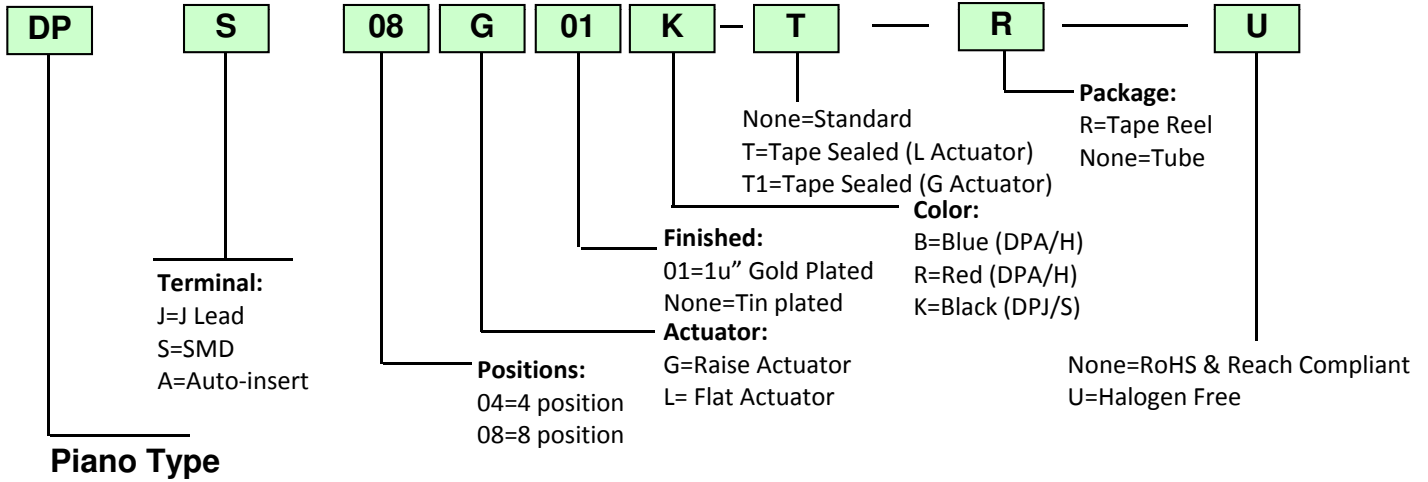


<b>MODEL</b>	<b>SPECIFICATION</b>		Page
<b>DP series</b> <b>Piano Type</b>	<b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-001	1/4

**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	.....	500VDC/ 1 mintue
◆ Operating Force	.....	1,000g/max
◆ Mechanical Life	1u" Gold Plated.....	3,000 cycles (Min.)
	Tin Plated.....	2,000 cycles (Min.)
◆ Electrical Life	1u" Gold Plated.....	2,000 cycles /25mA, 24VDC
	Tin Plated.....	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/ Red/ Blue
	Halogen Free..... Thermoplastic UL 94 rate, Black/ Red/ Blue
◆ Base	RoHS&REACH Compliant.. Thermoplastic UL 94 rate, Black
	Halogen Free..... Thermoplastic UL 94 rate, coffee
◆ Actuator	..... Thermoplastic UL 94 rate, White
◆ Movable Contact	E type..... Tin-Plated
	01 type..... Gold-Plated
◆ Terminal Conatct	E type..... Tin-Plated
	01 type..... Gold-Plated
◆ Terminal	E type..... Tin-Plated
	01 type..... Gold-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
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### Soldering Information

#### ◆ Hand Soldering

Soldering iron 30W or under at 350°C for 3 sec. max. or at 270°C for 5 sec. max.

#### ◆ 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

#### ◆ Wave Soldering

- (1) For lead free wave solder simulation of typical components, the solder bath temperature shall be maintained to 270°C / 5~10 seconds.

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	

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

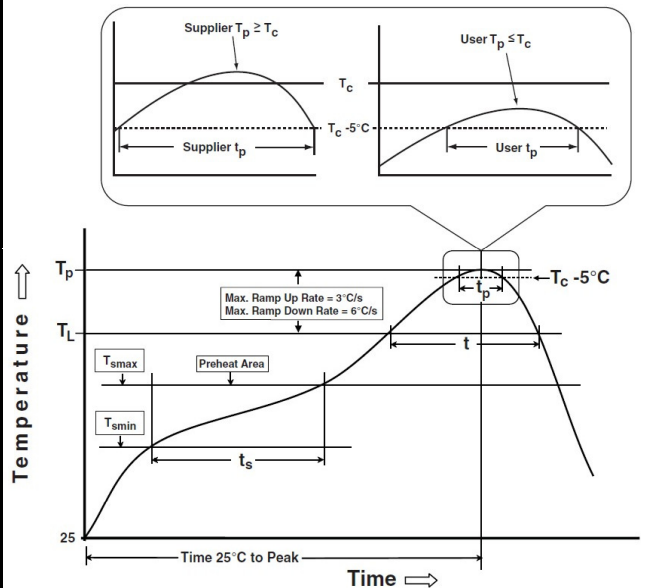
Note 2: Time within 5 °C of actual peak temperature ( $t_p$ ) specified for the reflow profiles is a "supplier" minimum and "user" maximum.

