

# ITS Series

## Illuminated Tactile Switch



### Specifications

<b>Function</b>	N.O. Momentary action
<b>Terminals</b>	SMT & Thru-hole
<b>Packaging</b>	Thru-hole: 200 pieces per tray SMT: tape & reel (see V2, V3 or R3N mounting style drawings)

### Mechanical Characteristics

<b>Operating Force</b>	160 ± 50gf for V1; V2; V3; R1; R2 models 220 ± 50 gf for R3N model
<b>Operating Life</b>	50,000 cycles (250m Ω max)
<b>Recommended Operating Stroke</b>	0.25mm ± 0.1mm

### Electrical Characteristics

<b>Rating</b>	50mA @ 12 VDC
<b>Contact Resistance</b>	< 100 mΩ (initial)
<b>Dielectric Withstanding Voltage</b>	>250VAC (50-60 Hz) between terminals - 1 min.Ω
<b>Insulation Resistance</b>	> 100M Ω
<b>Bounce Time</b>	<10 ms

### Environmental Characteristics

<b>Operating Temperature</b>	-25°C to 70°C
<b>Storage Temperature</b>	-25°C to 80°C

### Process

<b>Soldering</b>	Thru-hole - wave compatible SMT - convection or IR reflow compatible
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## Description

The ITS series illuminated tactile switch features vertical and right angle thru-hole and SMT models, ideal for a wide range of products – such as consumer electronics, medical devices and audio/video applications. In addition, multiple custom caps and legends are available to meet application-specific requirements.

## Features & Benefits

- Vertical and right angle SMT models
- Vertical and right angle thru-hole models
- Multiple caps and legends
- Several LED colors and bi-color options
- RoHS compliant /compatible

## Applications

- Consumer electronics
- Server/storage
- Medical devices
- Test/Measurement/Instrumentation
- Audio/Video
- Computers/Peripherals
- Security

## Materials

<b>Contacts/Terminals</b>	Base metal: brass, Plating: Ag
<b>Dome</b>	Base metal: Phosphor bronze plating: Ag
<b>Base</b>	PA
<b>Actuator</b>	PA
<b>Cover</b>	R3N option: Stainless steel V2 & V3 options: PPA Other options: PA
<b>Caps</b>	Caps are ordered separately and shipped bulk. Thru-hole versions available with caps assembled under custom part number. Contact customer service for details.

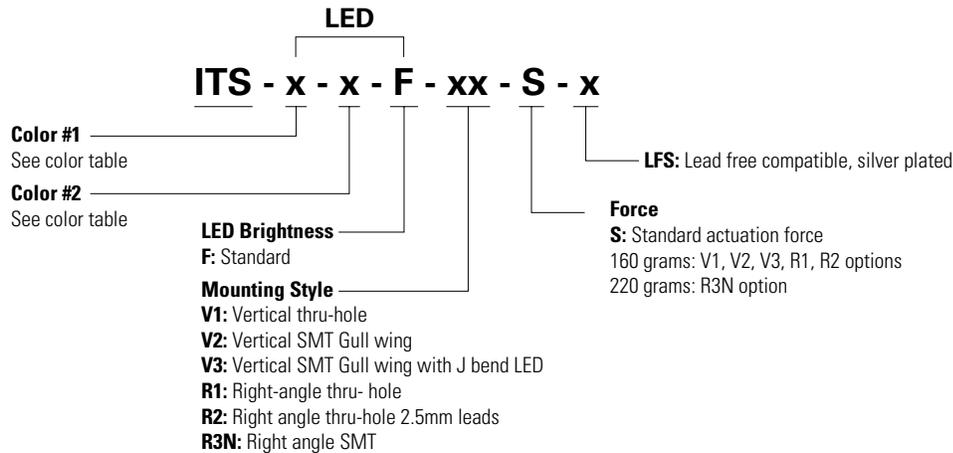
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### Ordering Number

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



### LED Color

- 00: No light
- 10: Red
- 12: Red/Yellow
- 13: Red/Green
- 14: Red/Blue
- 20: Yellow
- 21: Yellow/Red
- 23: Yellow/Green
- 30: Green
- 31: Green/Red
- 32: Green/Yellow
- 40: Blue
- 41: Blue/Red
- 50: White
- 60: True green

