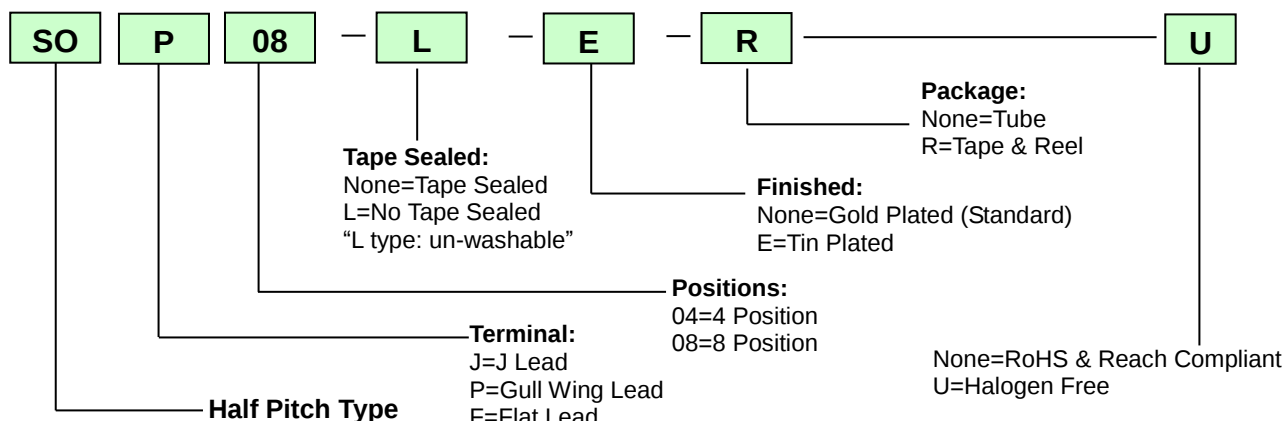


MODEL	SPECIFICATION DIP SWITCH RoHS & REACH Compliant / Halogen Free	SP-001	Page
SO series			1/9
Half Pitch Type			

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 500VDC
◆ Dielectric Strength	300VAC / 1 minute
◆ Operating Force	500g Max
◆ Travel	0.7mm
◆ Mechanical Life	 2,000 cycles (Min.)
◆ Electrical Life	 1,000 cycles/ 25mA, 24VDC
◆ Operating Temperature	-40°C ~ +105°C
◆ Storage Temperature	-40°C ~ +85°C

Recommended Soldering Information

- ◆ **Hand Soldering**
Soldering iron of 30W or under at 300°C for 4±1 sec. max.
- ◆ **Reflow Soldering**
Peak temperature: 260°C max. The time above 255°C must be 30 sec. max.
(1) Gold-plated types allow 2~3-time reflow process.
(2) Tin-plated types allow 1-time process only.
(3) For Vapor Phase Heating (VPH) use, the switch must be tape-sealed.
- ◆ **Keep all actuators in “OFF” position during soldering and cleaning processes.**
- ◆ **As the natural characteristic of white plastic, actuators shall become ivory color after soldering.**

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Half Pitch Type			

Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat / Soak	
Temperature Min (T_{Smin})	150°C
Temperature Max (T_{Smax})	200 °C
Time(ts) 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 abvoe to T_L	60 ~ 150 seconds
Peak package body temperature (T_p)	For users T_p must not exceed the Classification temp:260°C (Package Thickness:1.6~2.5mm) Reference Table 4-2 For supilers T_p must equal or exceed the Classification temp:260°C (Package Thickness:1.6~2.5mm) Reference Table 4-2
Time (tp) 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	

