

# ITS Series Illuminated Tact Switch

Tactile Switches

## 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

## Typical Applications

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



## Specification

FUNCTION: N.O. momentary action  
TERMINALS: SMT & Thru-hole

## Mechanical

OPERATING FORCE: 160 ± 50gf for V1; V2; V3; R1; R2 models  
220 ± 50 gf for R3N model  
OPERATING LIFE: 50,000 cycles (250m Ω max)  
RECOMMENDED OPERATING STROKE: 0.25mm ± 0.1mm

## Electrical

RATING: 50mA @ 12VDC  
CONTACT RESISTANCE: <100m Ω (initial)  
DIELECTRIC WITHSTANDING VOLTAGE:  
>250VAC (50-60 Hz) between terminals - 1 min.Ω  
INSULATION RESISTANCE: >100M Ω  
BOUNCE TIME: <10ms

## Packaging

Thru-hole: 200 pieces per tray  
SMT: tape & reel (see V2, V3 or R3N mounting style drawings)

## Environmental

OPERATING TEMPERATURE: -25°C to +70°C  
STORAGE TEMPERATURE: -25°C to +80°C

## Process

SOLDERABILITY: Thru-hole - wave compatible  
SMT - convection or IR reflow compatible

## Materials

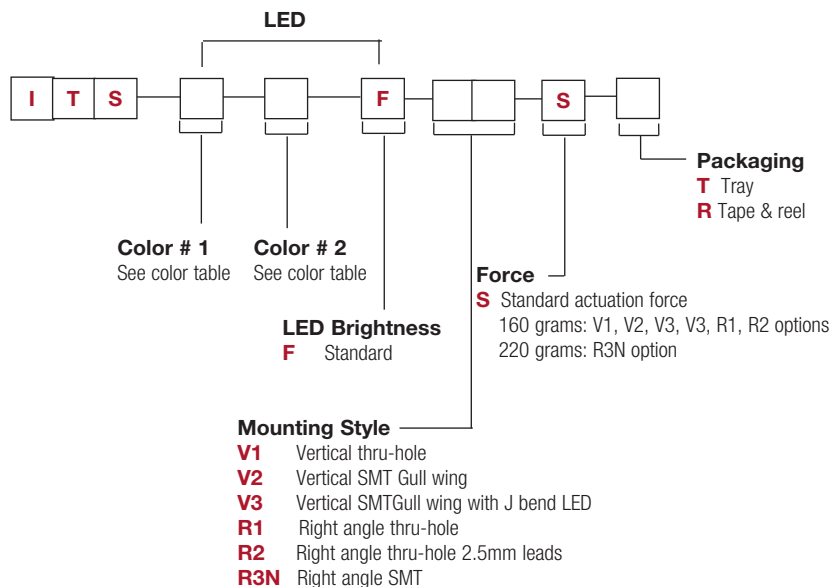
CONTACTS/TERMINALS: Base metal; brass  
Plating; Ag  
DOME: Base metal: Phosphor bronze  
Plating; Ag  
BASE: PA  
ACTUATOR: PA  
COVER: R3N option: Stainless steel  
V2 & V3 options - PPA  
Other options - PA

## Caps

Caps are ordered separately and shipped bulk. Thru-hole versions available with caps assembled under custom part number. Contact customer service for details.