**Notes:**  
Other colors available by request

### LED Color / Brightness

LED Characteristic	Units	Standard LED Color Options					
		Red (1)	Yellow (2)	Green (3)	Blue (4)	White (5)	True Green (6)
Recommended Operating	mA @ 5VDC	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA
Forward Current	mA	30 mA	30 mA	30 mA	30 mA	30 mA	30 mA
Peak Pulsing Current (1/8 duty @ 1 kHz)	mA	125 mA	125 mA	125 mA	125 mA	125 mA	125 mA
Power Dissipation	mW	75 mW	75 mW	75 mW	75 mW	75 mW	75 mW
Forward Voltage @ 20 mA	Volts	2.5 Volts Max.	2.5 Volts Max.	2.5 Volts Max.	3.6 Volts Max.	3.6 Volts Max.	3.6 Volts Max.
Dominant Wavelength @ 20mA	nm	637nm (Typical)	590nm (Typical)	570nm (Typical)	465nm (Typical)	CIE Coordinates X= 0.25~0.33 Y= 0.24~0.34	522nm (Typical)
Wavelength at Peak Emission @20mA	nm	645nm (Typical)	590nm (Typical)	573nm (Typical)	460nm (Typical)	CIE Coordinates X= 0.25~0.33 Y= 0.24~0.34	515nm (Typical)
Spectral Half Bandwidth @ 20mA	nm	20nm (Typical)	20nm (Typical)	17nm (Typical)	25nm (Typical)	CIE Coordinates X= 0.25~0.33 Y= 0.24~0.34	33nm (Typical)
Luminous Intensity @ 20mA	mcd	50 mcd Min.	125 mcd Min.	40 mcd Min.	100 mcd Min.	250 mcd Min.	500 mcd Min.
Viewing Angle at 50% LV (@ 10mA)	degrees	150° Typical	120° Typical	120° Typical	120° Typical	150° Typical	120° Typical

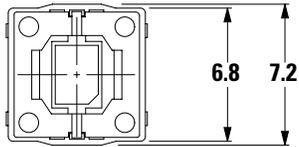
# ITS Series

## Illuminated Tactile Switch

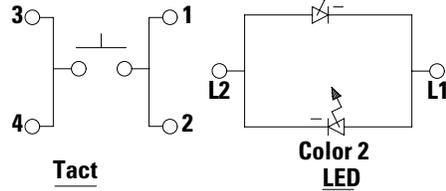


### Mounting Styles

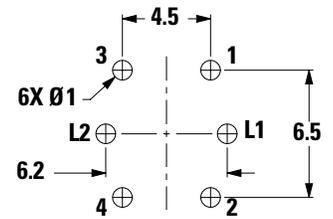
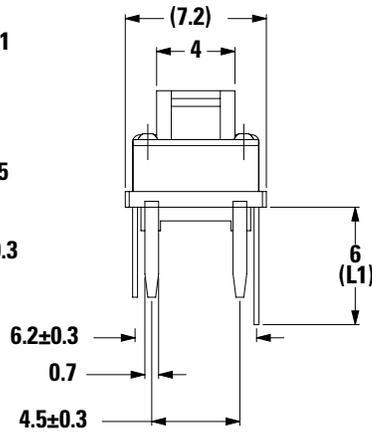
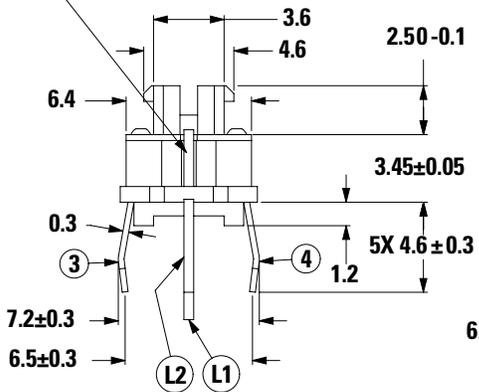
#### V1 - Vertical Thru-hole



