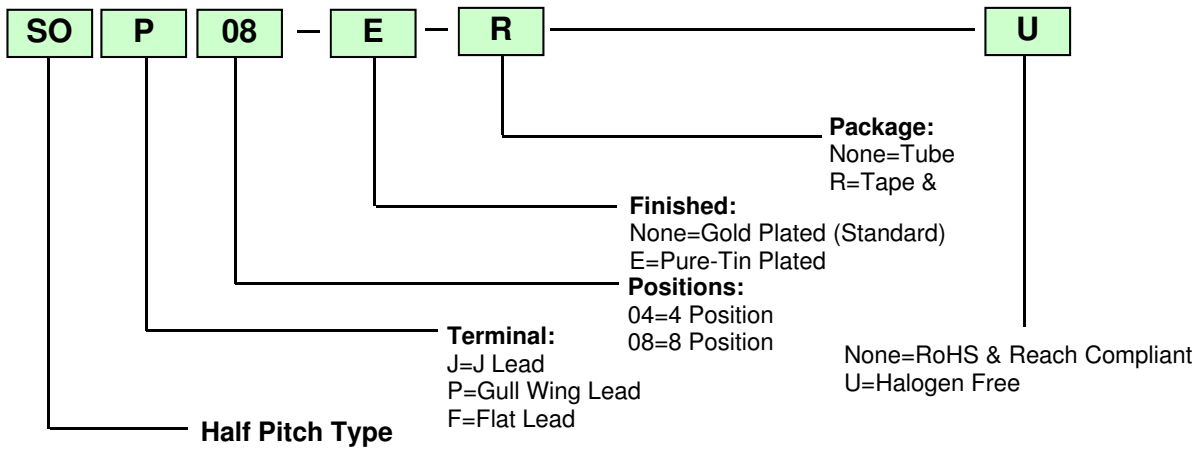


<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-001	Page
<b>SO series</b> <b>Half Pitch Type</b>			1/4

**Order Information**



**Specifications**

◆ Contact Rating	Switching.....	25mA, 24VDC
	Non-Switching.....	100mA, 50VDC
◆ Contact Resistance	Initial.....	50mΩ Max
	After Reliability Test.....	100mΩ Max
◆ Insulation Resistance	.....	100MΩ Min. at 500 VDC
◆ Dielectric Strength	.....	300VAC/ 1 mintue
◆ Operating Force	.....	500g Max
◆ Travel	.....	0.7mm
◆ Mechanical Life	.....	2,000 cycles (Min.)
◆ Electrical Life	.....	1,000 cycles /25mA,24VDC
◆ Operating Temperature	.....	-40°C ~ +85°C
◆ Storage Temperature	.....	-40°C ~ +85°C

**Materials**

◆ Cover	RoHS&REACH Compliant.....	Thermoplastic UL 94 rate, Black
	Halogen Free.....	Thermoplastic UL 94 rate, Coffee
◆ Base	RoHS&REACH Compliant.....	Thermoplastic UL 94 rate, Black
	Halogen Free.....	Thermoplastic UL 94 rate, Coffee
◆ Actuator	.....	Thermoplastic UL 94 rate, White
◆ Movable Contact	Standard.....	Gold-Plated
	E type.....	Tin-Plated
◆ Terminal Contact	Standard.....	Gold-Plated
	E type.....	Tin-Plated
◆ Terminal	Standard.....	Gold-Plated
	E type.....	Tin-Plated
◆ Tape	.....	Polyimide Film

<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-002	Page
<b>SO series</b> <b>Half Pitch Type</b>			2/4

## Soldering Information

### ◆ Hand Soldering

Soldering iron 30W(or under) at 300°C (max.) for 4sec. +/- 1sec.

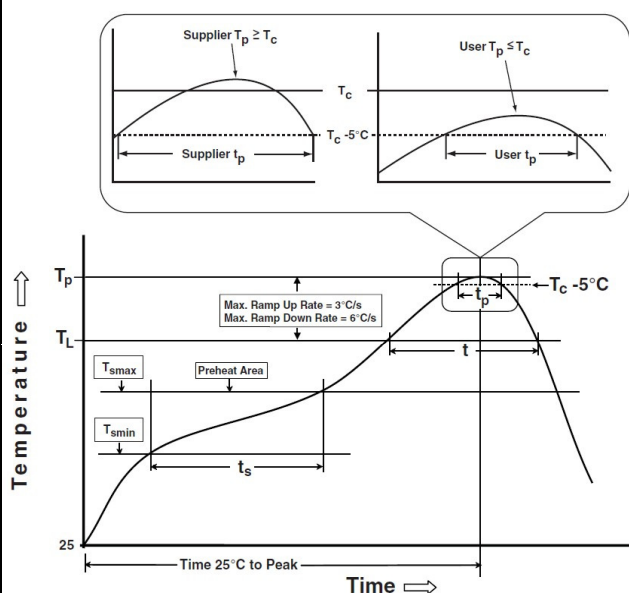
### ◆ Reflow Soldering

- (1) Gold-plated series available 2~3 times process
- (2) Tin-plated series available 1 time process
- (3) Vapor Phase Heating (VPH) switch must with Tape sealed type