### Switch Operation and Taping

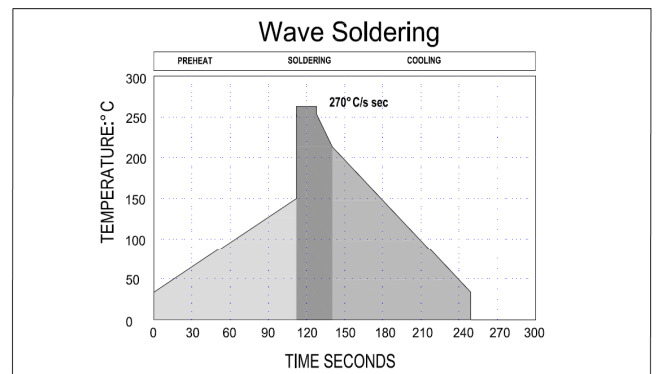
- (1) Use tweezers for operation
- (2) Flux cleaning should be done without removing the Tape.
- (3) If the tape is removed, it adheres less than before when it is placed back on, possibly causing flux inflow.
- (4) Do Not Remove Tape sealed before Reflow processing.
- (5) Ultrasonic cleaning not recommended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

✳ Any flux enters the switch may influence contact function.

### Classification Reflow Soldering Profiles



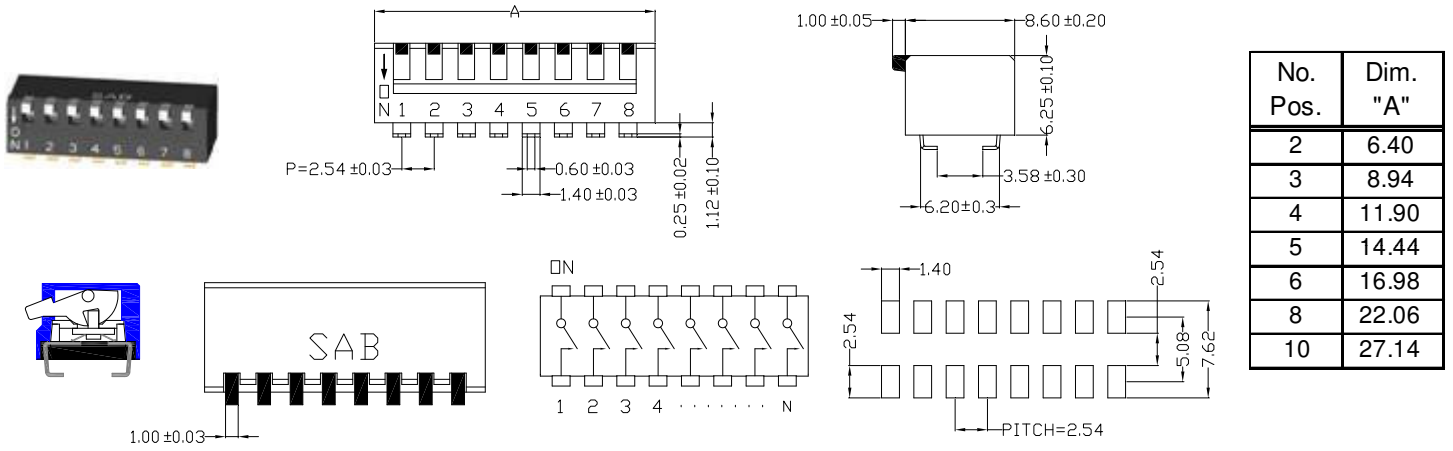
### Classification Wave Soldering Profiles



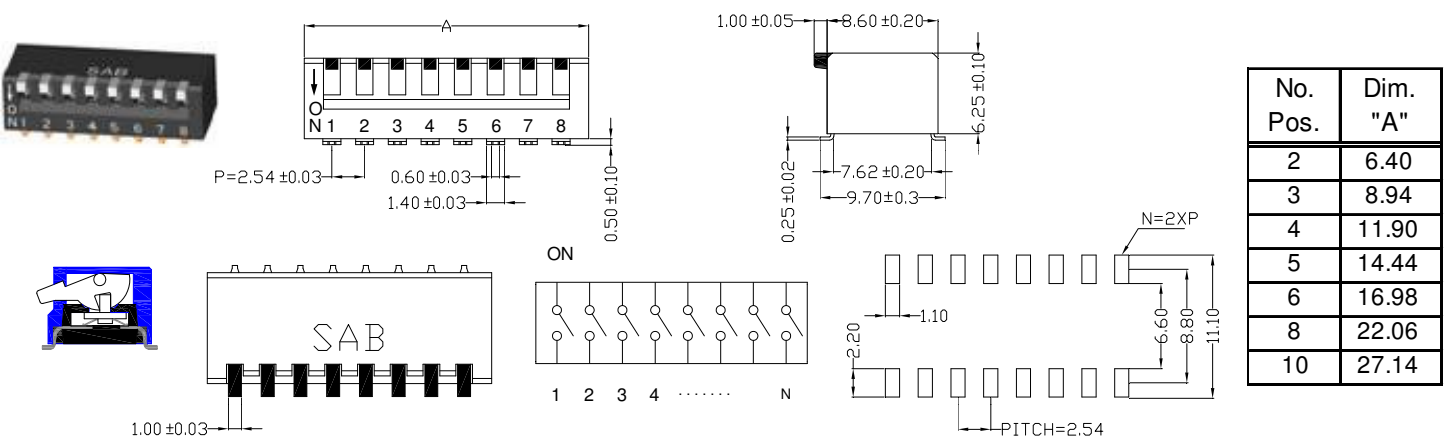
**Maximum dwell time in the solder wave (270°C) shall not exceed 5 seconds.**

