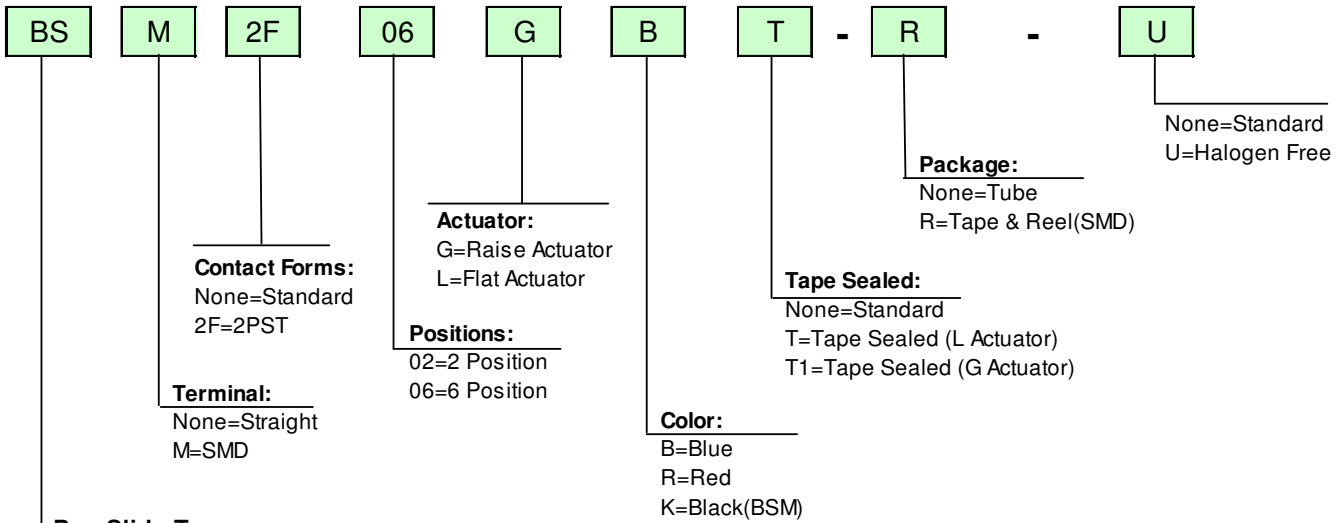


<b>MODEL</b>	<b>SPECIFICATION</b>		Page
<b>BS(E)/BS(E)M series</b> <b>Box Slide Type</b>	<b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-001	1/10

**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
◆ Travel	.....1.8mm
◆ Mechanical Life	..... <b>5,000 cycles (Min.)</b>
◆ Electrical Life	..... <b>2,000 cycles /25mA,24VDC</b>
◆ Operating Temperature	SMD/THR.....-40℃ ~ +105℃
	THT.....-40℃ ~ +85℃
◆ Storage Temperature	.....-40℃ ~ +85℃

**Soldering Information**

- ◆ **Hand Soldering**  
Soldering iron of 30W or under at 350℃ for 3 sec. max. or at 270℃ for 5 sec. max.
- ◆ **Reflow Soldering:**
  - (1) BS(E)M & BS(E)-THR series allow one-time reflow process only.
  - (2) The peak temperature of the oven for BSM and BS-THR series should be 250℃ max.
  - (3) For Vapor Phase Heating (VPH) use, the switch must be tape-sealed.
- ◆ **Wave Soldering**  
For lead free wave solder simulation of typical components, the solder bath temperature shall be maintained at 270℃ max./ 5~10 seconds.
- ◆ **Keep all actuators in “OFF” position during soldering and cleaning processes.**

<b>MODEL</b>	<b>SPECIFICATION</b>		Page
<b>BS(E)/BS(E)M series</b> <b>Box Slide Type</b>	<b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-002	2/10