## How To Order

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

\* Other colors available by request



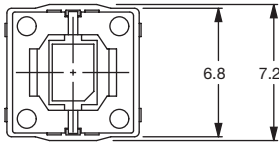
# ITS Series Illuminated Tact Switch

## LED COLOR / BRIGHTNESS

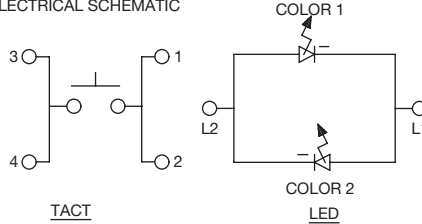
LED Characteristic	units	Standard LED Color Options					
		Red (1)	Yellow (2)	Green (3)	Blue (4)	White (5)	True Green (6)
Recommended Operating	mA @ 5VDC	20mA	20mA	20mA	20mA	20mA	20mA
Forward Current	mA	30 mA	30 mA	30 mA	30 mA	30 mA	30 mA
Peak Pulsing Current (1/8 duty @ 1kHz)	mA	125 mA	125 mA	125 mA	125 mA	125 mA	125 mA
Power Dissipation	mW	75 mW	75 mW	75 mW	108 mW	108 mW	108 mW
Forward Voltage @ 20mA	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)		515nm (Typical)
Spectral Half Bandwidth @ 20mA	nm	20nm (Typical)	20nm (Typical)	17nm (Typical)	25nm (Typical)		33nm (Typical)
Luminous Intensity @ 20mA	mcd	50mcd Minimum	125mcd Minimum	40mcd Minimum	100mcd Minimum	250mcd Minimum	500mcd Minimum
Viewing Angle at 50% LV (@10mA)	degrees	150° Typical	120° Typical	120° Typical	120° Typical	150° Typical	120° Typical

## MOUNTING STYLES

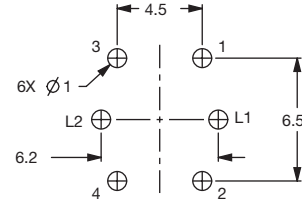
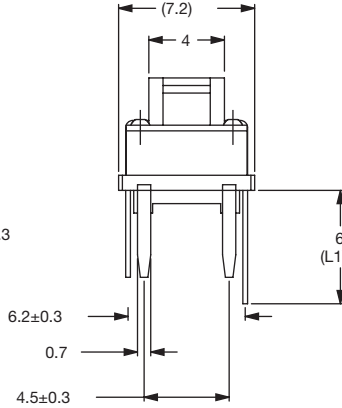
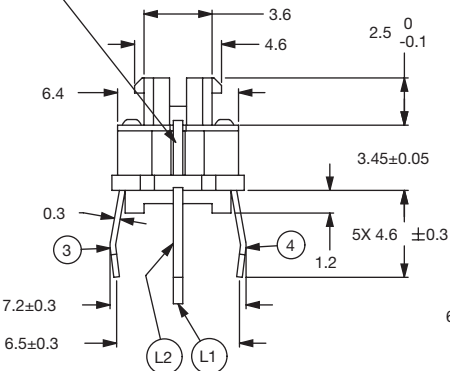
### V1 - Vertical Thru-hole



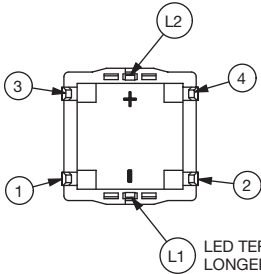
ELECTRICAL SCHEMATIC



DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE SEE SCHEMATIC



P.C.B. LAYOUT

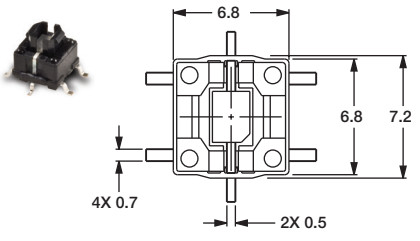


TRAY PACKAGING: 200 PIECES

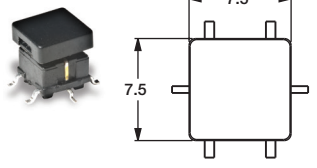
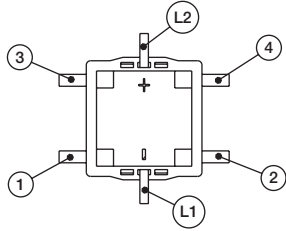
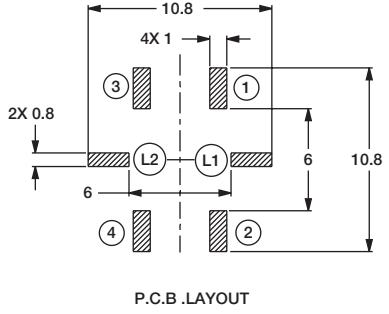
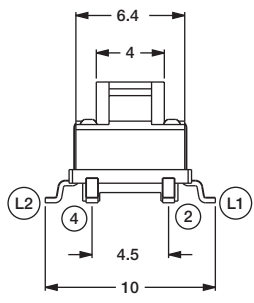
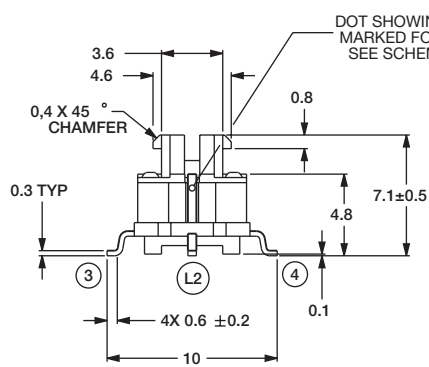
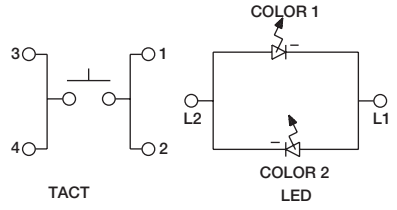
## MOUNTING STYLES

