

# 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

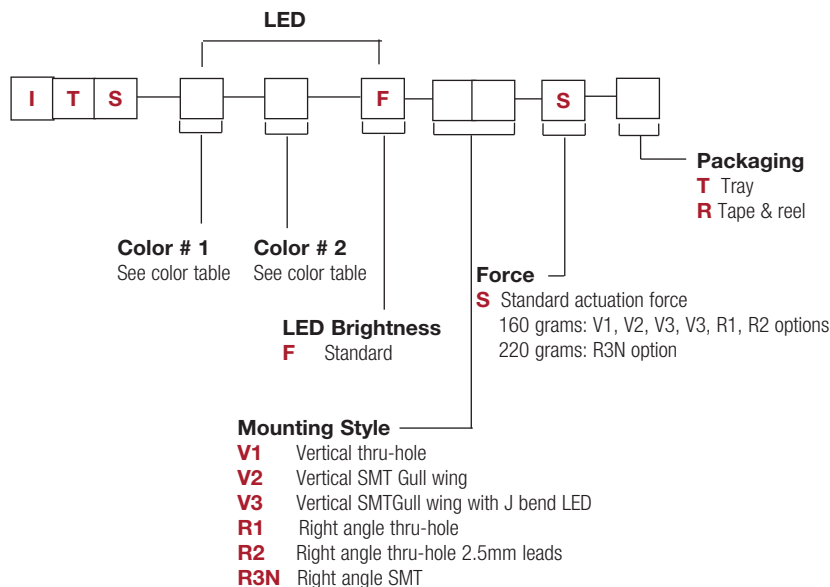
CONTACTS/TERMINALS: Base metal; brass  
Plating; Ag  
DOME: Base metal: Phosphor bronze  
Plating; Ag  
BASE: PA  
ACTUATOR: PA  
COVER: R3N option: Stainless steel  
V2 & V3 options - PPA  
Other options - PA

## 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



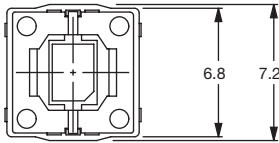
# ITS Series Illuminated Tact Switch

## LED COLOR / BRIGHTNESS

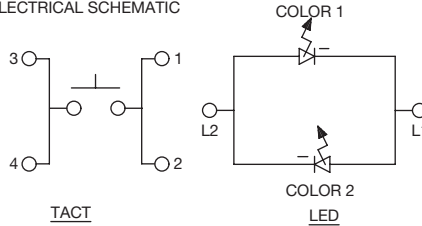
| LED Characteristic                     | units     | Standard LED Color Options |                 |                 |                 |   |                 |
|--|-----------|----------------------------|-----------------|-----------------|-----------------|---|-----------------|
|  |           | Red (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<br>X= 0.25 ~ 0.33<br>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

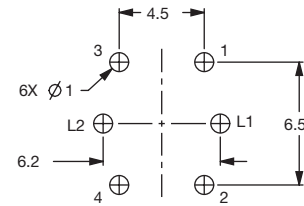
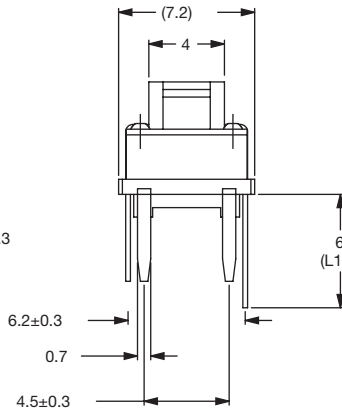
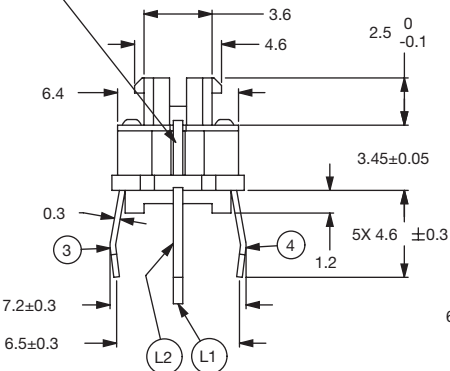
### V1 - Vertical Thru-hole



