

ITS Series

Illuminated Tactile Switch



Specifications

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

Mechanical Characteristics

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 Characteristics

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

Environmental Characteristics

Operating Temperature	-25°C to 70°C
Storage Temperature	-25°C to 80°C

Process

Soldering	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

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.

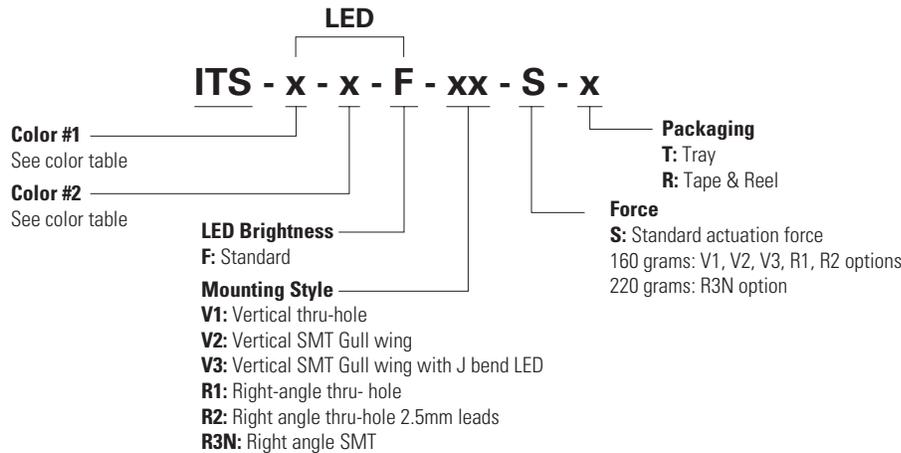
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Ordering Number

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

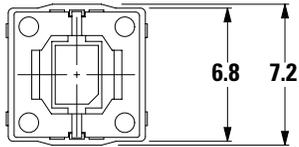
ITS Series

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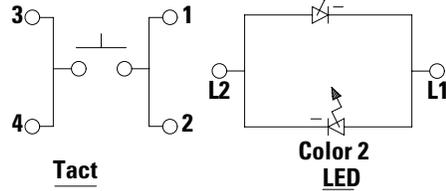


Mounting Styles

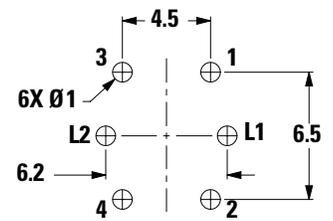
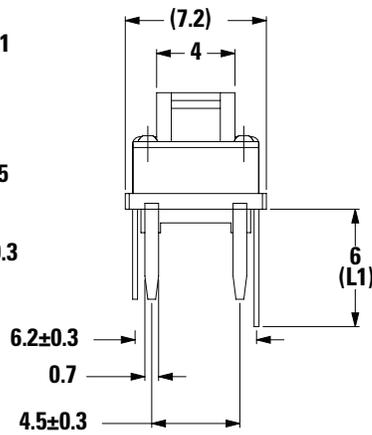
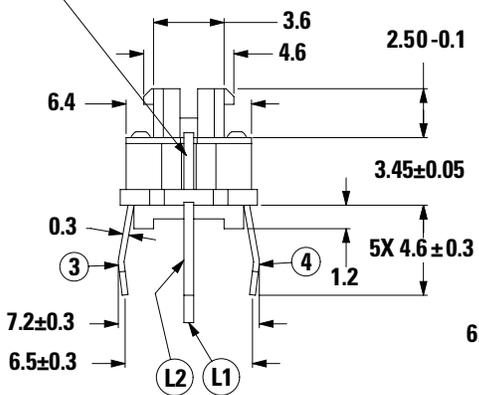
V1 - Vertical Thru-hole



