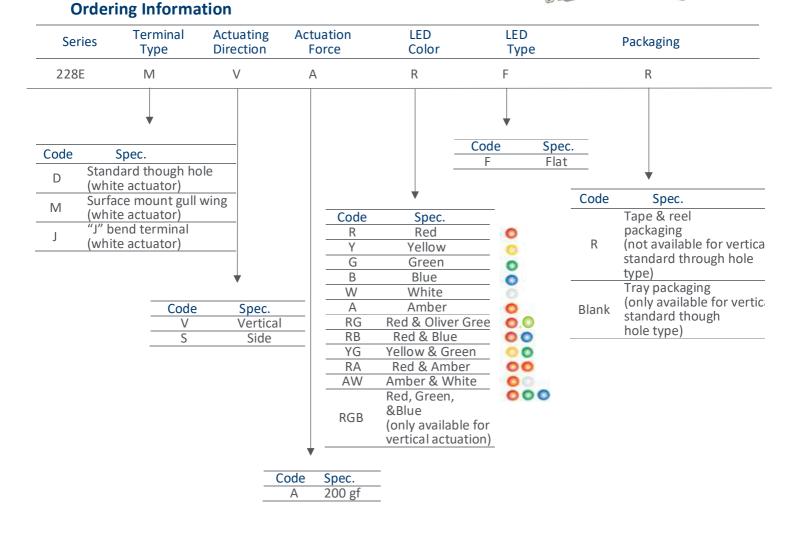


# Series 228E 7.2 x 6.8mm IP67 Rated Illuminated Tactile Switch

- Surface mount gull-wing terminal and standard through hole configurations
- IP67 protection
- Compatible with IR reflow, and manual soldering
- Single or Tri-color display during illumination
- Variety of LED color options



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→ Sense

RoHS



# Series 228E

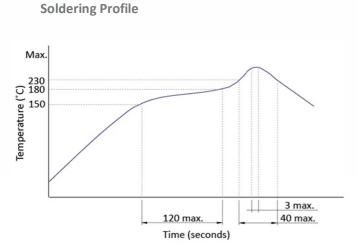
Tactile Switch

### **Electrical Specifications**

Parameter	Conditions & Remarks	Min	Max	Unit
Contact Resistance			100	milliohms
Insulation Resistance	Resistance Between insulated terminals 100		megohms	
Dielectric Strength	1 minute between adjacent switches		250	VAC
Nonswitching Rating			50	mA
			or 12	or VDC

### **Mechanical and Environmental**

Soldering	Maximum reflow temperature, 260°C for 3 seconds Maximum wave temperature, 265°C for 5 seconds Maximum manual temperature, 350°C for 3 seconds	
RoHS	Lead-Free. Fully compliant to RoHS Directive 2011/65/EU and 2015/863/EU	
Operating Force	200gf ± 50gf	
Actuation Life	100,000 cycles	
Actuator Strength	2 Kgf maximum	
Travel	0.7 ± 0.2mm	
Packaging	Standard tape and reel packaging for surface mount gull wing terminal Tray packaging for standard though hole	
Operating Temperature Range	-40°C to +85°C	
Storage Temperature Range	-40°C to +85°C	
Waterproof Grade	IP67	
MSL Level	1 for tray packaging 3 for tape and reel packaging	



#### LED Specifications

Color	Reversed Voltage	Forward Current	Recommended Operating	Forward Voltage	
			Current	Nor	Max
Red	5 Vdc	20 mA	20 mA	1.7V	2.4V
Green	5 Vdc	20 mA	20 mA	1.9V	2.4V
Yellow	5 Vdc	20 mA	20 mA	1.9V	2.4V
Blue	5 Vdc	20 mA	20 mA	3.0V	3.6V
White	5 Vdc	20 mA	20 mA	3.0V	3.6V