### The table copy from IPC/JEDEC J-STD-020 D.1

Profile Feature	Pb-Free Assembly
<b>Preheat / Soak</b>	
Temperature Min ( $T_{smin}$ )	150°C
Temperature Max ( $T_{smax}$ )	200°C
Time( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60 ~120 seconds
Ramp-up Rate ( $T_L$ to $T_p$ )	3°C/second max
Liquidous temperature ( $T_L$ )	217°C
Time ( $t_L$ ) maintained above to $T_L$	60 ~ 150 seconds
Peak package body temperature ( $T_p$ )	For users $T_p$ must not exceed the Classification temp:250°C (Package Thickness>2.5mm) For suppliers $T_p$ must equal or exceed the Classification temp:250°C (Package Thickness>2.5mm)
Time ( $t_p$ ) within 5°C of specified classification temperature ( $T_c$ )	30 seconds
Ramp-Down Rate ( $T_p$ to $T_L$ )	6°C/second max
Time 25°C to Peak Temperature	8 minutes max
* Tolerance for peak profile temperature( $T_p$ ) is defined as a supplier minimum and a user maximum	

### Classification Reflow Soldering Profiles



Note 1: All temperatures refer to topside of the package, measured on the package body surface.

Note 2: Time within 5 °C of actual peak temperature ( $t_p$ ) specified for the reflow profiles is a "supplier" minimum and "user" maximum.

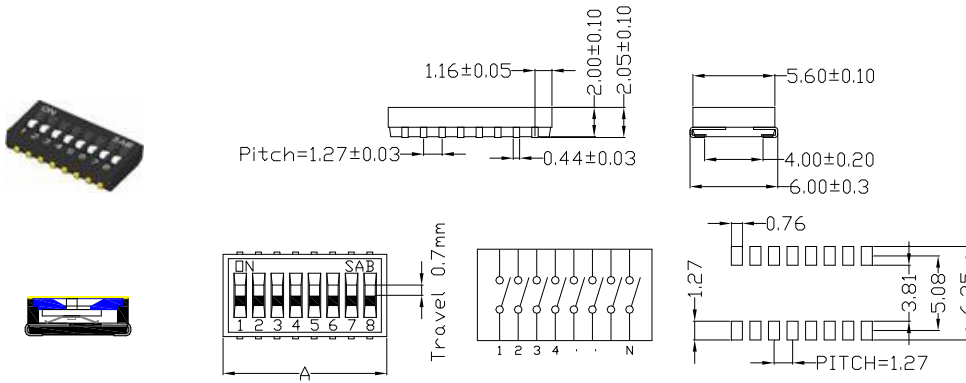
## Switch Operation and Taping

- (1) Use tweezers or ball-point pen for operation.
- (2) Flux cleaning should be done without removing the Tape.
- (3) If the tape is removed, it adheres less than before when it is placed back on, possibly causing flux inflow
- (4) Do Not Remove Tape sealed before Reflow processing
- (5) Ultrasonic cleaning not recommended without Tape sealed.

✘ Any flux enters the switch may influence contact function.

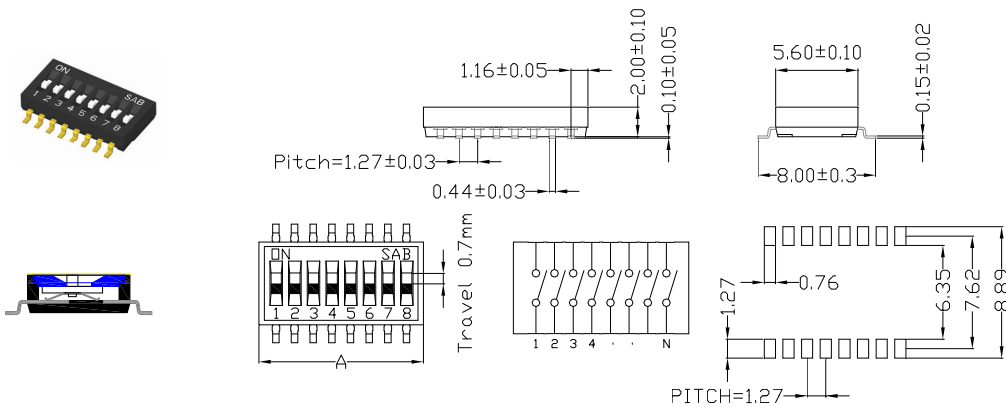
<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	<b>SP-003</b>	Page
<b>SO series</b> <b>Half Pitch Type</b>			3/4