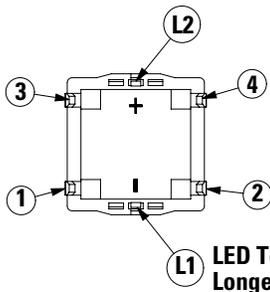
#### Electrical Schematic



Dot Showing LED Color is Marked for Minus Pole See Schematic



P.C.B. Layout



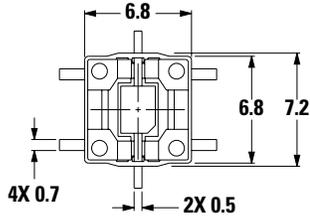
Note:  
Tray packaging: 200 pieces

# ITS Series

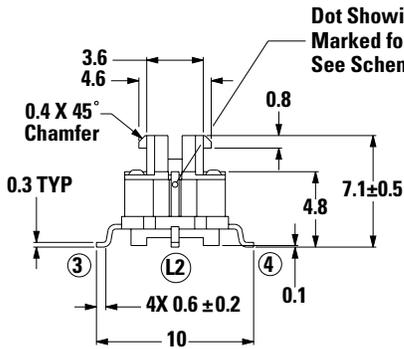
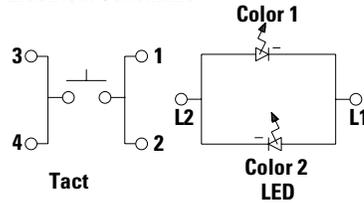
## Illuminated Tactile Switch



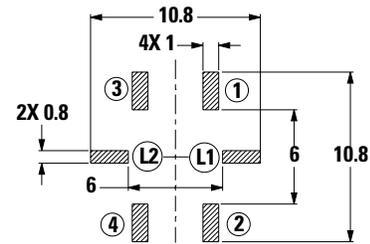
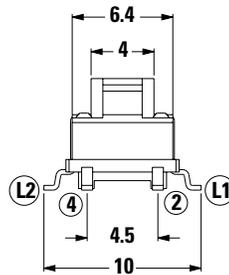
### V2 - Vertical SMT: Gullwing



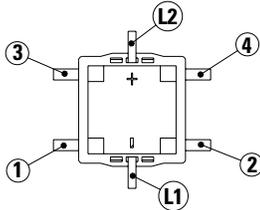
#### Electrical Schematic



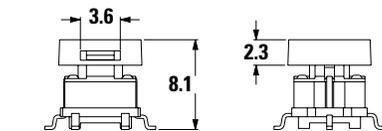
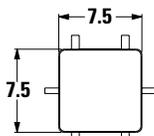
Dot Showing LED Color is Marked for Minus Pole (Cathode) See Schematic



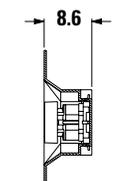
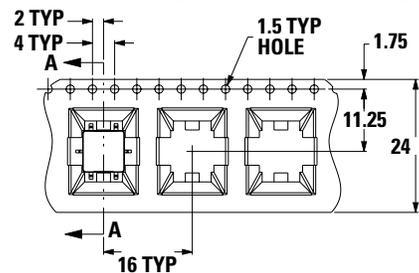
P.C.B. Layout



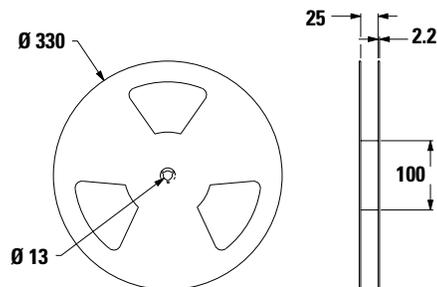
### Tape and Reel



Notes:  
1. Switch with Temporary Pick and Place Cap.



