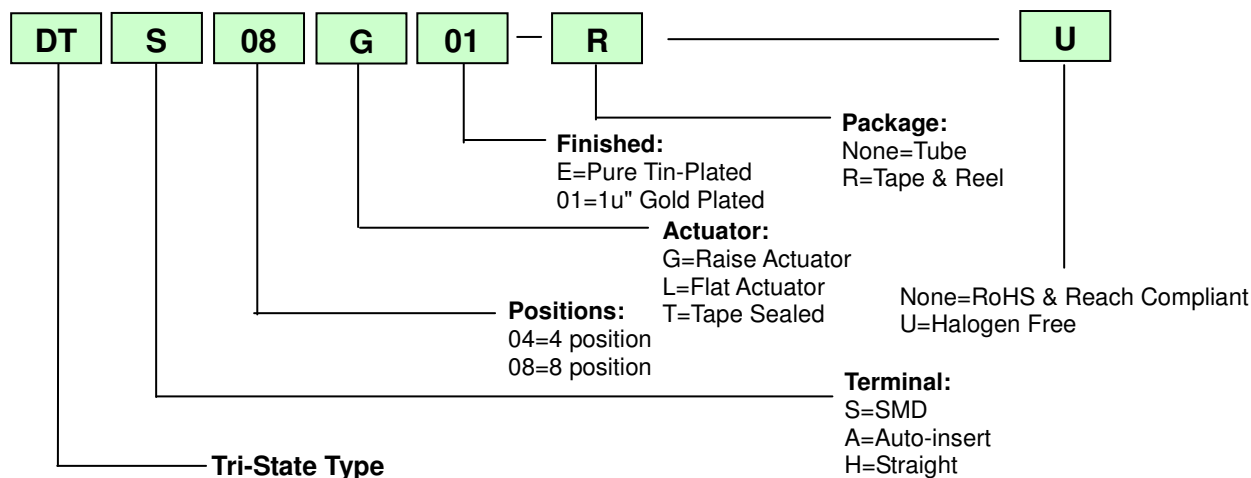


MODEL	SPECIFICATION DIP SWITCH RoHS&REACH Compliant / Halogen Free	SP-001	Page
DT series Tri-State Type			1/7

## 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 .....500VDC / 1 minute
- ◆ Operating Force .....1,000g max
- ◆ Travel .....0.9mm
- ◆ Mechanical Life
  - Tin-plated.....**3,000 cycles (Min.)**
  - Gold-plated.....**5,000 cycles (Min.)**
- ◆ Electrical Life .....**2,000 cycles / 25mA, 24VDC**
- ◆ Operating Temperature
  - SMD.....-40°C ~ +105°C
  - THT.....-40°C ~ +85°C
- ◆ Storage Temperature .....-40°C ~ +85°C
- ◆ **Hand Soldering:** Soldering iron of 30W or under at 350°C for 3 sec. max or at 270°C for 5 sec. max.
- ◆ **Reflow Soldering:** (1) Gold-plated types allow 2~3-time process.  
 (2) Tin-plated types allow 1-time process only.  
 (3) For Vapor Phase Heating (VPH) [use](#), the switch must be tape-sealed.
- ◆ **Wave Soldering:** (1) For lead free wave solder simulation of typical components, the solder bath temperature shall be maintained at 270°C max./ 5~10 seconds.
- ◆ **Keep all actuators in "OFF" position during soldering and cleaning processes.**

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### Classification Reflow Profiles

