistance Max 100 m $\Omega$ Insulation resistance Min 100 M $\Omega$ with DC 250V Dielectric breakdown voltage: AC 250 V 1 minute no breakdown
7.2	<b>Operation Life With Load</b>	DC 24V 25mA 2,000 cycle operation at a rate of 15 ~ 20 cycle / minute	insulation Operating force : 20~1000gf Max.  There shall be no defects in appearance or in the mechanical functions.