Section A-A



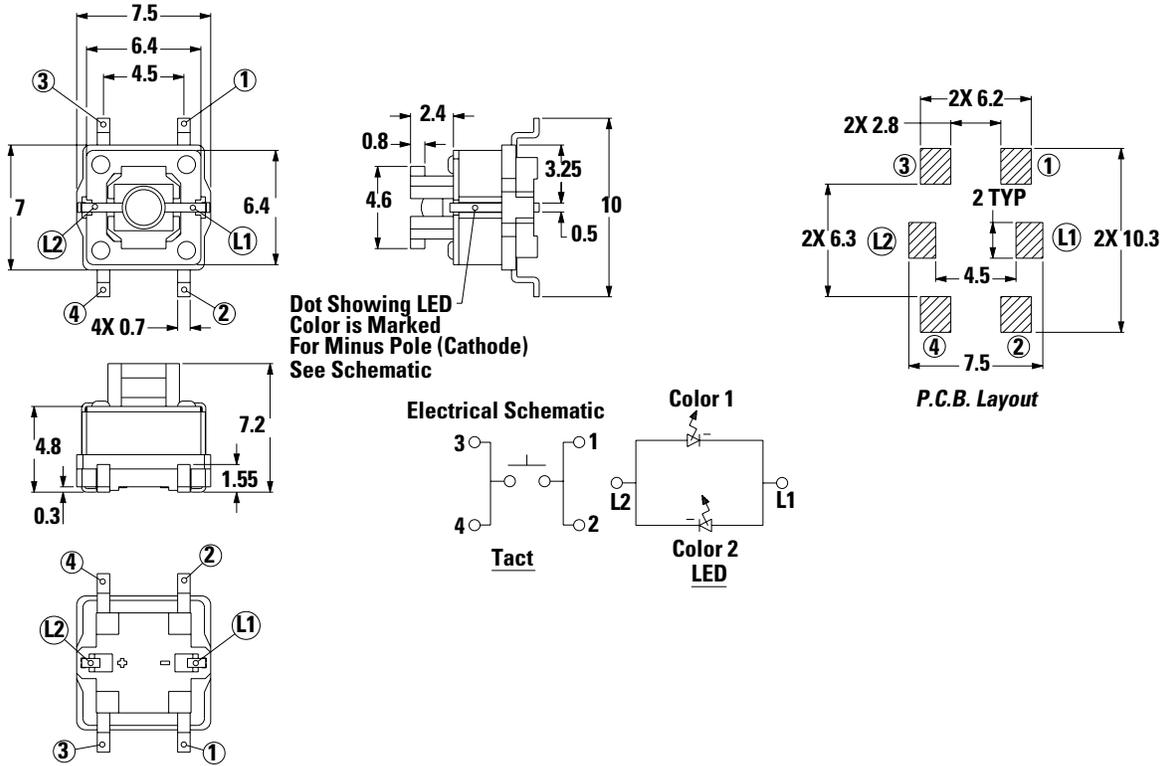
Note:  
Tape and Reel: 500 pieces

# ITS Series

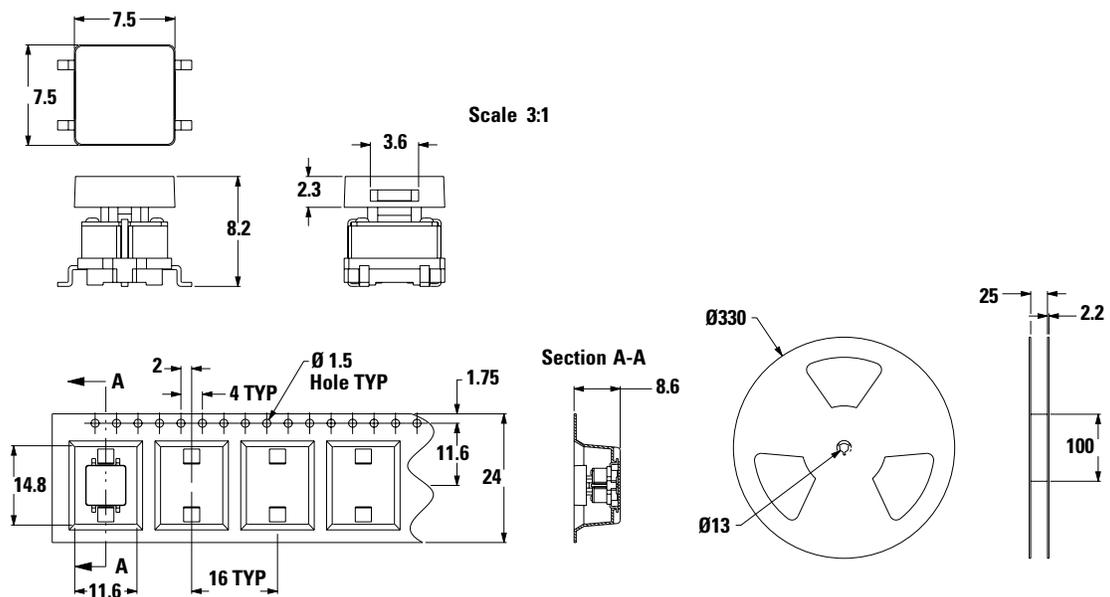
## Illuminated Tactile Switch



### V3 - Vertical SMT: Gull wing with J bend LED



### Tape and Reel



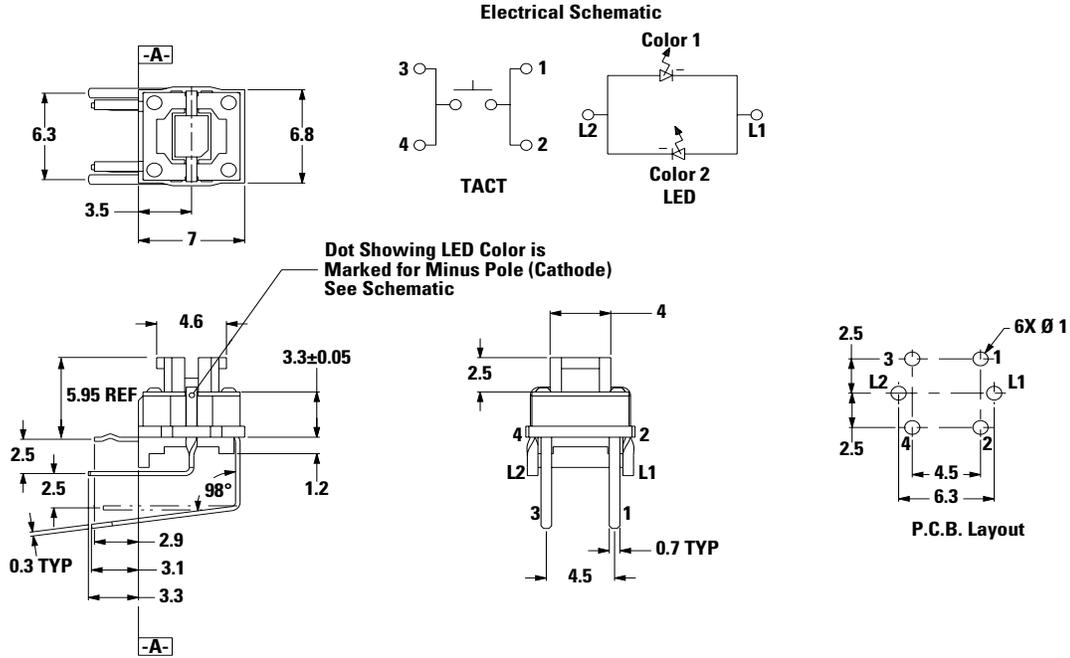
- Notes:**
1. Switch with Temporary Pick and Place Cap.
  2. Tape and Reel: 500 pieces