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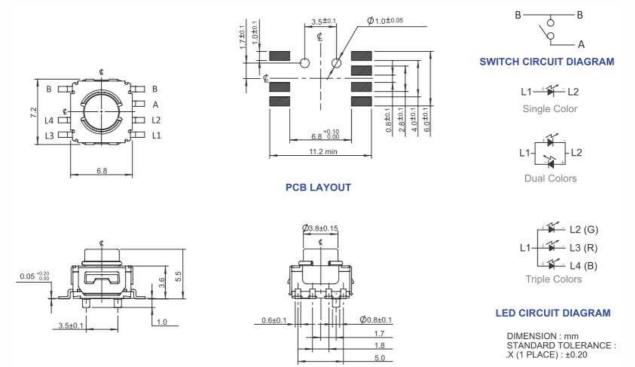
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## Series 228E Tactile Switch

### **Mechanical Specifications**

## Figure 1 – 228EMV, Surface Mount Gull Wing, Vertical Actuation



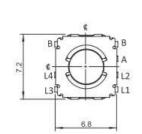
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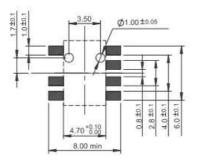
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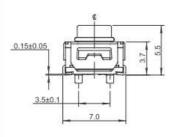
## Series 228E Tactile Switch

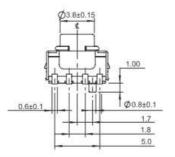
## Figure 2 – 228EJV, "J" Bend Terminal, Vertical Actuation

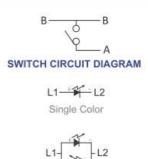




#### PCB LAYOUT









**Dual Colors** 

Triple Colors

#### LED CIRCUIT DIAGRAM

DIMENSION : mm STANDARD TOLERANCE : .X (1 PLACE) : ±0.20

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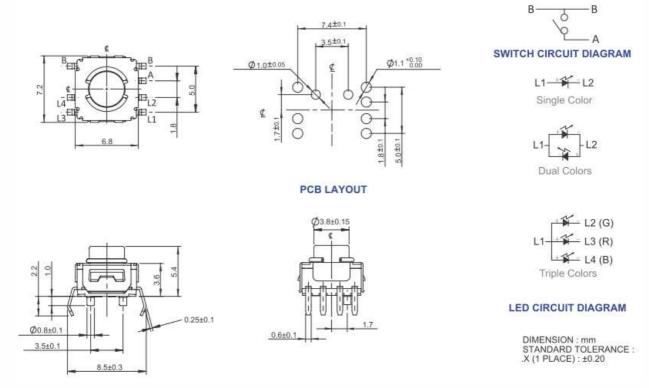
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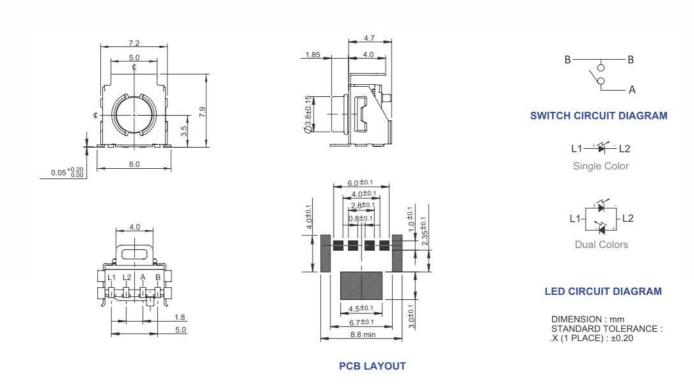
# Series 228E

