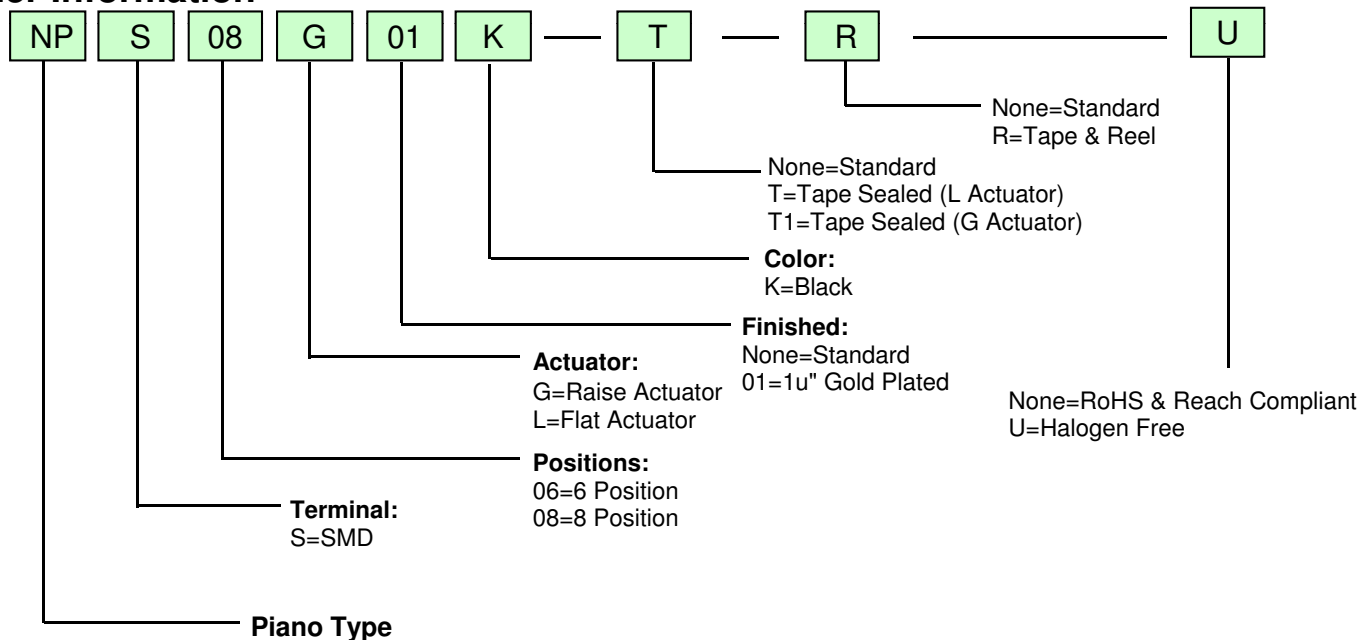


<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-001	Page
<b>NPS series</b> <b>New Piano Type</b>			1/3

### 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	..... <b>5,000 cycles (Min.)</b>
◆ Electrical Life	..... <b>2,000 cycles /25mA, 24VDC</b>
◆ Operating Temperature	.....-40°C ~ +105°C
◆ Storage Temperature	.....-40°C ~ +105°C

### Materials

◆ Cover	Halogen Free..... Thermoplastic UL 94 rate, Black
◆ Base	Halogen Free..... Thermoplastic UL 94 rate, Black
◆ Actuator	Halogen Free..... Thermoplastic UL 94 rate, White
◆ Contact	..... Gold plated
◆ Terminal	Standard..... 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.

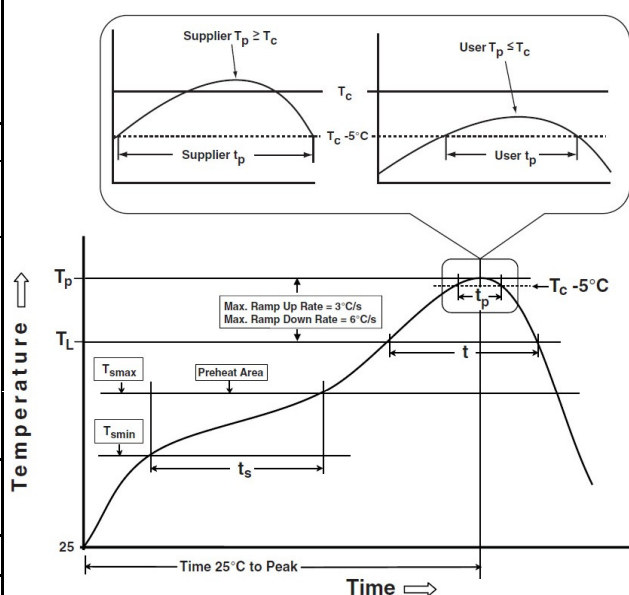
### ◆ Reflow Soldering

- (1) Gold-plated series available 2~3 times process
- (2) 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