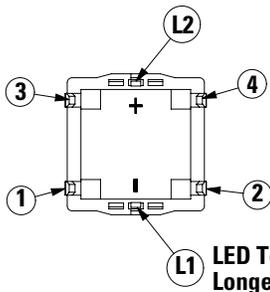
Electrical Schematic



Dot Showing LED Color is Marked for Minus Pole See Schematic



P.C.B. Layout



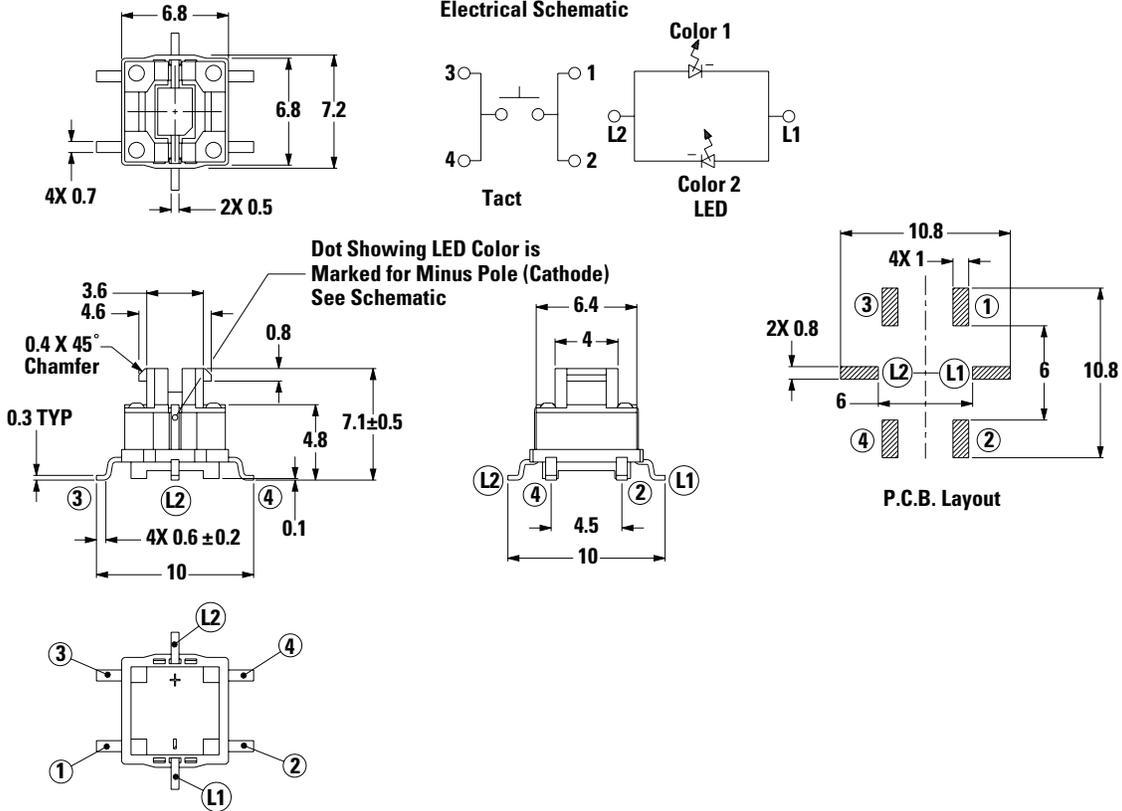
Note:
Tray packaging: 200 pieces