# ITS Series

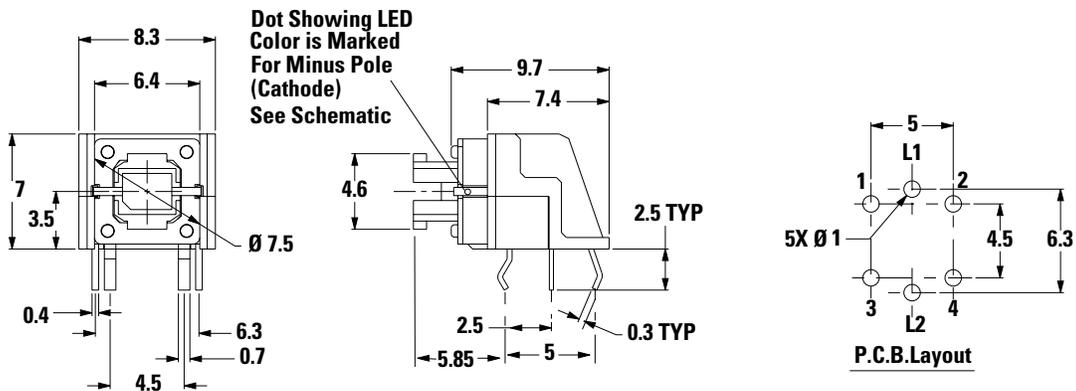
## Illuminated Tactile Switch



### R1 - Right Angle: Thru-hole



### R2 - Right Angle: Thru-hole 2.5mm leads



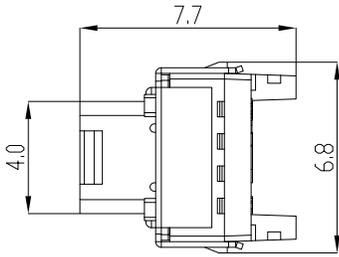
**Note:**  
Tray packaging: 200 pieces

# ITS Series

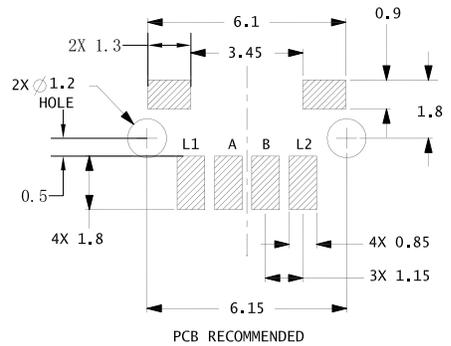
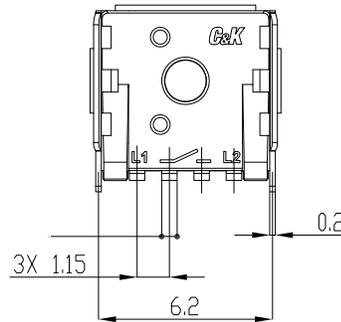
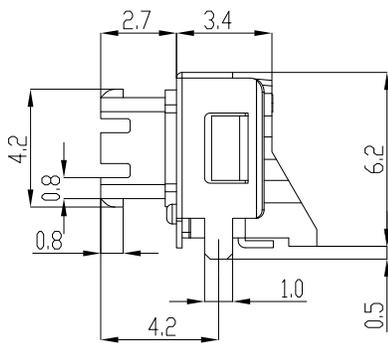
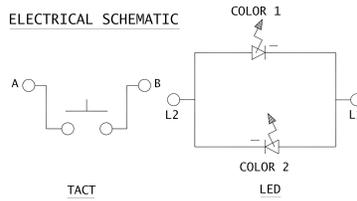
## Illuminated Tactile Switch



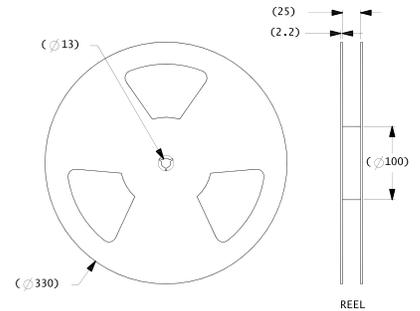
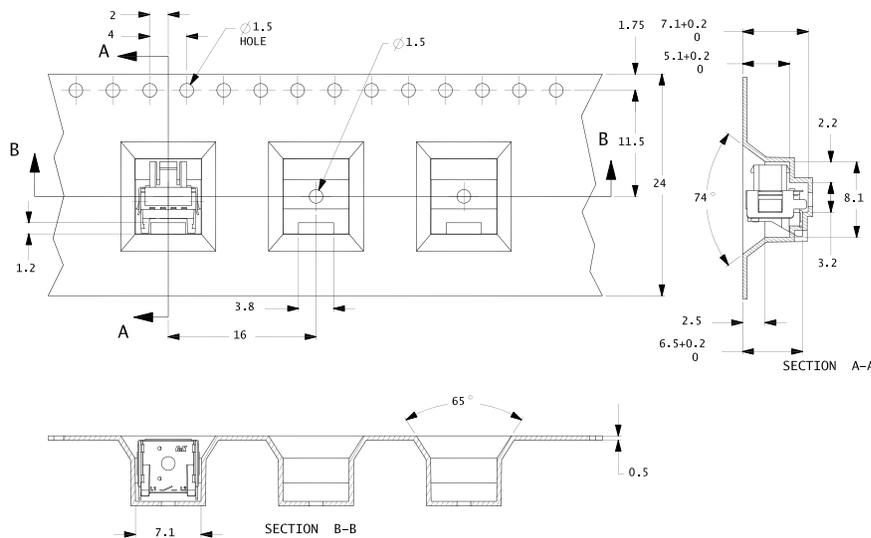
### R3N - Right Angle, SMT