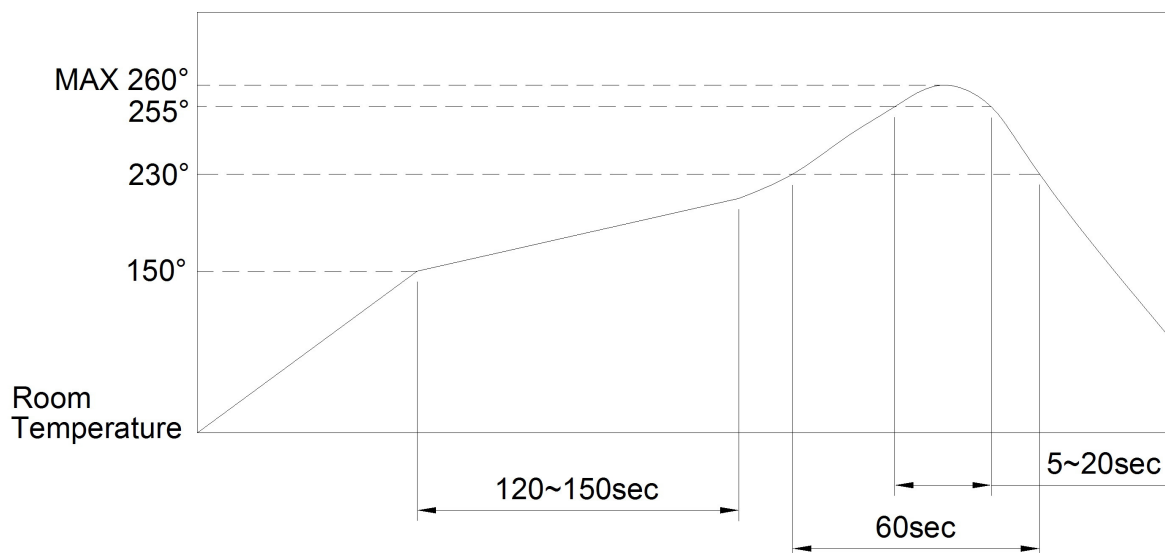
Profile Feature	Pb-Free Assembly
<b>Preheat / Soak</b>	
Temperature Min ( $T_{smin}$ )	150°C
Temperature Max ( $T_{smax}$ )	200°C
Time(ts) from ( $T_{smin}$ to $T_{smax}$ )	60 ~ 120 seconds
Ramp-up Rate ( $T_L$ to $T_p$ )	3°C/second max
Liquidous temperature ( $T_L$ )	217°C
Time ( $t_L$ ) maintained 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:>2.5mm) For supilers $T_p$ must equal or exceed the Classification temp:260°C (Package Thickness:>2.5mm)
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.

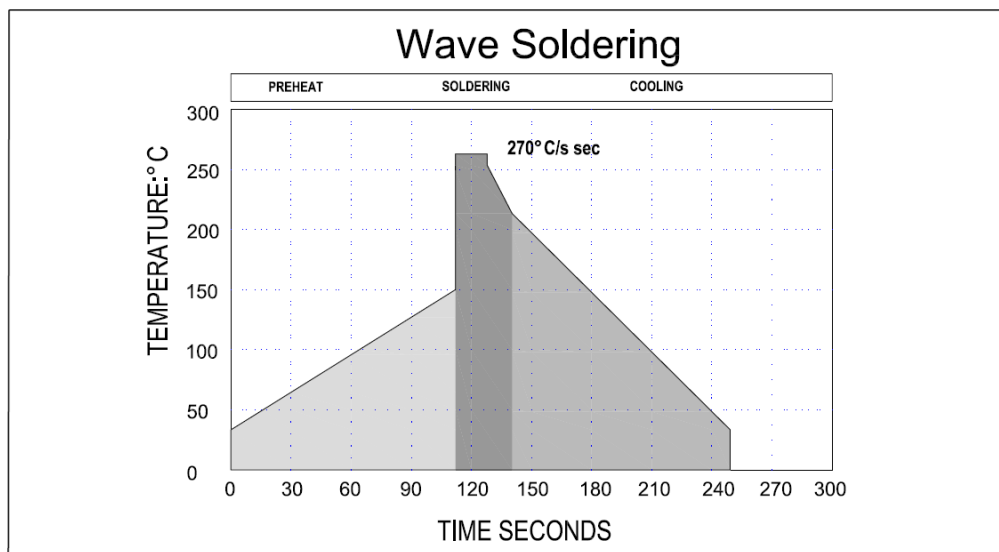
Sources: IPC/JEDEC J-STD-020D.1

### Recommended Reflow Soldering Conditions



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### Recommended Wave Soldering Profiles