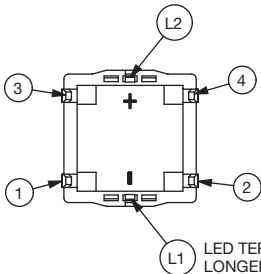
ELECTRICAL SCHEMATIC



DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE SEE SCHEMATIC



P.C.B. LAYOUT



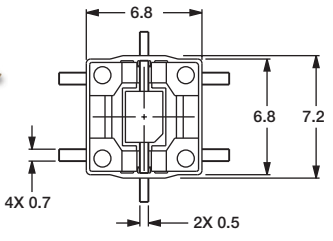
LED TERMINAL L1 IS TRIMMED LONGER THAN TERMINAL L2

TRAY PACKAGING: 200 PIECES

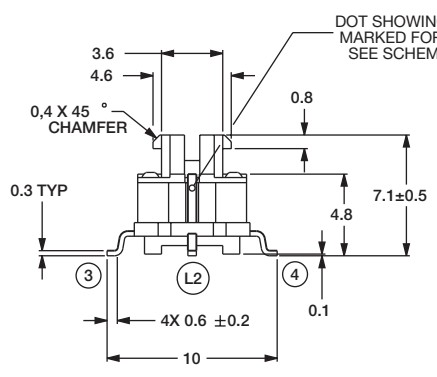
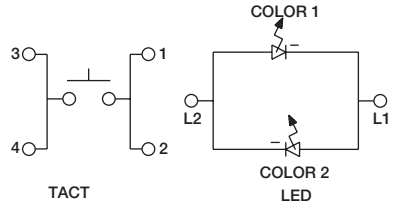
## MOUNTING STYLES

B  
Tactile Switches

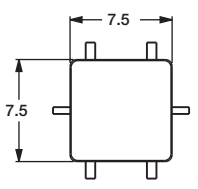
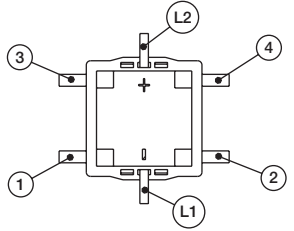
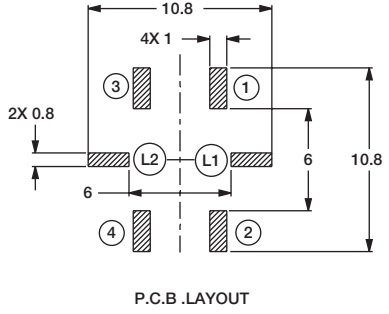
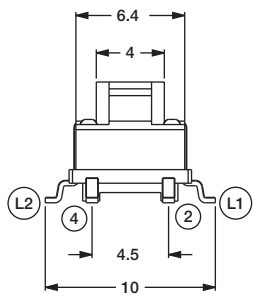
### V2 - Vertical SMT; Gullwing