### Classification Reflow Profiles

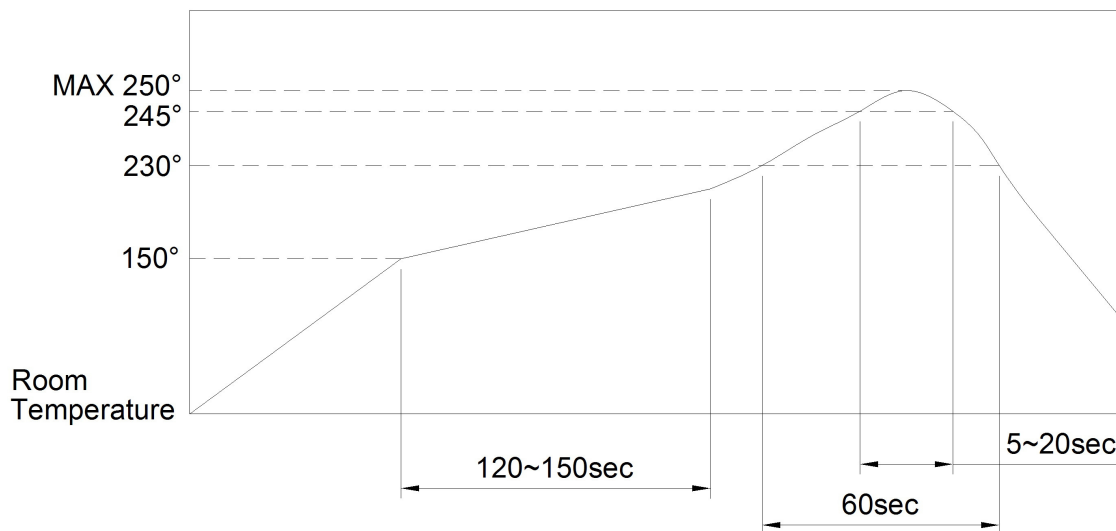
Profile Feature	Pb-Free Assembly
<b>Preheat / Soak</b>	
Temperature Min ( $T_{Smin}$ )	150°C
Temperature Max ( $T_{Smax}$ )	200°C
Time(ts) from ( $T_{Smin}$ to $T_{Smax}$ )	60 ~120 seconds
Ramp-up Rate ( $T_L$ to $T_p$ )	3°C/second max
Liquidous temperature ( $T_L$ )	217°C
Time ( $t_L$ ) maintained above 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.