ELECTRICAL SCHEMATIC



### Tape & Reel

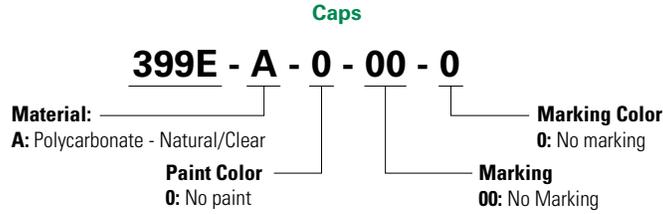


### Force

Option Code	Force
S	Standard 160 gf - V1, V2, V3, R1, R2 options 220 gf - R3N option

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**Notes:**  
Use the individual ordering code for each cap



**400EA0000**

Natural/clear



**400EB0000**

Translucent white, flat edge

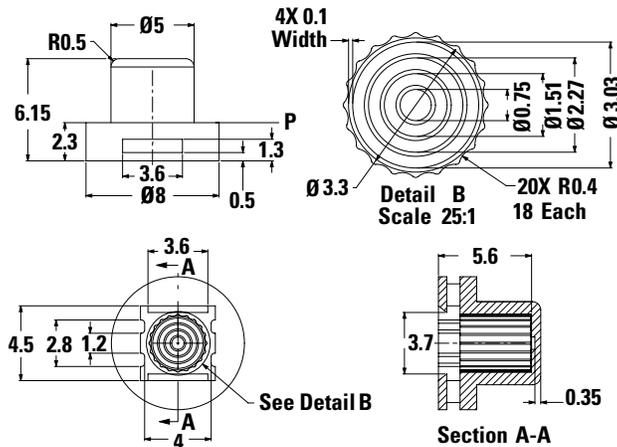


**400ECA01E**

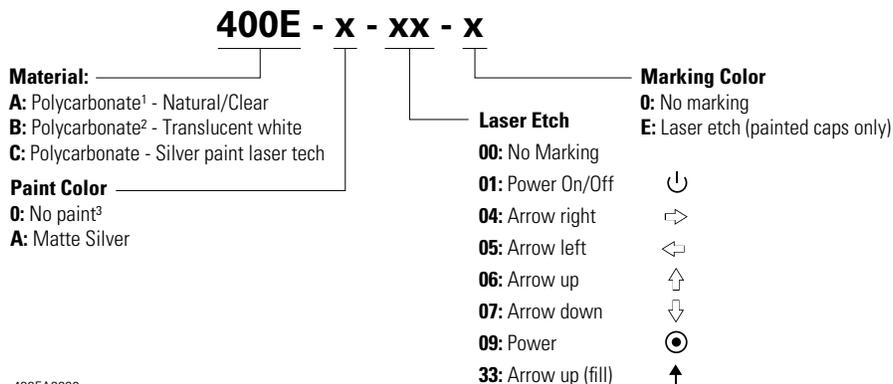
Matte silver paint laser etch, flat edge

**Note:**  
All caps not to be used to R3N

**399EA0000<sup>1</sup> Round cap, clear**



**Notes:**  
1: Not to be used with right angle versions



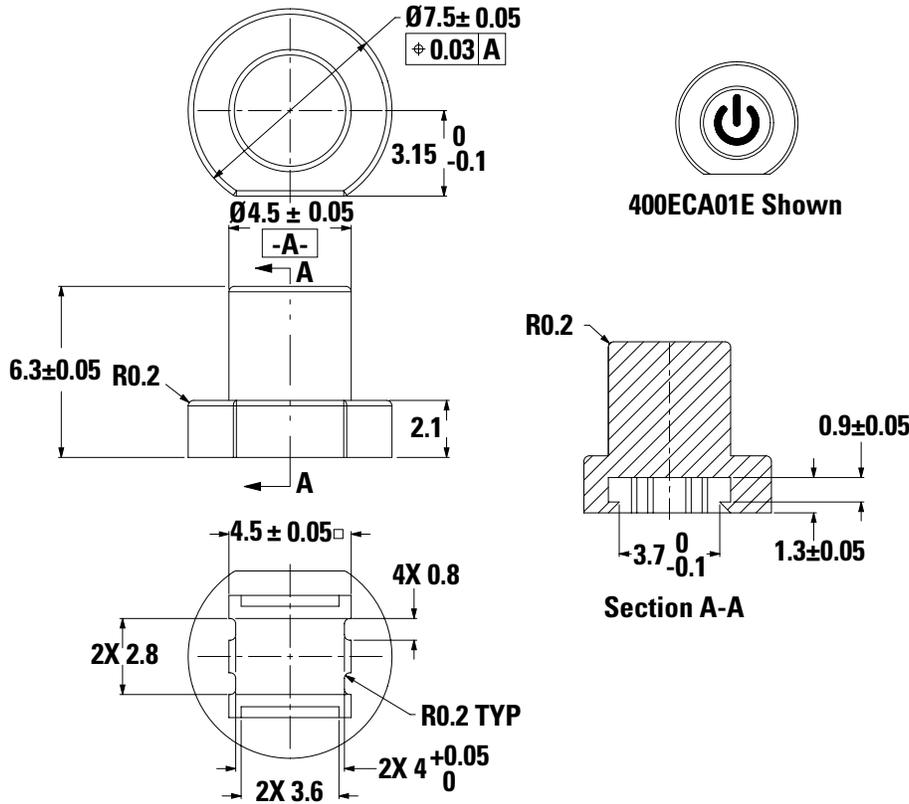
**Notes:**  
1: Material A has only one part number 400EA0000  
2: Material B has only one part number 400EB0000  
3: Paint color option 0 is not available for 400EC