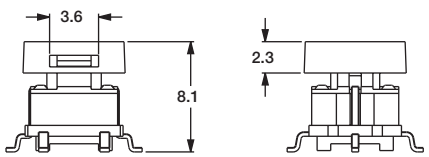
ELECTRICAL SCHEMATIC



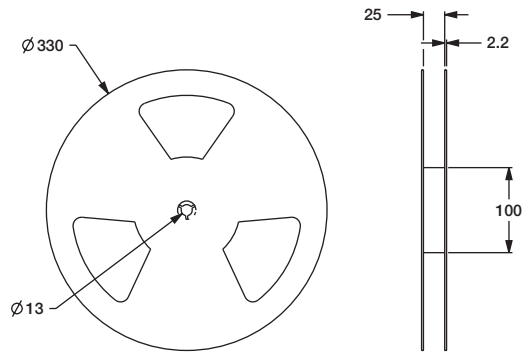
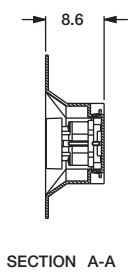
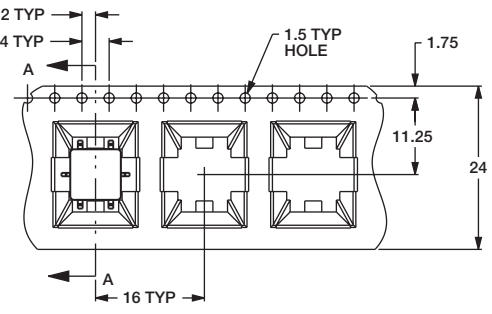
DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE (CATHODE) SEE SCHEMATIC



TAPE & REEL: 500 PIECES



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

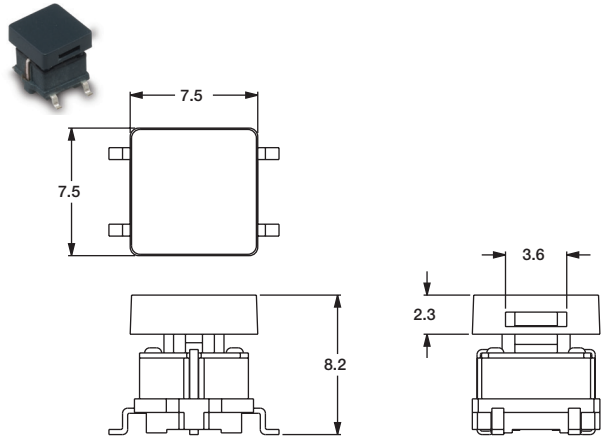
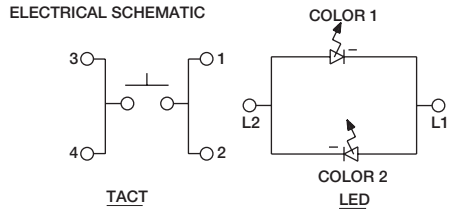
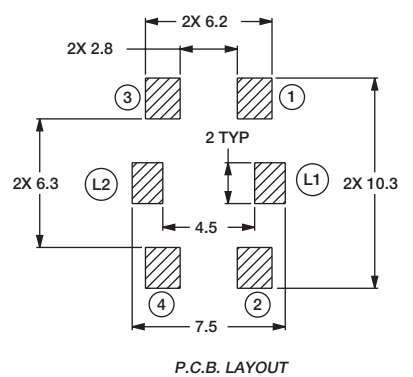
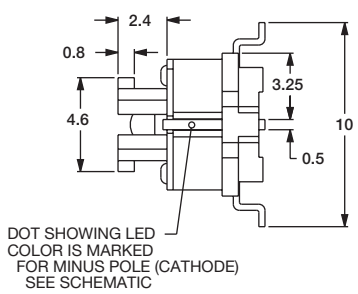
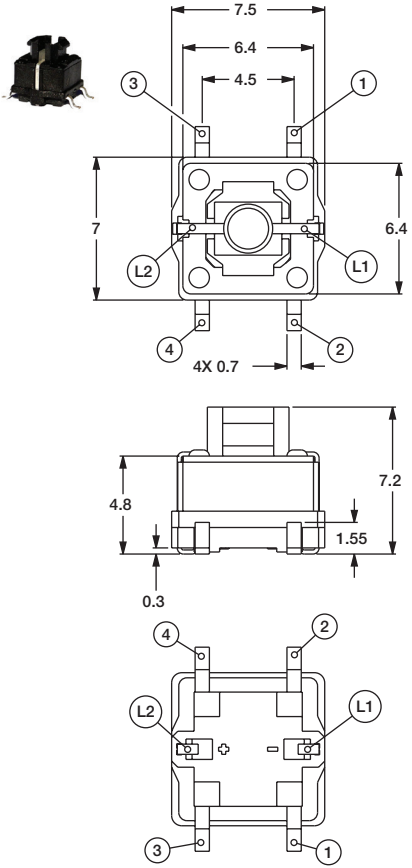