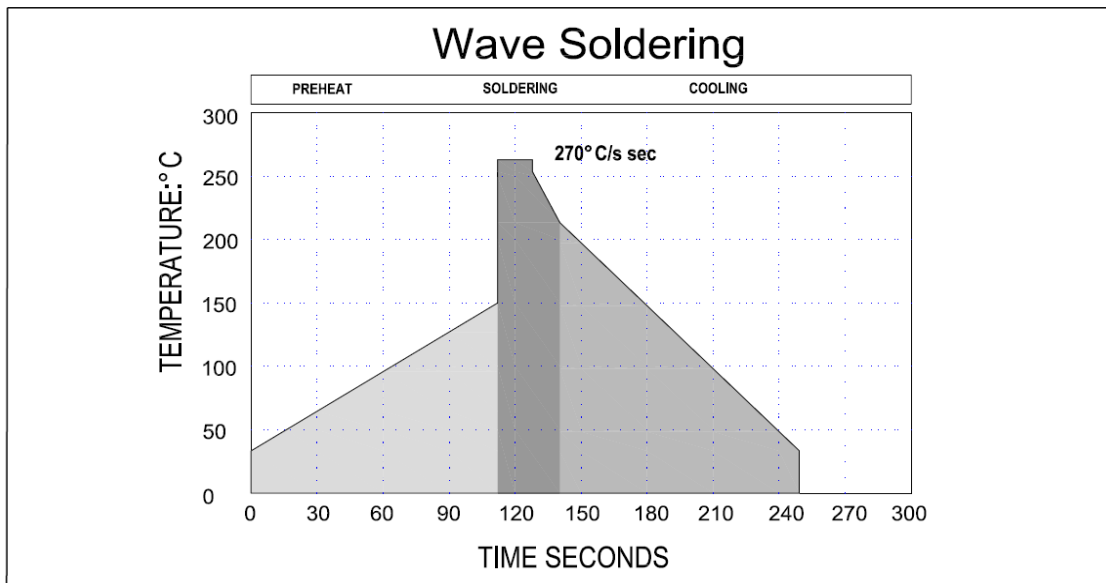
Source: IPC/JEDEC J-STD-020D.1

### Recommended Reflow Soldering



<b>MODEL</b>	<b>SPECIFICATION</b>		<b>Page</b>
<b>BS(E)/BS(E)M series</b>	<b>DIP SWITCH</b>	SP-003	3/10
<b>Box Slide Type</b>	<b>RoHS&amp;REACH Compliant / Halogen Free</b>		

### 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 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.

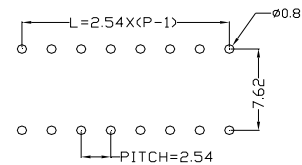
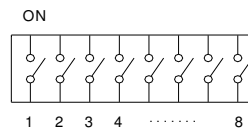
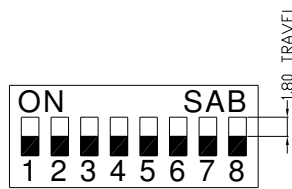
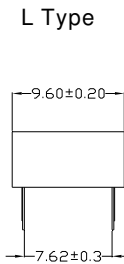
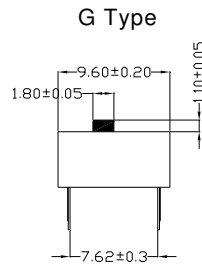
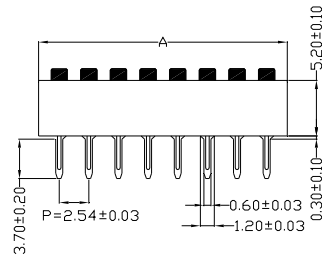
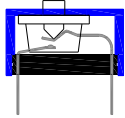
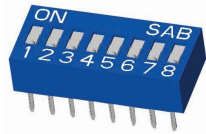
※ Any flux enters the switch may influence contact function.

<b>MODEL</b>	<b>SPECIFICATION</b>	<b>Page</b>
<b>BS(E)/BS(E)M series</b>	<b>DIP SWITCH</b>	<b>SP-004</b>
<b>Box Slide Type</b>	<b>RoHS&amp;REACH Compliant / Halogen Free</b>	<b>4/10</b>

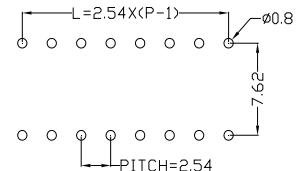
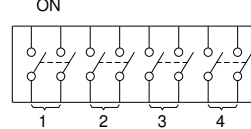
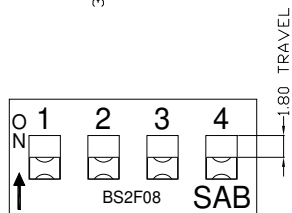
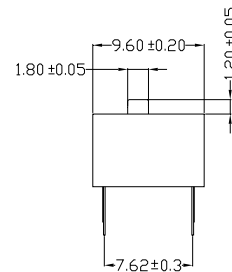
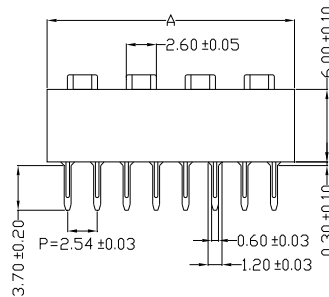
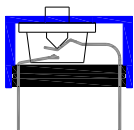
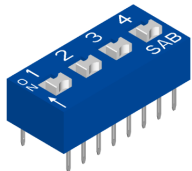
### Materials