**Maximum dwell time in the solder wave (270°C) shall not exceed 10 seconds.**

### 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.

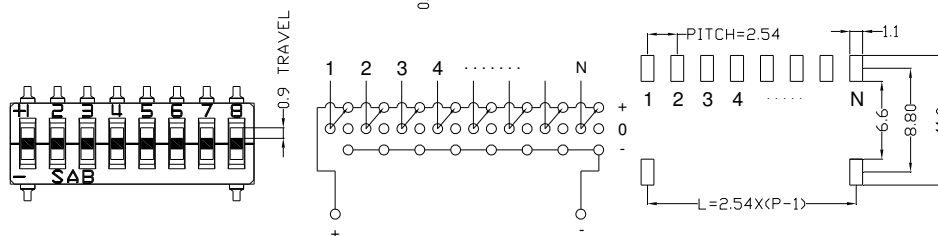
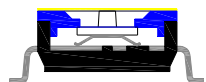
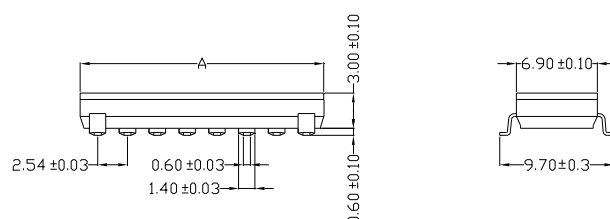
- ※ All switches must set in OFF position when through Soldering process.
- ※ Any flux enters the switch may influence contact function.

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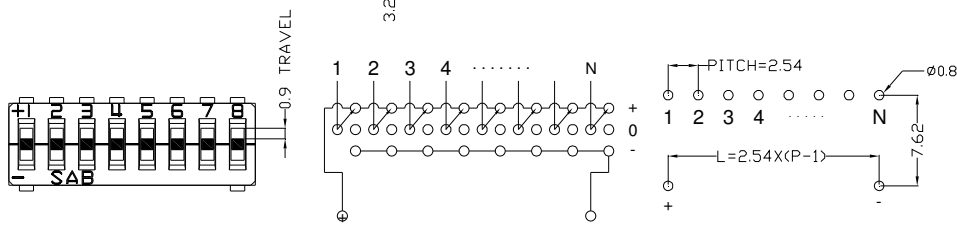
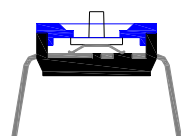
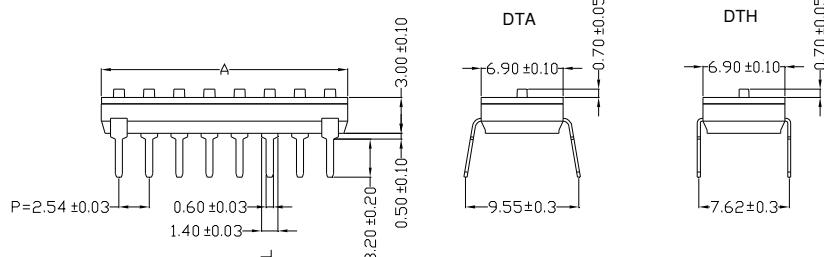
## Materials