# ITS Series Illuminated Tact Switch

## MOUNTING STYLES

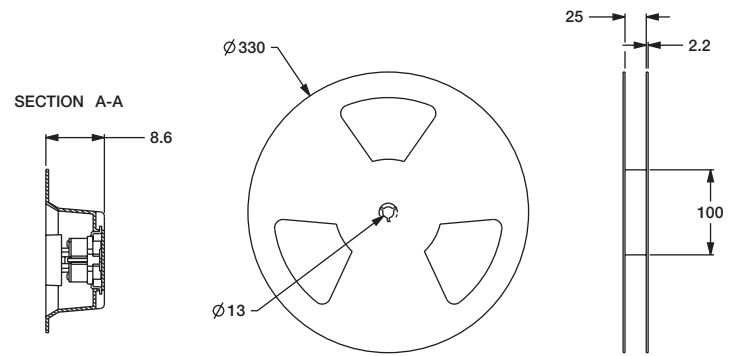
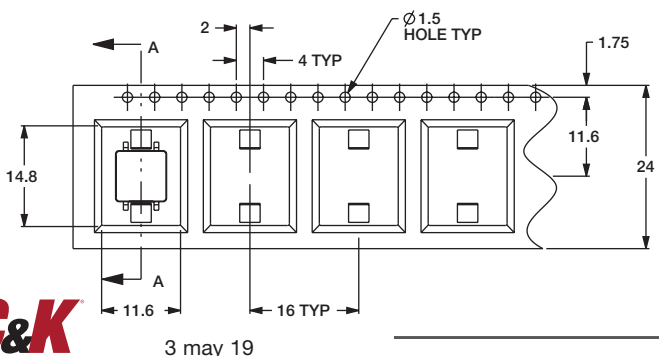
### V3 - Vertical SMT; Gull wing with J bend LED

Tactile Switches B



TAPE & REEL: 500 PIECES

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



Dimensions are shown: mm  
Specifications and dimensions subject to change

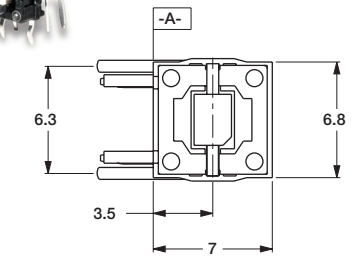


3 may 19

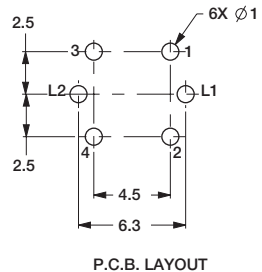
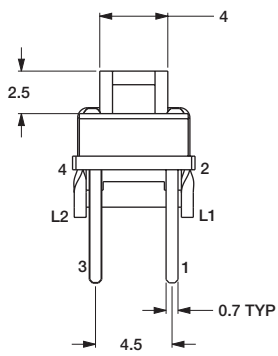
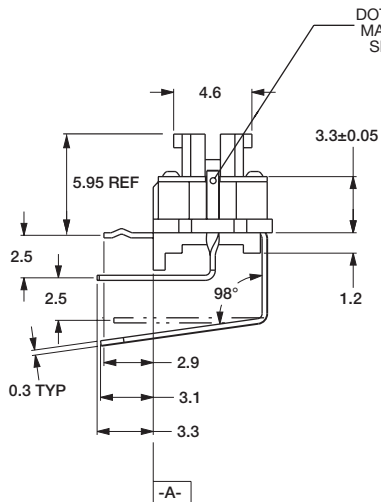
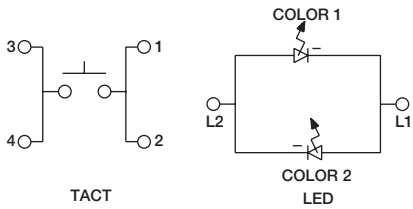
## MOUNTING STYLES