<ul style="list-style-type: none"> <li>◆ Cover</li> <li>◆ Base</li> <li>◆ Actuator</li> <li>◆ Contact</li> <li>◆ Terminal</li> <li>◆ Tape</li> </ul>	<p>RoHS&amp;REACH Compliant... Thermoplastic UL 94V-0, Red/ Blue/ Black(BSM)          Halogen Free..... Thermoplastic UL 94-HB, Red/ Blue          Halogen Free..... Thermoplastic UL 94V-0, Black(BSM)</p> <p>BS/BSE..... Thermoplastic UL 94-HB, Black          BSM/BSEM..... Thermoplastic UL 94V-0, Black</p> <p>..... Thermoplastic UL 94-HB, White</p> <p>.....40u" +/-10u" Nickel Cover 1u" Gold-Plated</p> <p>Standard.....40u" +/-10u" Nickel Cover (Pure) Tin-Plated</p> <p>.....Polyimide Film</p>
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### BS/BSE

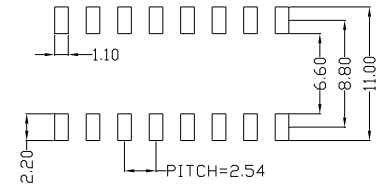
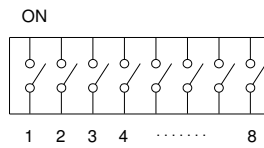
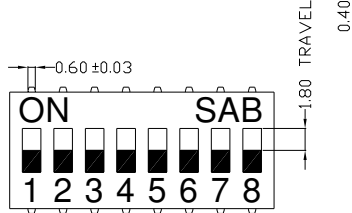
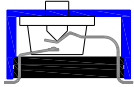
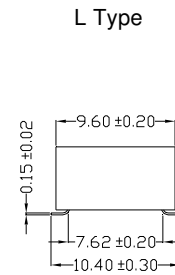
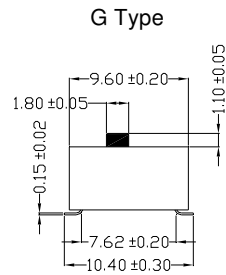
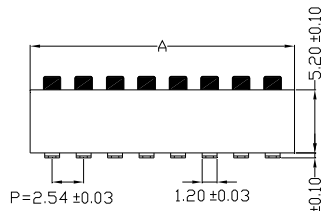
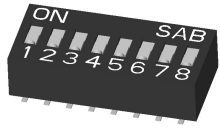


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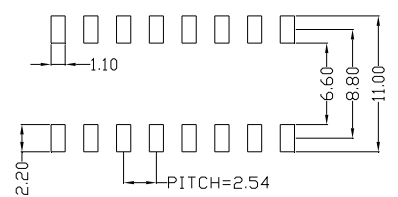
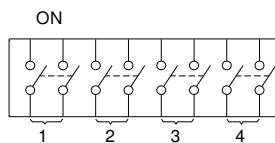
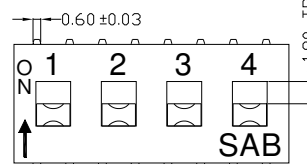
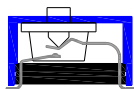
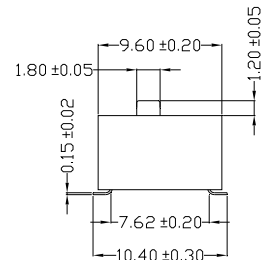
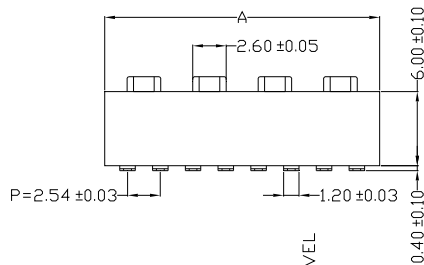
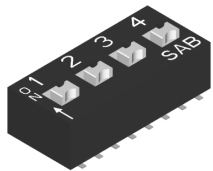