B  
Tactile Switches

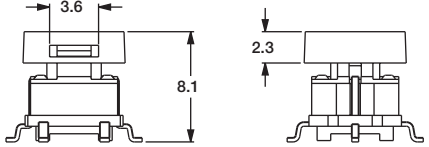
### V2 - Vertical SMT; Gullwing



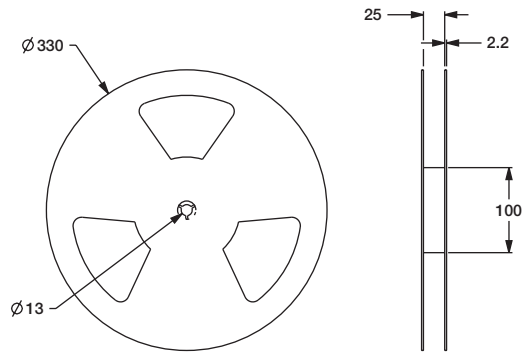
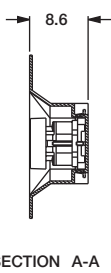
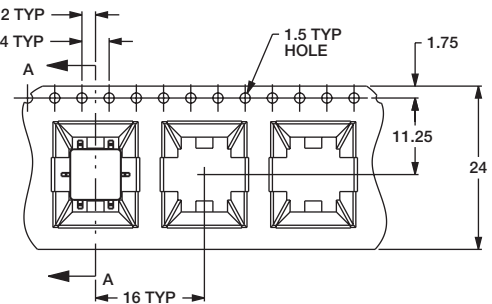
ELECTRICAL SCHEMATIC



TAPE & REEL: 500 PIECES



NOTES:  
1. SWITCH WITH TEMPORARY PICK AND PLACE CAP.

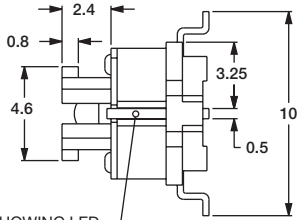
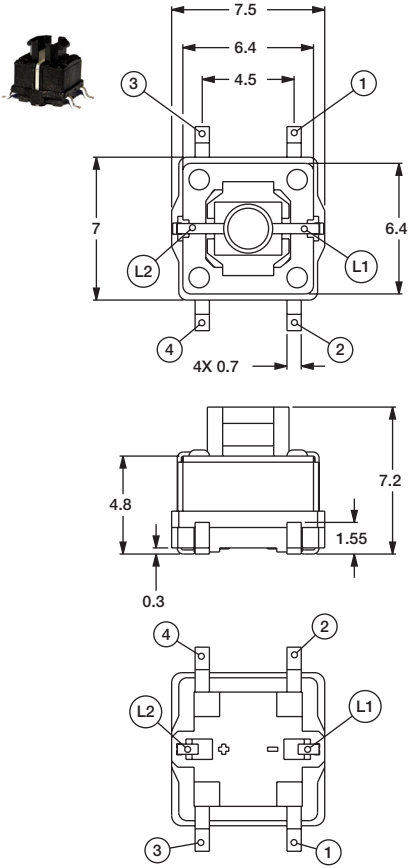