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

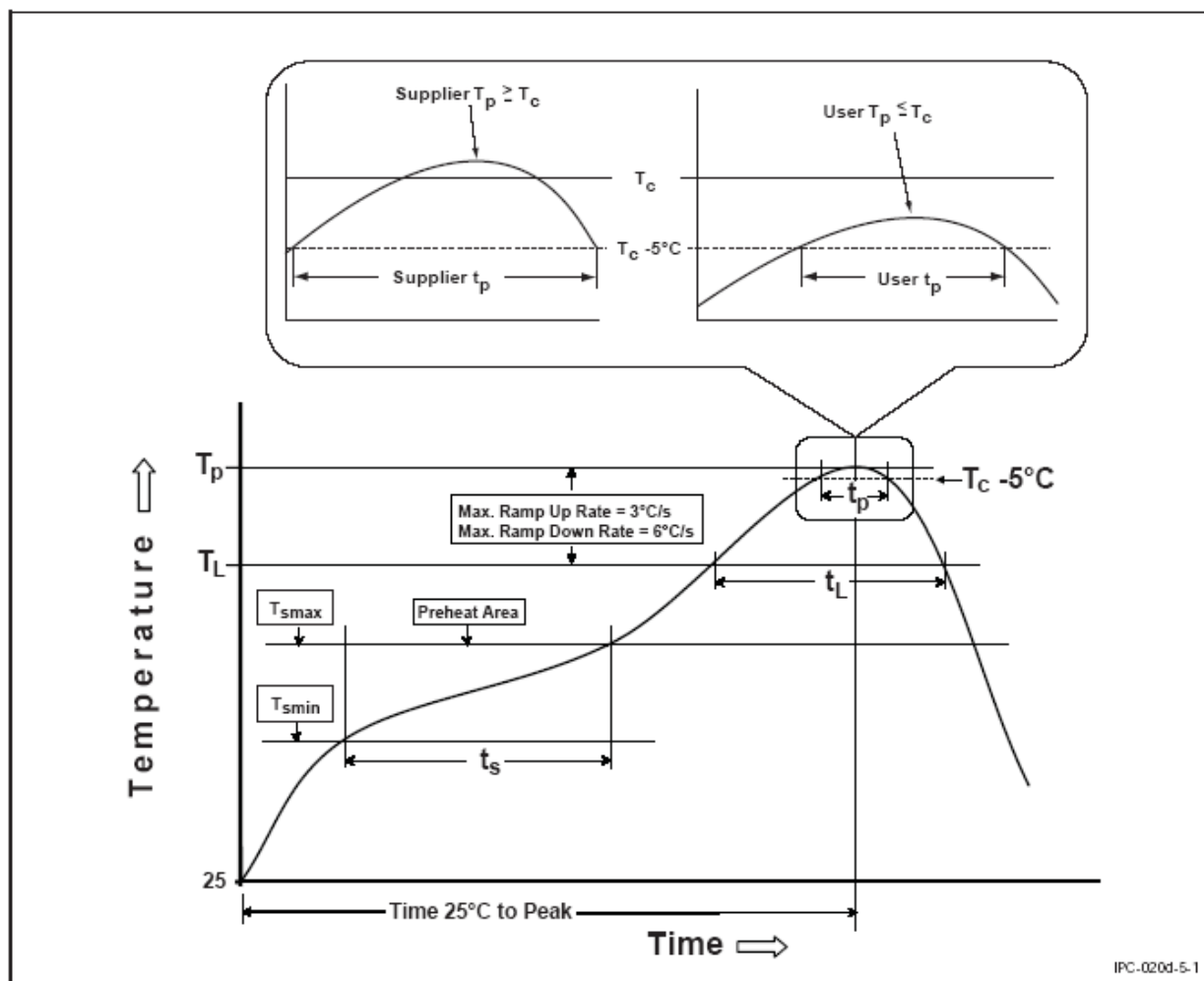
Note 2: Time within 5°C of actual peak temperature (tp) specified for the reflow profiles is a “supplier” minimum and “user” maximum.

Table 4-2 Pb-Free Process - Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

MODEL	SPECIFICATION DIP SWITCH RoHS & REACH Compliant / Halogen Free	SP-003	Page
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Half Pitch Type			

Recommended Reflow Soldering Conditions



Source: IPC/JEDEC J-STD-020D.1

MODEL	SPECIFICATION DIP SWITCH RoHS & REACH Compliant / Halogen Free	SP-004	Page
SO series			4/9
Half Pitch Type			

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.

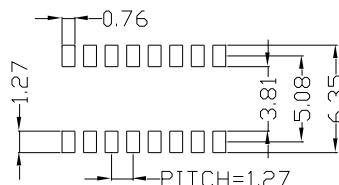
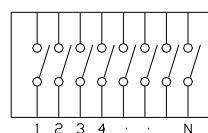
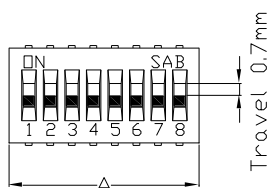
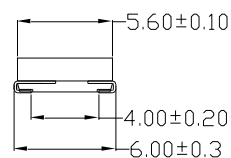
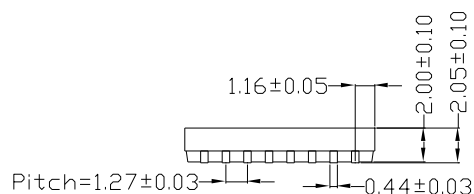
- ※ All switches must set in OFF position when through Soldering process.
- ※ Any flux enters the switch may influence contact function.