◆ 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
◆ Terminal Contact	E type.....40u" +/-10u" Nickel Cover (Pure) Tin-Plated 01 type.....40u" +/-10u" Nickel Cover 1u" Gold-Plated
◆ Movable Contact	E type.....40u" +/-10u" Nickel Cover (Pure) Tin-Plated 01 type.....40u" +/-10u" Nickel Cover 1u" Gold-Plated
◆ Terminal	E type.....40u" +/-10u" Nickel Cover (Pure) Tin-Plated 01 type.....40u" +/-10u" Nickel Cover 1u" Gold-Plated
◆ Tape	.....Polyimide Film

## DTS



## DTA/H



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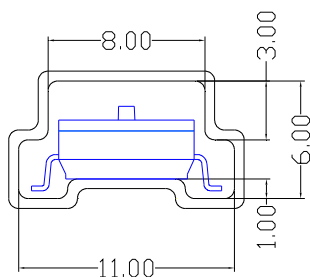
### Part Number Table

No. Pos.	Dim. "A"	Thru-hole Tin Lead Raise Actuator Tube Package	Thru-hole 1u" Gold Lead Raise Actuator Tube Package	SMD 1u" Gold Lead Tape Sealed Tube Package
4	10.60	DTH04GE	DTA04G01	DTS04T01
6	15.68	DTH06GE	DTA06G01	DTS06T01
7	18.22	DTH07GE	DTA07G01	DTS07T01
8	20.76	DTH08GE	DTA08G01	DTS08T01
9	23.30	DTH09GE	DTA09G01	DTS09T01
10	25.84	DTH10GE	DTA10G01	DTS10T01
12	30.92	DTH12GE	DTA12G01	DTS12T01

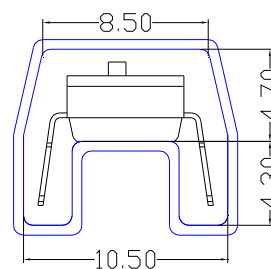
### Tube Package:

POLE	2	3	4	6	7	8	9	10	12
TUBE	95	65	48	33	28	25	22	20	17
BOX	9500	6500	4800	3300	2800	2500	2200	2000	1700
CTN 1	19000	13000	9600	6600	5600	5000	4400	4000	3400
CTN 2	38000	26000	19200	13200	11200	10000	8800	8000	6800

#### DTS



#### DTA/H



### Box Dimension

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

### Carton Dimension

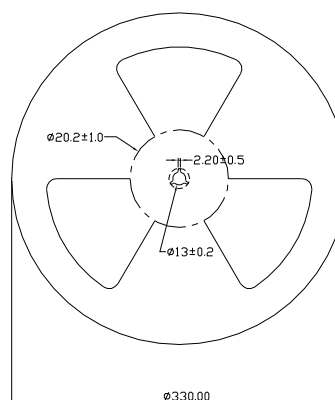
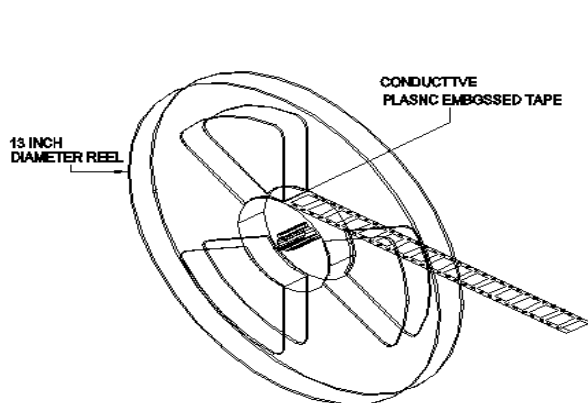
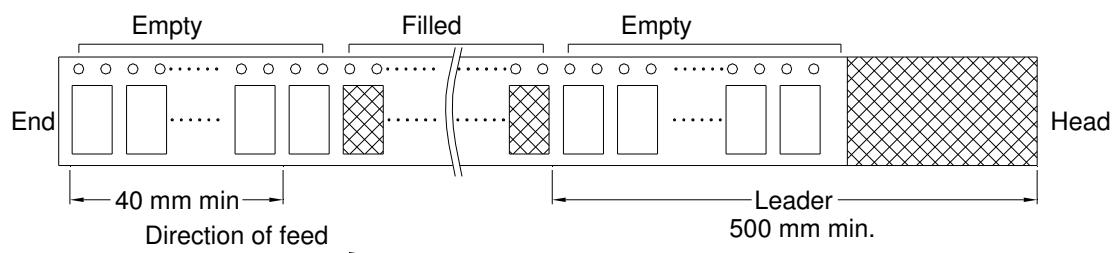
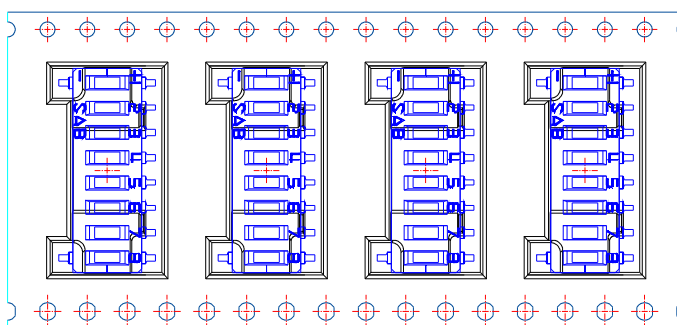
- ◆ Tube
  - 2 Boxes.....58.5cm x 29.0cm x 15.0cm
  - 4 Boxes.....58.5cm x 28.0cm x 27.0cm
- ◆ Tape & Reel
  - 1 Box.....34.5cm x 34.5cm x 15.0cm
  - 2 Boxes.....36.0cm x 27.5cm x 37.0cm