# ITS Series Illuminated Tact Switch

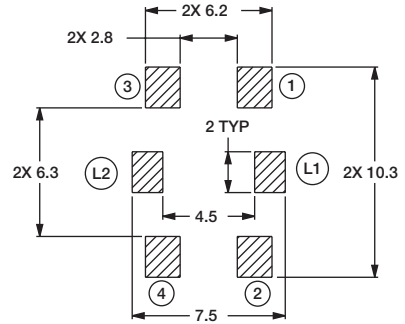
## MOUNTING STYLES

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

Tactile Switches B

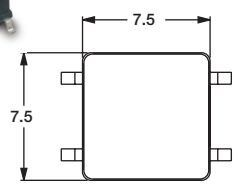
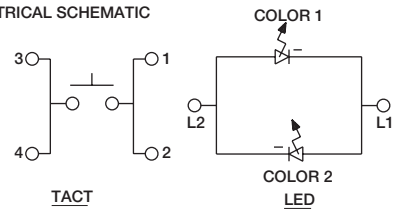


DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE (CATHODE) SEE SCHEMATIC



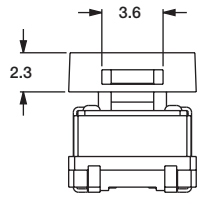
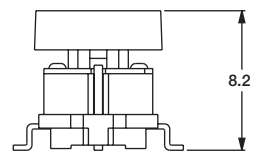
P.C.B. LAYOUT

ELECTRICAL SCHEMATIC

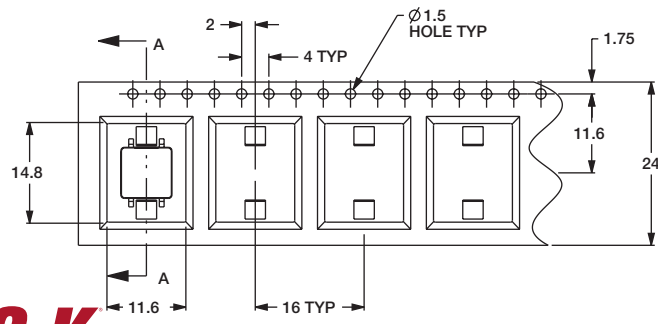


SCALE 3:1

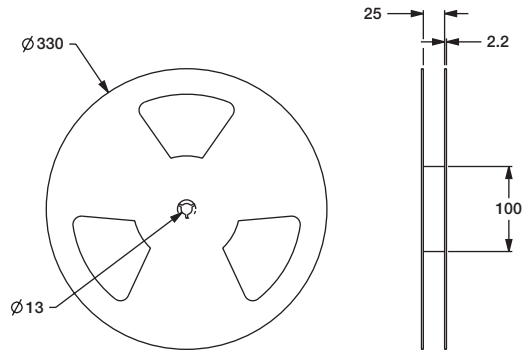
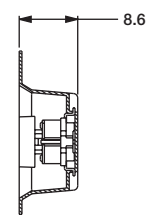
TAPE & REEL: 500 PIECES



NOTES:  
1. SWITCH WITH TEMPORARY PICK AND PLACE CAP.



SECTION A-A

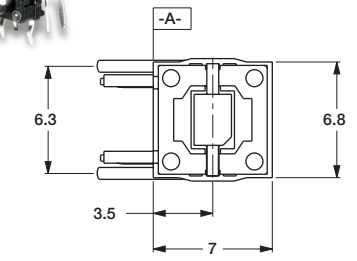


Dimensions are shown: mm  
Specifications and dimensions subject to change

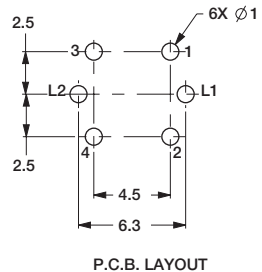
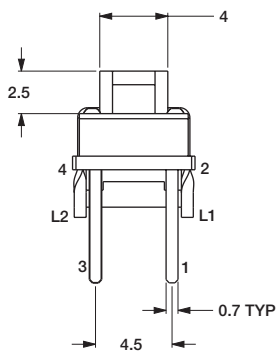
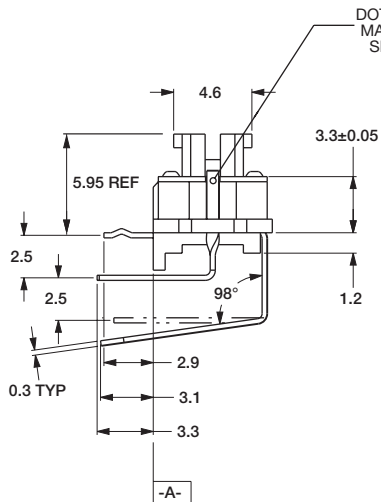
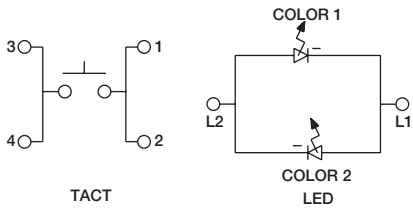