B  
Tactile Switches

### R1 - Right Angle; Thru-hole

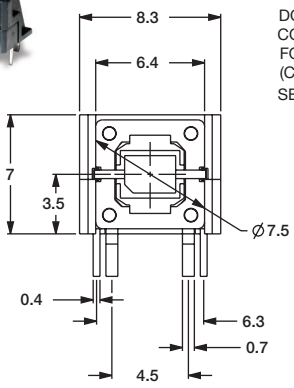


ELECTRICAL SCHEMATIC

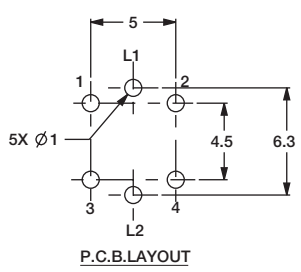
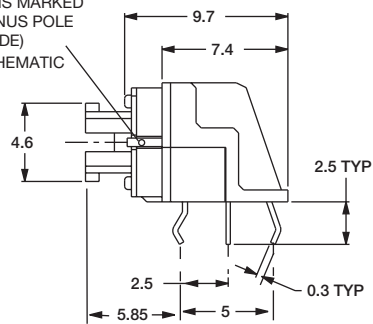


TRAY PACKAGING: 200 PIECES

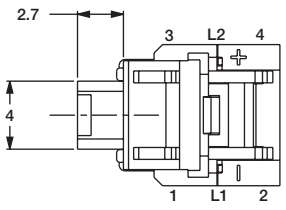
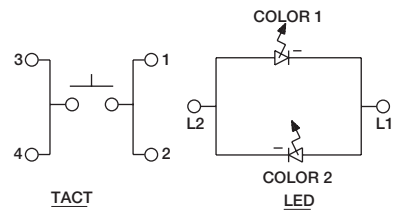
### R2 - Right Angle; Thru-hole 2.5mm leads



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



ELECTRICAL SCHEMATIC



TRAY PACKAGING: 200 PIECES



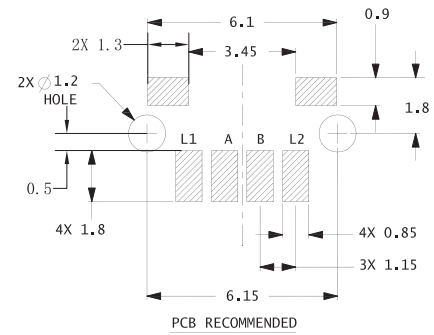
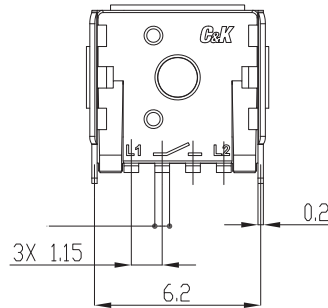
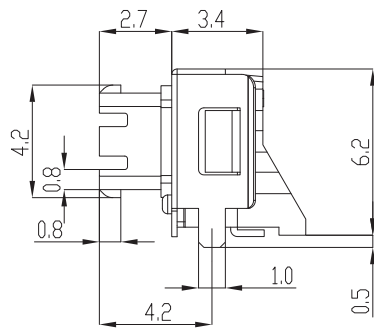
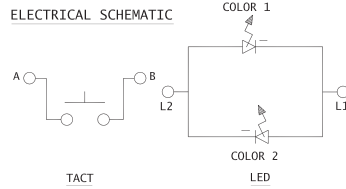
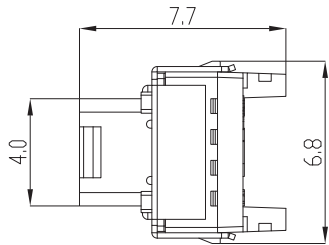
# ITS Series Illuminated Tact Switch