MODEL	SPECIFICATION DIP SWITCH	Page
BS(E)/BS(E)M series Box Slide Type		SP-005
RoHS&REACH Compliant / Halogen Free		
5/10		

### BSM/BSEM



### BSM2F/BSEM2F



<b>MODEL</b>	<b>SPECIFICATION</b>	SP-006	Page
<b>BS(E)/BS(E)M series</b> <b>Box Slide Type</b>	<b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>		6/10

### Part Number Table

#### BS(E) / BS(E)M

No. Pos.	Dim. "A"	Through Hole		SMD		
		BSE Raise Actuator Blue Tube Package	BS Flat Actuator Red Tube Package	BSM Raise Actuator Black Tube Package	BSEM Flat Actuator Black Tube Package	BSM Raise Actuator Black Tape & Reel
1	3.54		BS01LR	BSM01GK		BSM01GK-R
2	6.08		BS02LR	BSM02GK		BSM02GK-R
3	8.62	BSE03GB	BS03LR	BSM03GK	BSEM03LK	BSM03GK-R
4	11.16	BSE04GB	BS04LR	BSM04GK	BSEM04LK	BSM04GK-R
5	13.70	BSE05GB	BS05LR	BSM05GK	BSEM05LK	BSM05GK-R
6	16.24	BSE06GB	BS06LR	BSM06GK	BSEM06LK	BSM06GK-R
7	18.78	BSE07GB	BS07LR	BSM07GK	BSEM07LK	BSM07GK-R
8	21.32	BSE08GB	BS08LR	BSM08GK	BSEM08LK	BSM08GK-R
9	23.86	BSE09GB	BS09LR	BSM09GK	BSEM09LK	BSM09GK-R
10	26.40	BSE10GB	BS10LR	BSM10GK	BSEM10LK	BSM10GK-R
12	31.48	BSE12GB	BS12LR	BSM12GK	BSEM12LK	BSM12GK-R

#### BS(E)2F/BS(E)M2F

No. Pos.	Dim. "A"	Through Hole		SMD	
		BS2F Raise Actuator Standard Red Tube Package	BSE2F Raise Actuator Standard Blue Tube Package	BSEM2F Raise Actuator Standard Black Tube Package	BSM2F Raise Actuator Standard Black Tube Package
1	6.08	BS2F01GR			BSM2F01GK
2	11.16	BS2F02GR	BSE2F02GB	BSEM2F02GK	BSM2F02GK
3	16.24	BS2F03GR	BSE2F03GB	BSEM2F03GK	BSM2F03GK
4	21.32	BS2F04GR	BSE2F04GB	BSEM2F04GK	BSM2F04GK
5	26.40	BS2F05GR	BSE2F05GB	BSEM2F05GK	BSM2F05GK

<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-007	Page
<b>BS(E)/BS(E)M series</b> <b>Box Slide Type</b>			7/10

### Tube Package

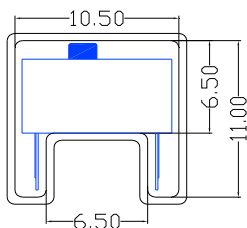
#### ◆ BS(E)/BS(E)M

POLE	1	2	3	4	5	6	7	8	9	10	12
TUBE	148	85	61	47	38	32	28	24	22	20	16
BOX	11840	6800	4880	3760	3040	2560	2240	1920	1760	1600	1280
CTN 1	23680	13600	9760	7520	6080	5120	4480	3840	3520	3200	2560
CTN 2	47360	27200	19520	15040	12160	10240	8960	7680	7040	6400	5120