## MOUNTING STYLES

### R1 - Right Angle; Thru-hole

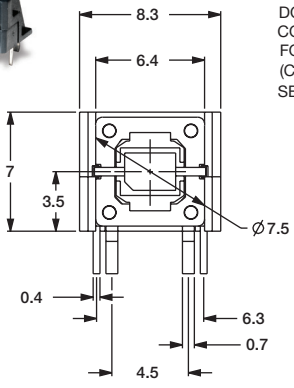


ELECTRICAL SCHEMATIC

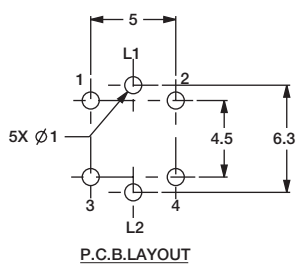
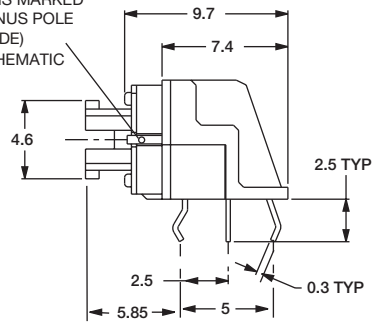


TRAY PACKAGING: 200 PIECES

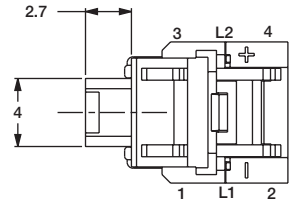
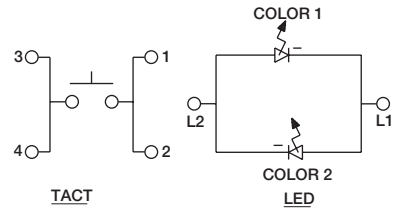
### R2 - Right Angle; Thru-hole 2.5mm leads



DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE (CATHODE) SEE SCHEMATIC



ELECTRICAL SCHEMATIC



TRAY PACKAGING: 200 PIECES

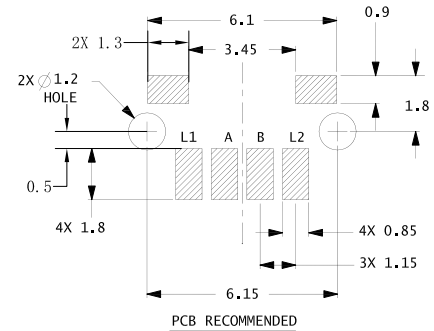
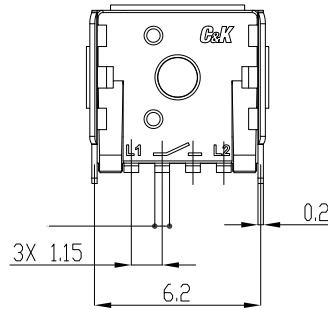
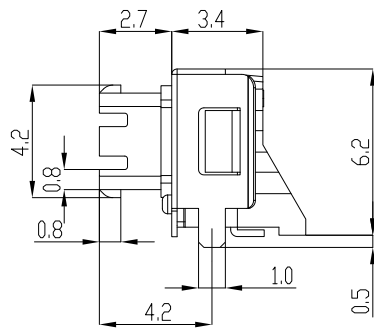
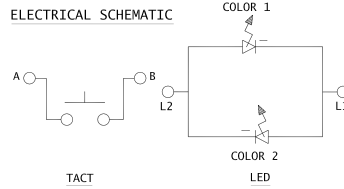
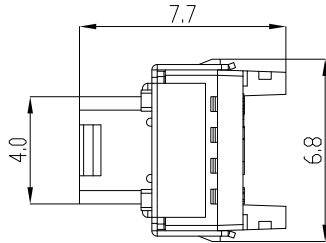
# ITS Series Illuminated Tact Switch