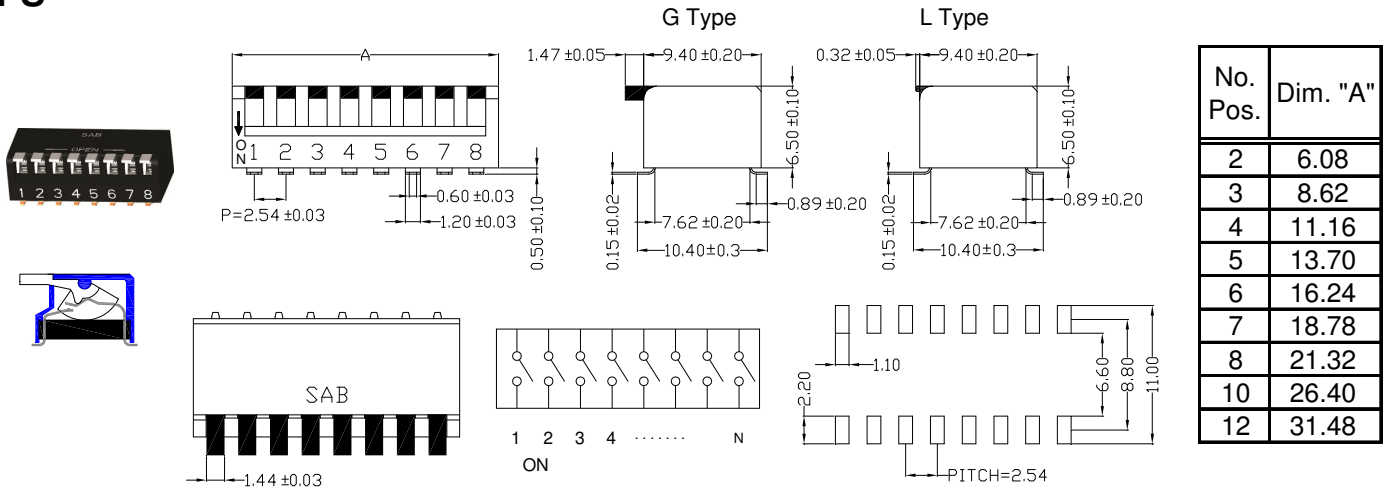
- (1) Use tweezers for operation.
- (2) Flux cleaning should be done without removing the Tape.
- (3) If the tape is removed, it adheres less than before when it is placed back on, possibly causing flux inflow.
- (4) Do Not Remove Tape sealed before Reflow processing.
- (5) Ultrasonic cleaning not recommended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

✳ **All switches must set in OFF position when through Soldering process.**

✳ **Any flux enters the switch may influence contact function.**

<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	Page
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### NPS



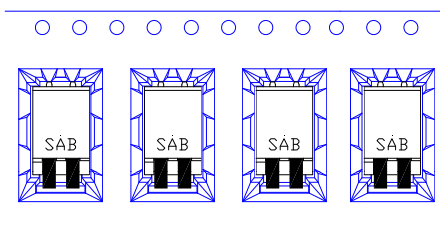
### Tube Package

POLE	2	3	4	5	6	7	8	10	12
TUBE	85	61	47	38	32	28	24	20	16
BOX	4760	3416	2632	2128	1792	1568	1344	1120	896
CTN 1	9520	6832	5264	4256	3584	3136	2688	2240	1792
CTN 2	19040	13664	10528	8512	7168	6272	5376	4480	3584

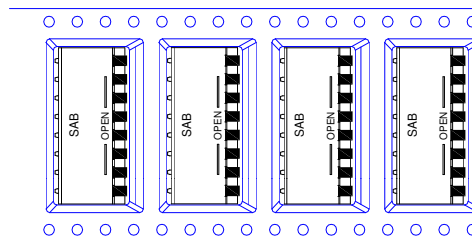
### Tape & Reel package

POLE	02	03	04	05	06	07	08	10	12
Pitch (mm)	12	16	16	16	16	16	16	16	16
Width (mm)	24	24	24	24	24	44	44	44	44
Per Reel	700	500	500	500	500	500	500	500	500

NPS02



NPS03~NPS12



### 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