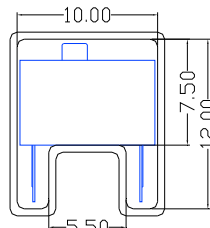
#### ◆ BS(E)2F/BS(E)M2F

POLE	1	2	3	4	5	6
TUBE	85	47	32	24	20	16
BOX	4760	2632	1792	1344	1120	896
CTN 1	9520	5264	3584	2688	2240	1792
CTN 2	19040	10528	7168	5376	4480	3584

**BS(E)/BS(E)M**



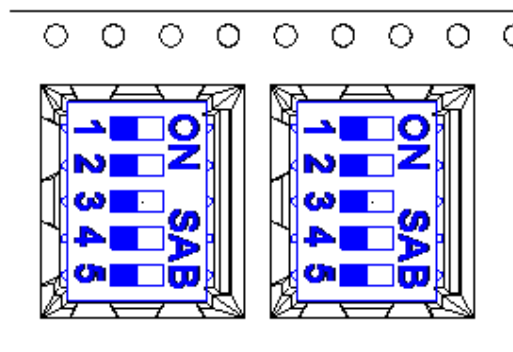
**BS(E)2F/BS(E)M2F**



### Tape & Reel package

#### ◆ BSM/BSEM

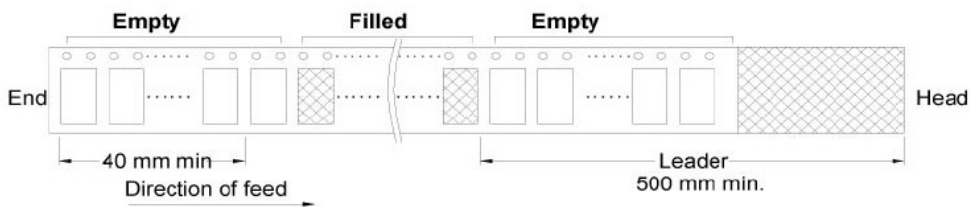
POLE	02	03	04	05	06	07	08	10	12
Pitch (mm)	12	16	16	16	16	16	16	16	16
Width (mm)	24	24	24	24	24	44	44	44	44
Per Reel	700	500	500	500	500	500	500	500	500



<b>MODEL</b>	<b>SPECIFICATION DIP SWITCH</b>	SP-008	Page
<b>BS(E)/BS(E)M series</b> <b>Box Slide Type</b>			8/10
<b>RoHS&amp;REACH Compliant / Halogen Free</b>			

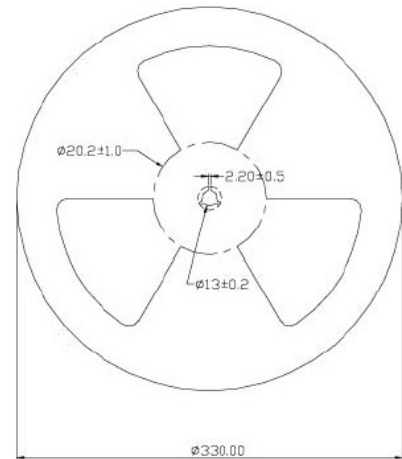
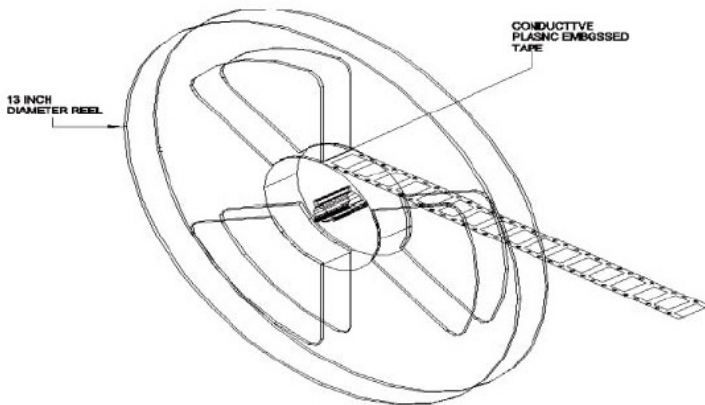
### Carry Tape Table