### SOJ



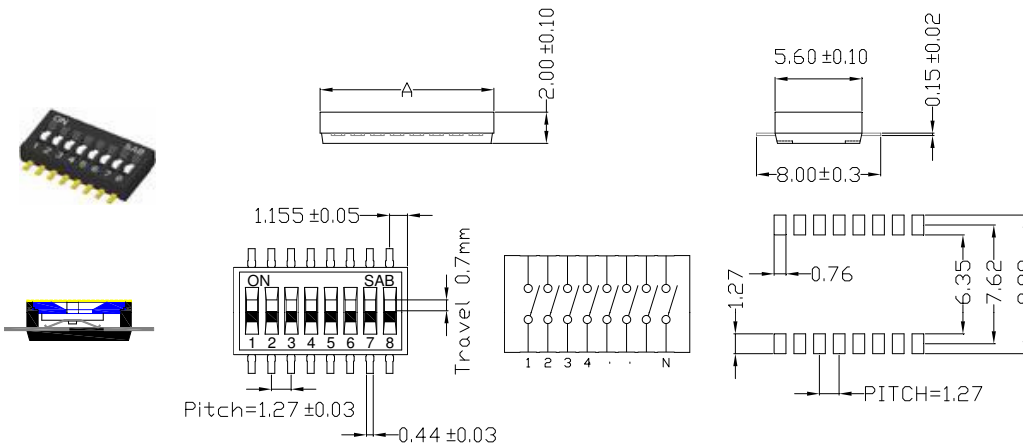
No. Pos.	Dim. "A"
1	2.31
2	3.58
3	4.85
4	6.12
5	7.39
6	8.66
8	11.20
10	13.74
12	16.28

### SOP



No. Pos.	Dim. "A"
1	2.31
2	3.58
3	4.85
4	6.12
5	7.39
6	8.66
8	11.20
10	13.74
12	16.28

### SOF



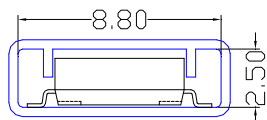
No. Pos.	Dim. "A"
1	2.31
2	3.58
3	4.85
4	6.12
5	7.39
6	8.66
8	11.20
10	13.74
12	16.28

<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-004	Page
<b>SO series</b> <b>Half Pitch Type</b>			4/4

### Tube Package

#### ◆ SOP

POLE	1	2	3	4	5	6	8	10	12
TUBE	93(half)	125	90	70	60	50	40	30	25
BOX	18600	25000	18000	14000	12000	10000	8000	6000	5000
CTN 1	37200	50000	36000	28000	24000	20000	16000	12000	10000

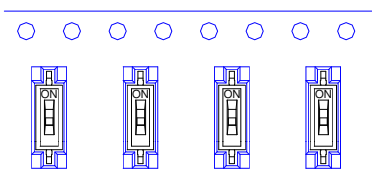


### Tape & Reel Package

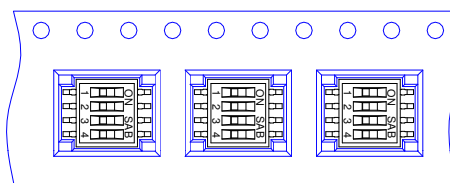
#### ◆ SOP/SOJ/SOF

POLE	01	02	03	04	05	06	08	10	12
Pitch (mm)	8	8	8	12	12	12	12	12	12
Width (mm)	16	16	16	16	16	16	24	24	24
per Reel	3000	3000	3000	2000	2000	2000	2000	2000	2000

SOP/SOJ01~03



SOP04~SOP12



### Box Dimension

- ◆ Tube ..... 57.0cm x 13.0cm x 12.5cm
- ◆ Tape & Reel ..... 34.5cm x 34.5cm x 15.0cm

### Carton Dimension

- ◆ Tube
  - 2 Boxes..... 58.5cm x 29.0cm x 15.0cm
  - 4 Boxes..... 58.5cm x 28.0cm x 27.0cm
- ◆ Tape & Reel
  - 1 Box..... 34.5cm x 34.5cm x 15.0cm
  - 2 Boxes..... 36.0cm x 27.5cm x 37.0cm