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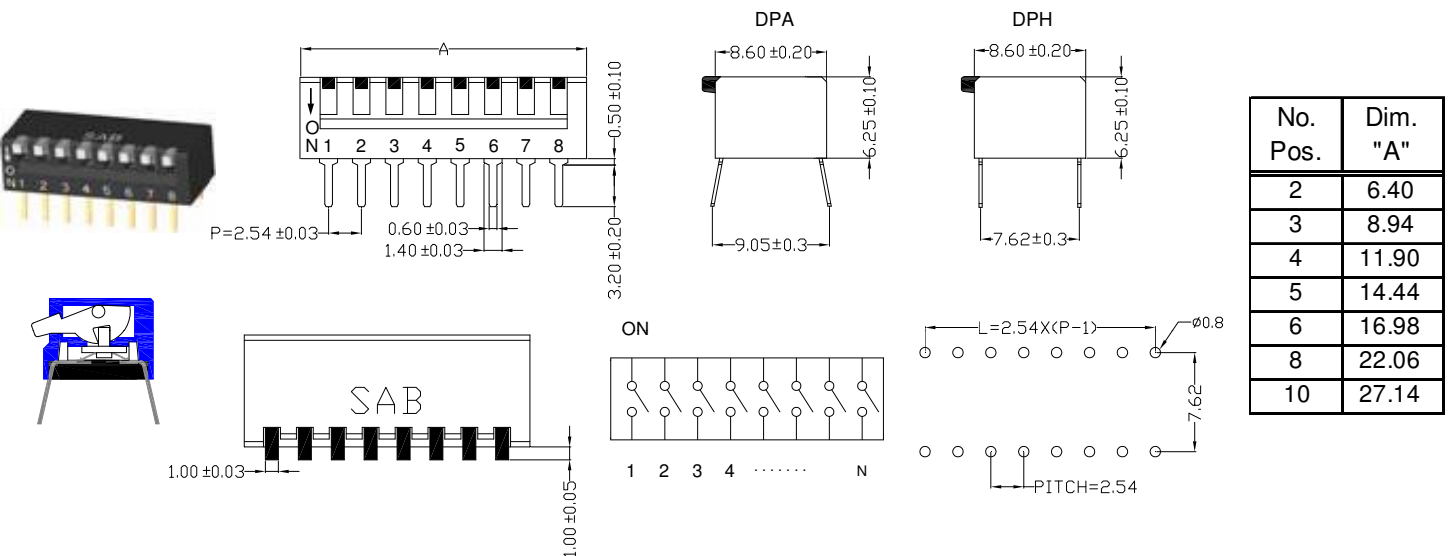
### DPJ



### DPS



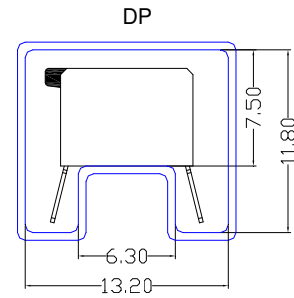
### DPA/H



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### Tube Package

POLE	2	3	4	5	6	8	10
TUBE	85	61	44	38	32	24	19
BOX	4760	3416	2464	2128	1792	1344	1064
CTN 1	9520	6832	4928	4256	3584	2688	2128
CTN 2	19040	13664	9856	8512	7168	5376	4256

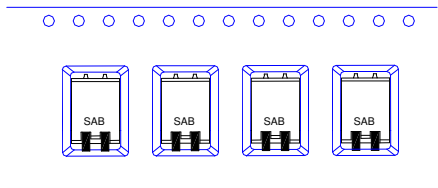


### Tape & Reel Package

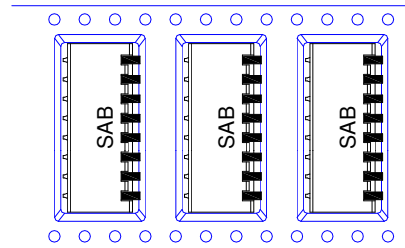
#### ◆ DPS/DPJ

POLE	02	03	04	05	06	08	10
Pitch (mm)	12	16	16	16	16	16	16
Width (mm)	24	24	24	24	32	44	44
Per Reel	700	500	500	500	500	500	500

DPS02



DPS03~DPS12



### 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