P/N	Pitch(mm)	Thickness(mm)	Width(mm)	Sellota[e(mm)	@REEL/BOX	Q'ty/Reel
BSM02	12	0.4	24	21.3	4	700
BS(E)M03	16	0.4	24	21.3		500
BS(E)M04	16	0.4	24	21.3		500
BS(E)M05	16	0.4	24	21.3		500
BS(E)M06	16	0.4	32	25.5	3	500
BS(E)M08	16	0.4	44	37.5	2	500
BS(E)M10	16	0.4	44	37.5		500
BS(E)M12	16	0.4	44	37.5		500



### TAPE AND REEL PACKAGING

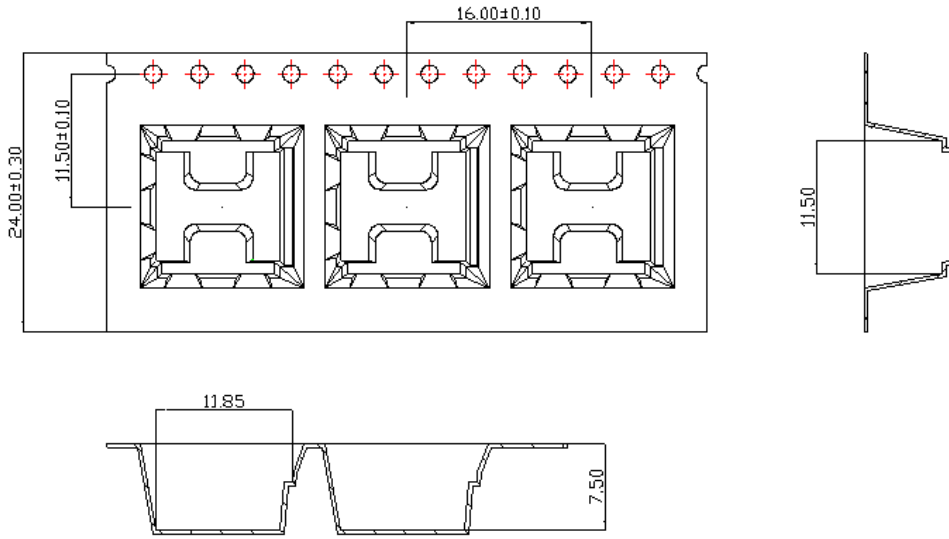
Meet EIA 481-2D & EIA 481-3



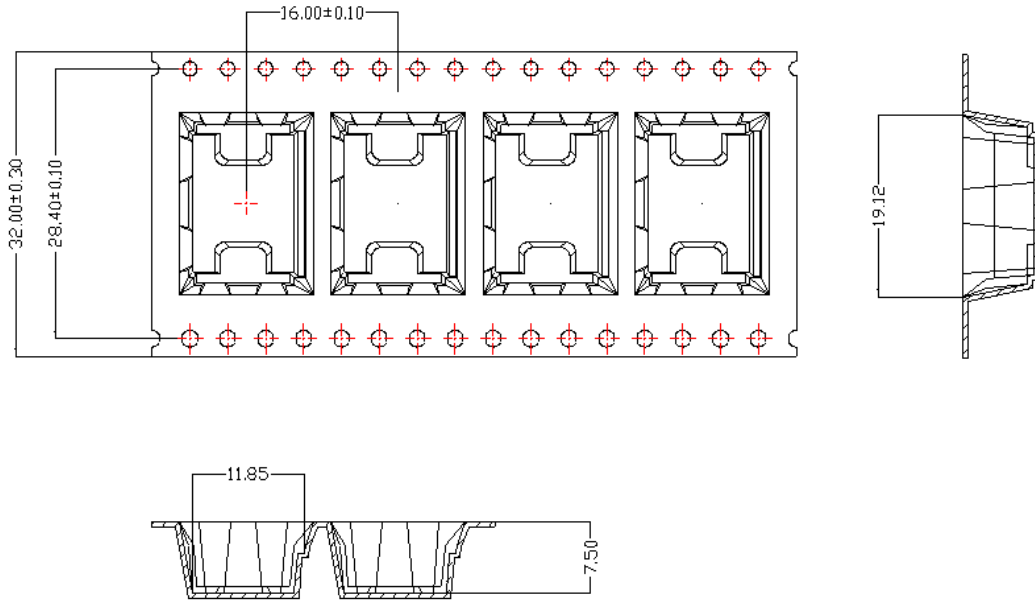