## MOUNTING STYLES

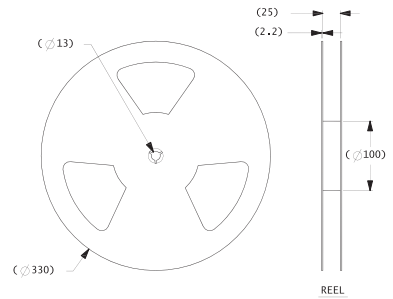
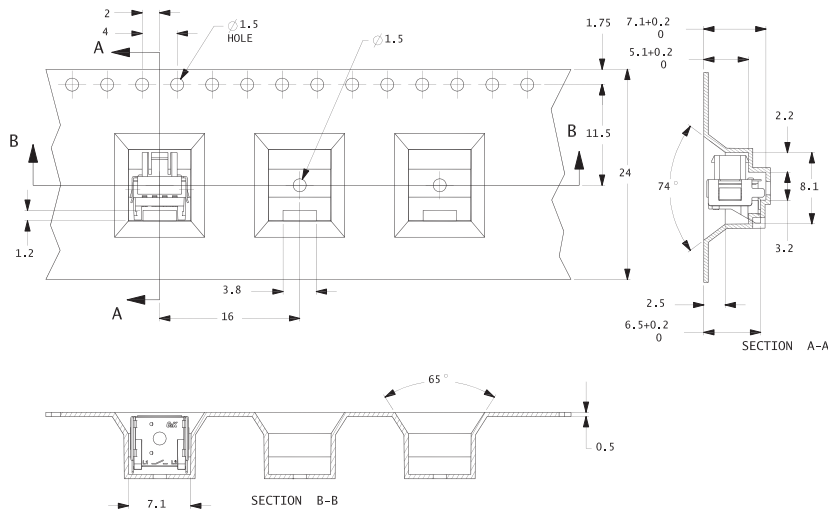
### R3N - Right Angle, SMT



Tactile Switches



TAPE & REEL: 500 PIECES



## FORCE

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

## CAPS



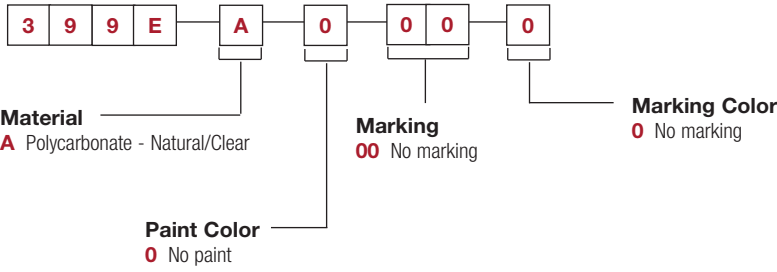
**B**

Tactile Switches

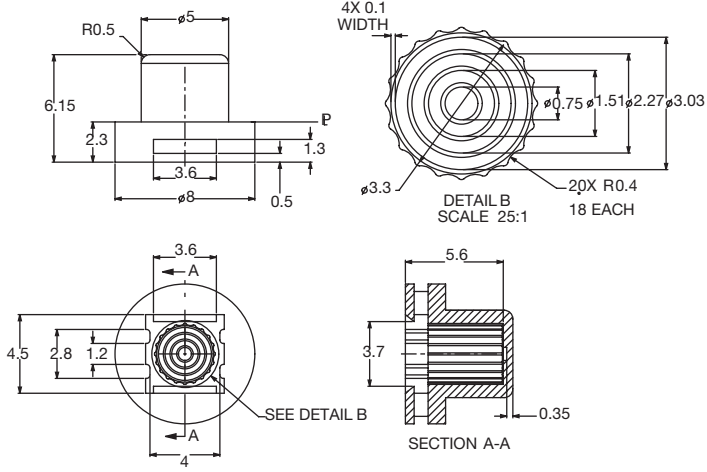
Use the individual ordering code for each cap