Materials

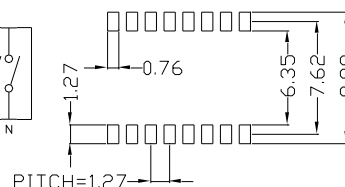
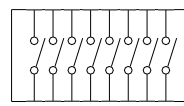
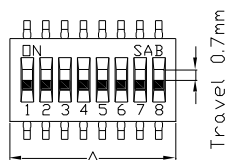
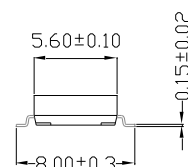
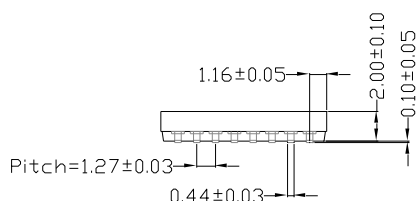
◆ Cover	RoHS&REACH Compliant.....Thermoplastic UL 94V-0, Black Halogen Free.....Thermoplastic UL 94-HB, Coffee
◆ Base	RoHS&REACH Compliant.....Thermoplastic UL 94V-0, Black Halogen Free.....Thermoplastic UL 94-HB, Coffee
◆ Actuator	Thermoplastic UL 94-HB, White
◆ Movable Contact	E type.....Cooper Alloy, Tin-Plated over Nickel Standard.....Cooper Alloy, Gold-Plated over Nickel
◆ Terminal Contact	E type.....Cooper Alloy, in-Plated over Nickel Standard.....Cooper Alloy, Gold-Plated over Nickel
◆ Terminal	E type.....Cooper Alloy, Tin-Plated over Nickel Standard..... Cooper Alloy, Gold-Plated over Nickel
◆ Tape	Polyimide Film

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SO series			5/9
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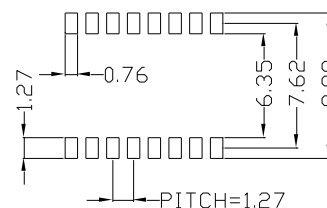
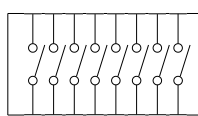
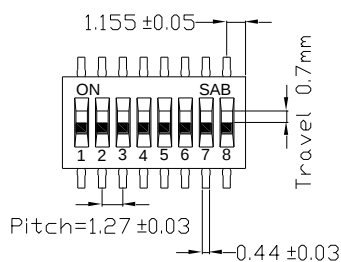
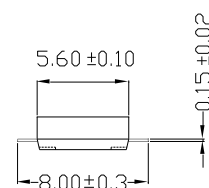
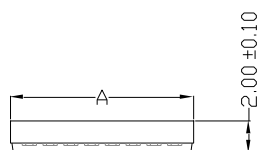
SOJ



SOP



SOF



MODEL	SPECIFICATION DIP SWITCH RoHS & REACH Compliant / Halogen Free	SP-006	Page
SO series			6/9
Half Pitch Type			

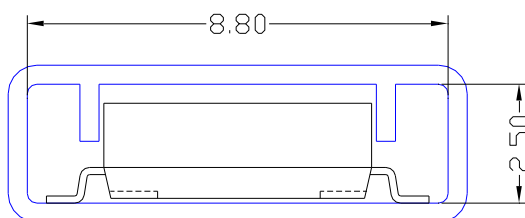
Part Number Table

No. Pos.	Dim. "A"	SMD Gold Plated Tape Sealed Tube Package	J Lead Tin Plated Tape Sealed Tape Reel	Flat Lead Gold Lead Tape Sealed Tape Reel
1	2.31	SOP01	SOJ01E-R	SOF01-R
2	3.58	SOP02	SOJ02E-R	SOF02-R
3	4.85	SOP03	SOJ03E-R	SOF03-R
4	6.12	SOP04	SOJ04E-R	SOF04-R
5	7.39	SOP05	SOJ05E-R	SOF05-R
6	8.66	SOP06	SOJ06E-R	SOF06-R
8	11.20	SOP08	SOJ08E-R	SOF08-R
10	13.74	SOP10	SOJ10E-R	SOF10-R
12	16.28	SOP12	SOJ12E-R	SOF12-R

Tube Package

POLE	1	2	3	4	5	6	8	10	12
TUBE	93(half)	120	90	70	60	50	40	30	25
BOX	18600	24000	18000	14000	12000	10000	8000	6000	5000
CTN 1	37200	48000	36000	28000	24000	20000	16000	12000	10000