MODEL	SPECIFICATION DIP SWITCH	SP-009	Page
BS(E)/BS(E)M series Box Slide Type			9/10
RoHS&REACH Compliant / Halogen Free			

**24mm**

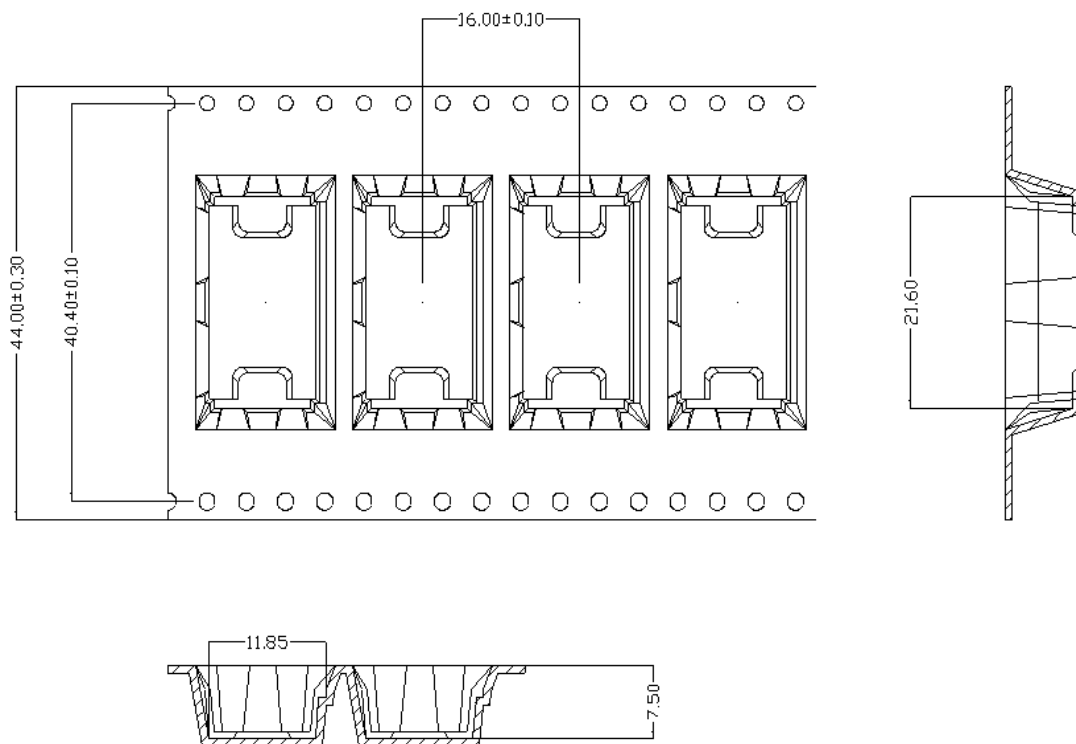


**32mm**



<b>MODEL</b>	<b>SPECIFICATION</b> <b>DIP SWITCH</b> <b>RoHS&amp;REACH Compliant / Halogen Free</b>	SP-010	Page
<b>BS(E)/BS(E)M series</b> <b>Box Slide Type</b>			10/10

**44mm**



**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