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



\* Not to be used with right angle versions



# ITS Series Illuminated Tact Switch

## CAPS



**400EA0000**

Natural/clear



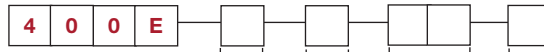
**400EB0000**

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

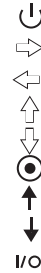
### Paint Color

- 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

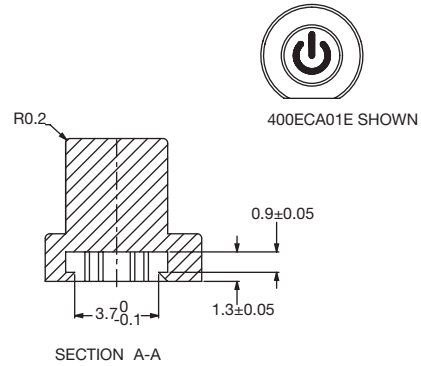
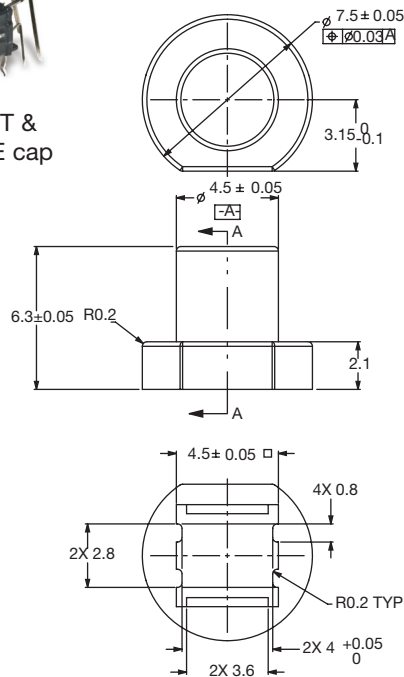
- 0** No marking
- E** Laser etch (painted caps only)

Tactile Switches

B



ITSXXFR1ST &  
400ECA01E cap



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



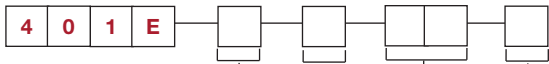
# ITS Series Illuminated Tact Switch

## 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

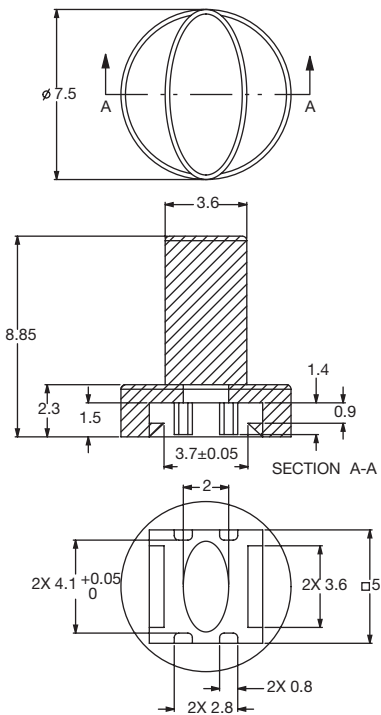
**Laser Etch  
Marking**

- 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)



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



**B**  
Tactile Switches

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## C&K Switches:

[ITS23FR2ST](#) [ITS50FR1ST](#) [ITS50FV1ST](#) [ITS13FV2SR](#) [ITS40FV1ST](#) [ITS13FR2ST](#) [ITS50FR2ST](#) [ITS23FV2SR](#)  
[ITS13FV3SR](#) [ITS40FR2ST](#) [ITS40FR1ST](#) [ITS23FR1ST](#) [ITS50FV2SR](#) [ITS50FV3SR](#) [ITS23FV3SR](#) [ITS23FV1ST](#)  
[ITS13FR1ST](#) [ITS40FV2SR](#) [ITS13FV1ST](#) [ITS40FV3SR](#)