SOP



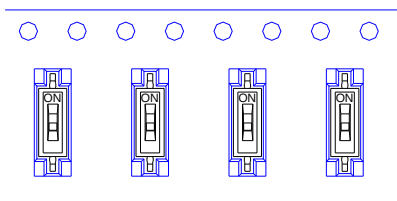
MODEL	SPECIFICATION DIP SWITCH RoHS & REACH Compliant / Halogen Free	SP-007	Page
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Half Pitch Type			

Tape & Reel package

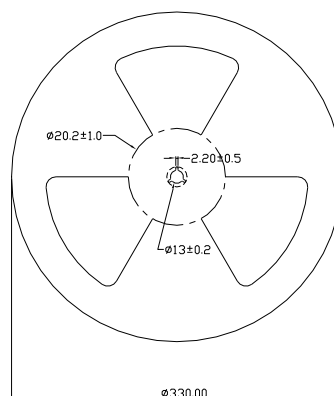
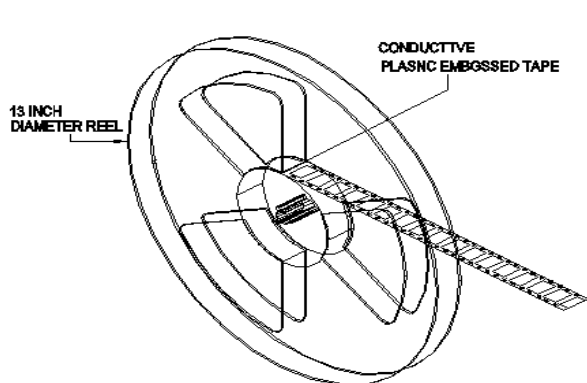
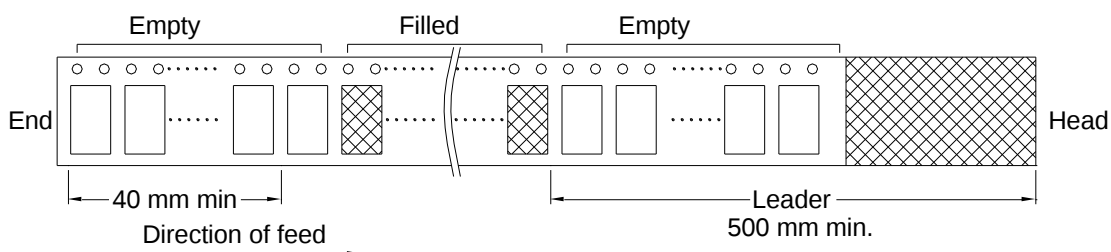
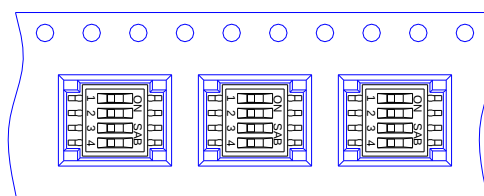
◆ SOP/SOJ/SOF

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

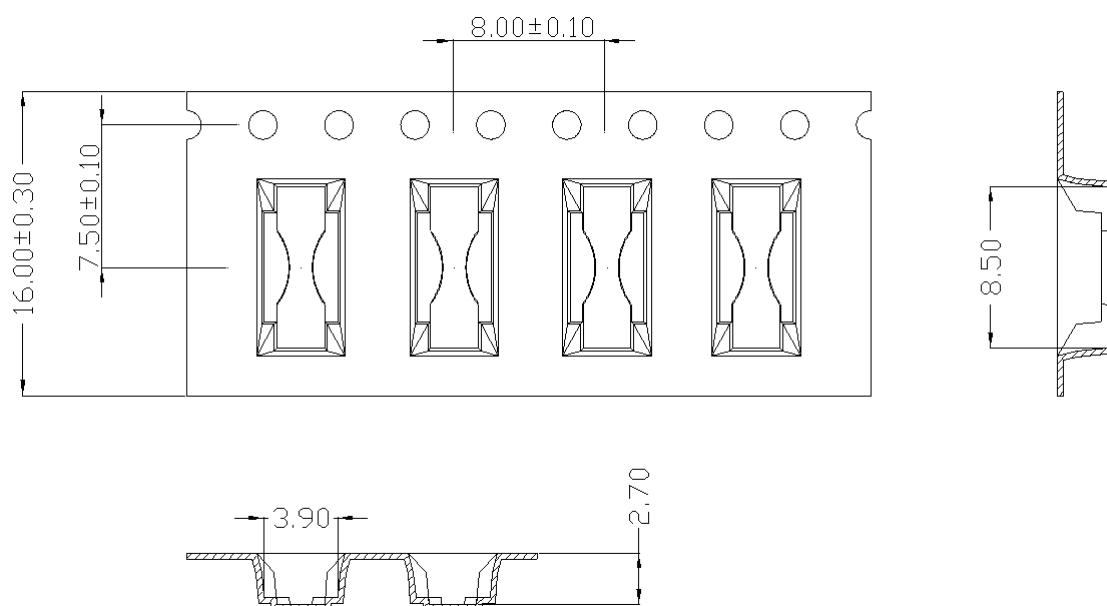


MODEL	SPECIFICATION DIP SWITCH RoHS & REACH Compliant / Halogen Free	SP-008	Page
SO series			8/9
Half Pitch Type			