## MOUNTING STYLES

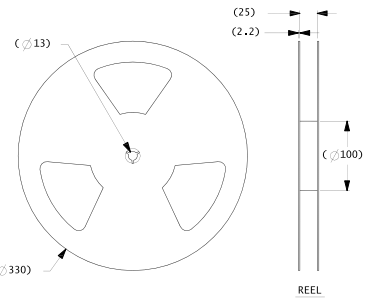
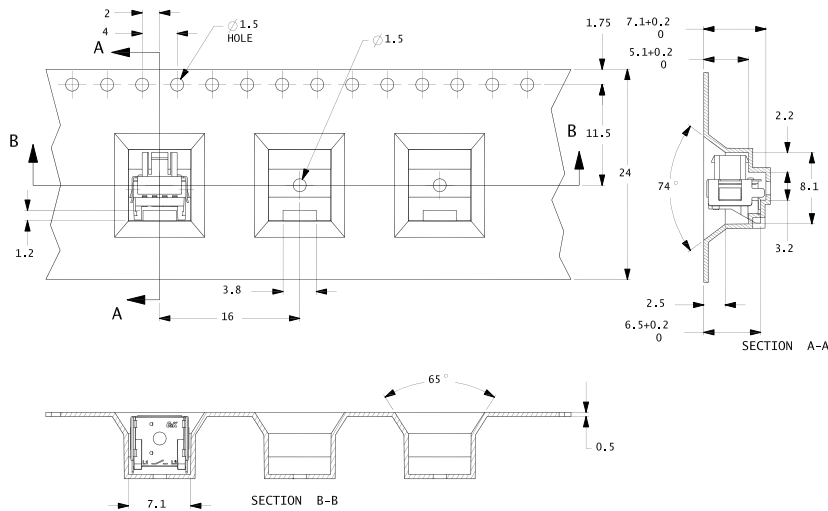
### R3N - Right Angle, SMT



Tactile Switches



TAPE & REEL: 500 PIECES



## FORCE

OPTION CODE	FORCE
<b>S</b>	Standard 160 gf - V1, V2, V3, R1, R2 options 220 gf - R3N option

## CAPS



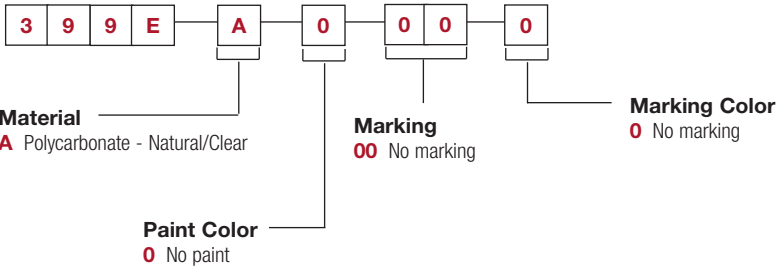
**B**

Tactile Switches

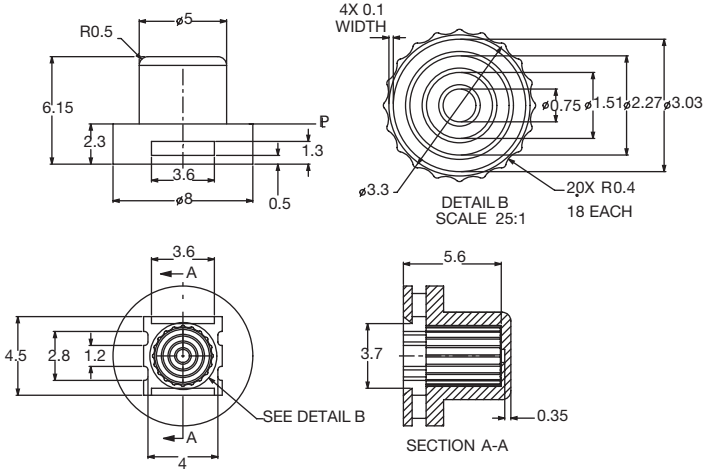
Use the individual ordering code for each cap