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## Tape & Reel package

### ◆ DTS

POLE	02	03	04	06	07	08	09	10	12
Pitch (mm)	16	16	16	16	16	16	16	16	16
Width (mm)	16	16	24	24	32	32	44	44	44
REEL	1500	800	800	800	800	750	800	800	800

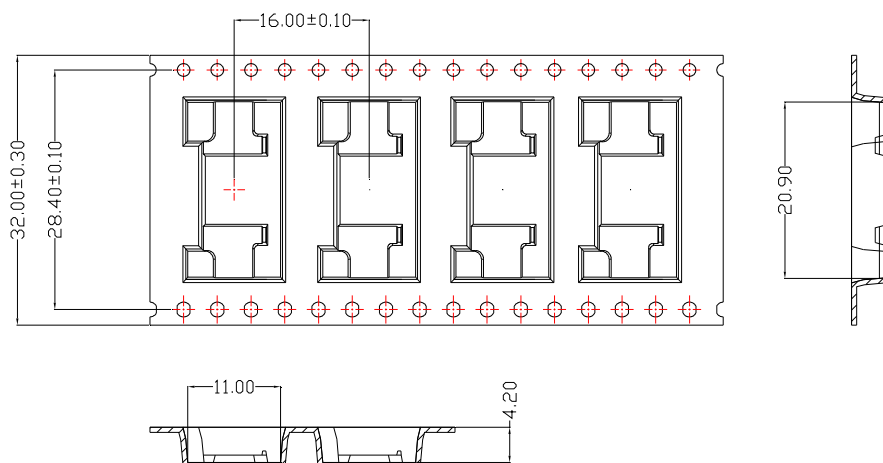


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### Carry Tape Table

P/N	Pitch(mm)	Thickness(mm)	Width(mm)	Sellotape(mm)	@REEL/BOX	Q'ty/Reel
DTS04	16	0.35	24	21.3	4	800
DTS06	16	0.35	24	21.3		800
DTS07	16	0.35	32	25.5	3	800
DTS08	16	0.35	32	25.5		800
DTS09	16	0.4	44	37.5	2	800
DTS10	16	0.4	44	37.5		800
DTS12	16	0.4	44	37.5		800

### 32mm



### 44mm