Carry Tape Table

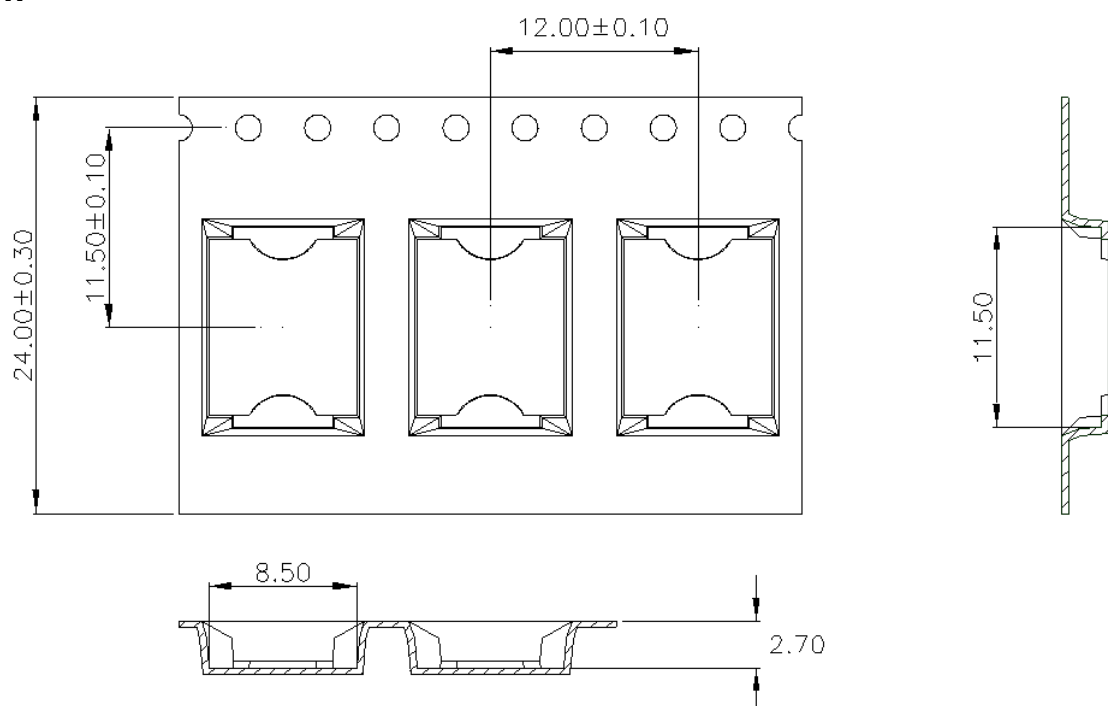
P/N	Pitch(mm)	Thickness(mm)	Width(mm)	Sellotape(mm)	@REEL/BOX	Q'ty/Reel
SOP/J01	8	0.3	16	13.3	6	3000
SOP/J02	8	0.3	16	13.3		3000
SOP/J03	8	0.3	16	13.3		3000
SOP/J04	12	0.3	16	13.3		2000
SOP/J05	12	0.3	16	13.3		2000
SOP/J06	12	0.3	16	13.3		2000
SOP/J08	12	0.3	24	21.3	4	2000
SOP/J10	12	0.3	24	21.3		2000
SOP/J12	12	0.3	24	21.3		2000

16mm



MODEL	SPECIFICATION DIP SWITCH RoHS & REACH Compliant / Halogen Free	SP-009	Page
SO series			9/9
Half Pitch Type			

24mm



Box Dimension

◆ Tube		56.5cm x 12.8cm x 12.3cm
◆ Tape & Reel		34.2cm x 34.2cm x 14.0cm

Carton Dimension:

◆ Tube	2 Boxes.....	58.0cm x 28.0cm x 14.5cm
	4 Boxes.....	58.0cm x 28.0cm x 26.0cm
◆ Tape & Reel	1 Box.....	34.2cm x 34.2cm x 14.0cm
	2 Boxes.....	36.0cm x 27.5cm x 37.0cm