Tactile Switch

## Figure 3 – 228EDV, Standard Though Hole, Vertical Actuation



## Figure 4 – 228EMS, Surface Mount Gull Wing, Side Actuation



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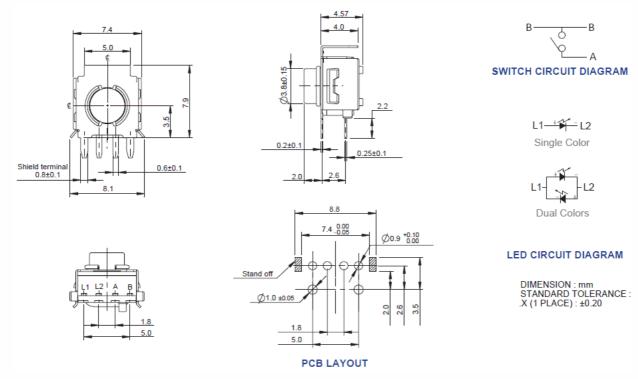
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# Series 228E

Tactile Switch

## Figure 5 – 228EDS, Standard Through Hole, Side Actuation

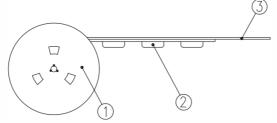


### Packing: Tape and Reel

Surface Mount Gull Wing/J Bend Terminal, Vertical Actuation, 228EMV..., 228EJV...

The packing specifications:

1. Structure and materials:



No	PART NAME	MATERIAL
1	REEL	POLYSTYRENE
2	CARRIER TAPE	POLYSTYRENE
3	COVER TAPE	POLYESTER

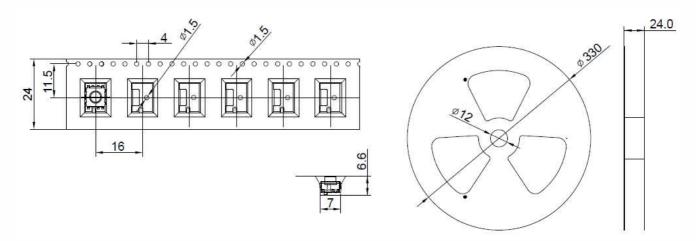
- 2. Packing quantity: 800 pcs/reel (Gull Wing); 600 pcs/reel (J Bend)
- 3. More than 15 empty pockets should remain at each end of the carrier tape for each reel.
- 4. Shortage of less than 10 pcs a reel is acceptable but no more than 3 consecutive empty pockets are allowed.
- 5. Stripping strength of cover tape is between 10 gf to 130 gf and stripping angle should be within 165°~180°.
- 6. The product in the pocket of carrier tape should be placed in a specified correct position.
- 7. Tape and reel per EIA-481.
- 8. Dimensions:

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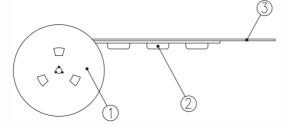
Series 228E Tactile Switch



Surface Mount Gull Wing, Side Actuation, 228EMS...

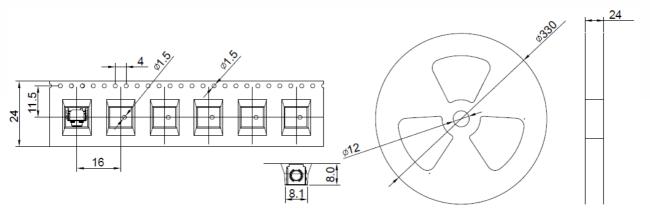
The packing specifications:

1. Structure and materials:



No	PART NAME	MATERIAL
1	REEL	POLYSTYRENE
2	CARRIER TAPE	POLYSTYRENE
3	COVER TAPE	POLYESTER

- 2. Packing quantity: 500 pcs/reel
- 3. More than 15 empty pockets should remain at each end of the carrier tape for each reel.
- 4. Shortage of less than 10 pcs a reel is acceptable but no more than 3 consecutive empty pockets are allowed.
- 5. Stripping strength of cover tape is between 10 gf to 130 gf and stripping angle should be within 165°~180°.
- 6. The product in the pocket of carrier tape should be placed in a specified correct position.
- 7. Tape and reel per EIA-481.
- 8. Dimensions:



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