# ITS Series

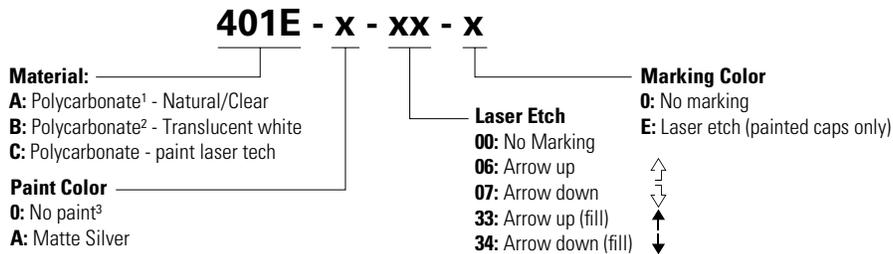
## Illuminated Tactile Switch



ITSXXFR1ST & 400ECA01E cap



**Notes:**  
400E cap dimensions shown are "as molded" (no paint).



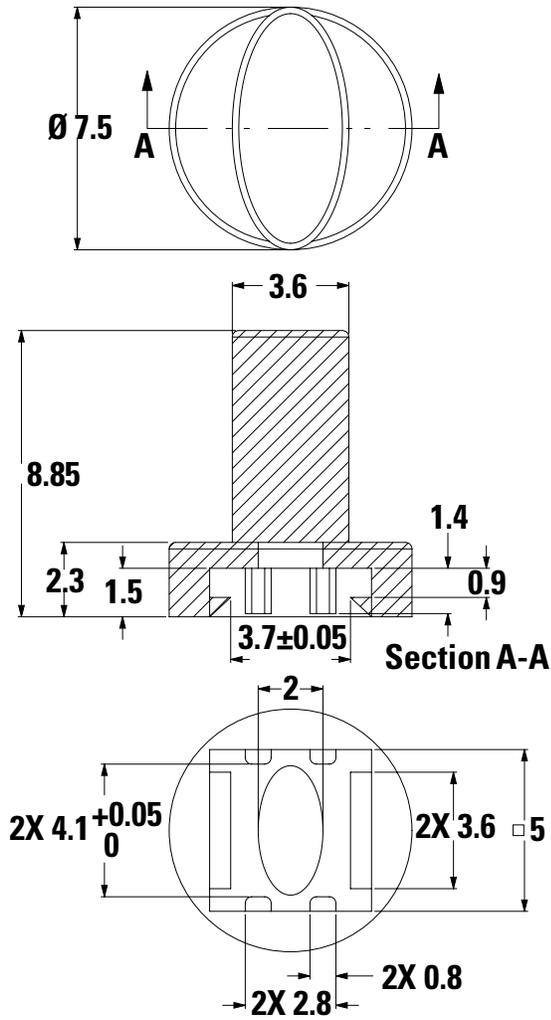
**Notes:**  
1: Material A has only one part number 400EA0000  
2: Material B has only one part number 400EB0000  
3: Paint color option 0 is not available for 400EC

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### Dimensions



**Notes:**  
401E cap dimensions shown are "as molded" (no paint).

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