**399EA0000\***  
Round cap, clear



\* Not to be used with right angle versions



# ITS Series Illuminated Tact Switch

## CAPS



**400EA0000**

Natural/clear



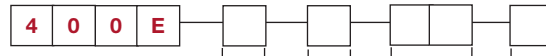
**400EB0000**

Translucent white, flat edge



**400ECA01E**

Matte silver paint laser etch, flat edge



**Material**

- A** Natural/Clear - polycarbonate\*
- B** Translucent white - polycarbonate\*
- C** Silver paint laser etch - polycarbonate

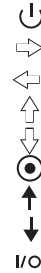
**Paint Color**

- 0** No paint\*
- A** Matte silver

**Laser Etch**

**Marking**

- 00** No marking
- 01** Power On/Off
- 04** Arrow right
- 05** Arrow left
- 06** Arrow up
- 07** Arrow down
- 09** Power
- 33** Arrow up (fill)
- 34** Arrow down (fill)
- 97** I/O



**Marking Color**

- 0** No marking
- E** Laser etch (painted caps only)

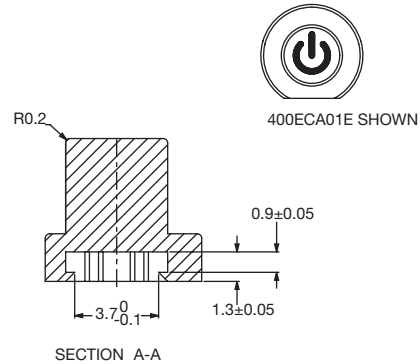
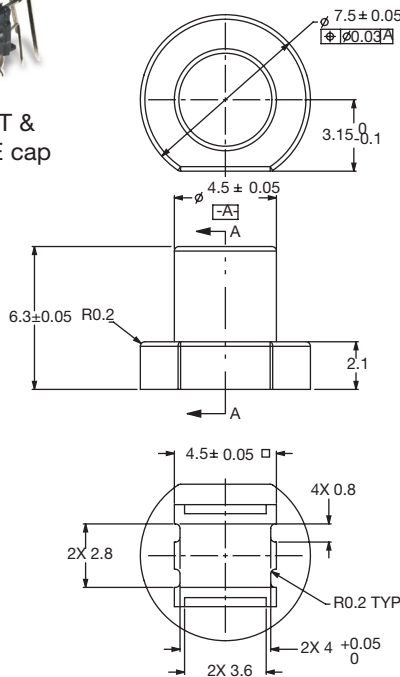
\* Material A has only one part number 400EA0000  
 \* Material B has only one part number 400EB0000  
 \* Paint color option 0 is not available for 400EC

Tactile Switches

B



ITSXXFR1ST &  
400ECA01E cap



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

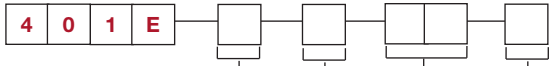


## CAPS



**401ECA06E**

Matte silver paint, laser etch,  
tall oval



**Material**

- A** Natural/clear - polycarbonate\*
- B** Translucent white - polycarbonate\*
- C** Paint laser etch - polycarbonate

**Paint Color**

- 0** No paint\*
- A** Matte silver

**Laser Etch  
Marking**

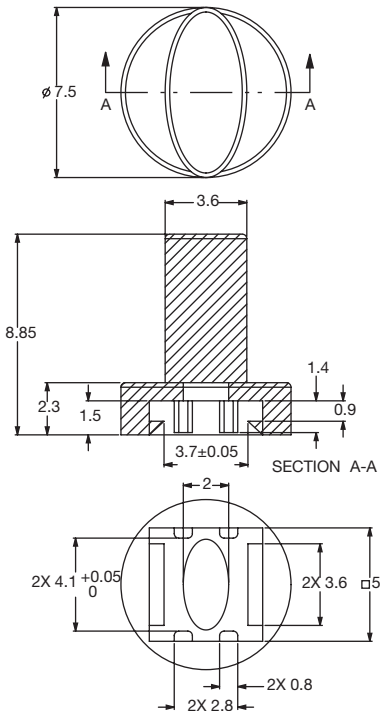
- 00** No marking
- 06** Arrow up
- 07** Arrow down
- 33** Arrow up (fill)
- 34** Arrow down (fill)



**Marking Color**

- 0** No marking
- E** Laser etch (painted caps only)

\* Material A has only one part number 400EA0000  
 \* Material B has only one part number 400EB0000  
 \* Paint color option 0 is not available for 400EC



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