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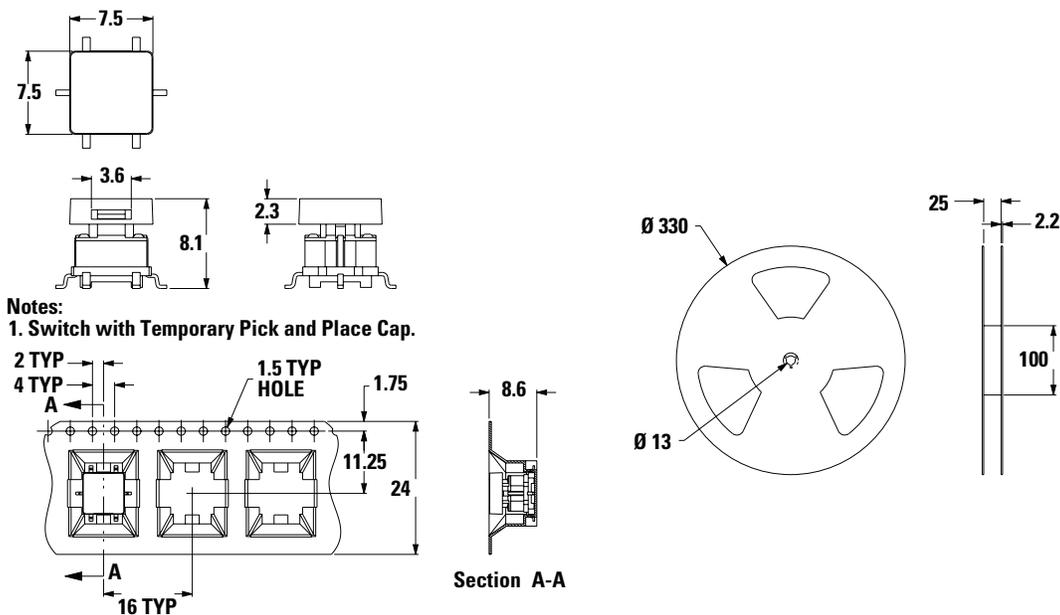
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V2 - Vertical SMT: Gullwing



Tape and Reel



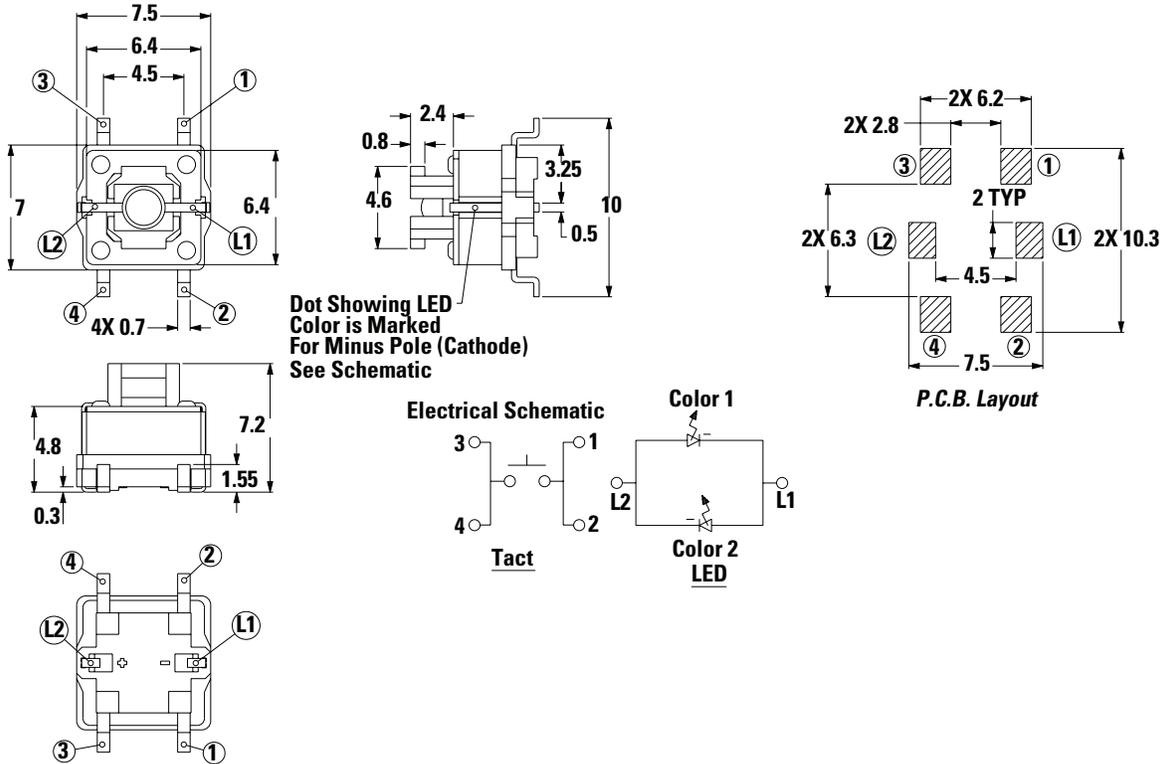
Note:
Tape and Reel: 500 pieces

ITS Series

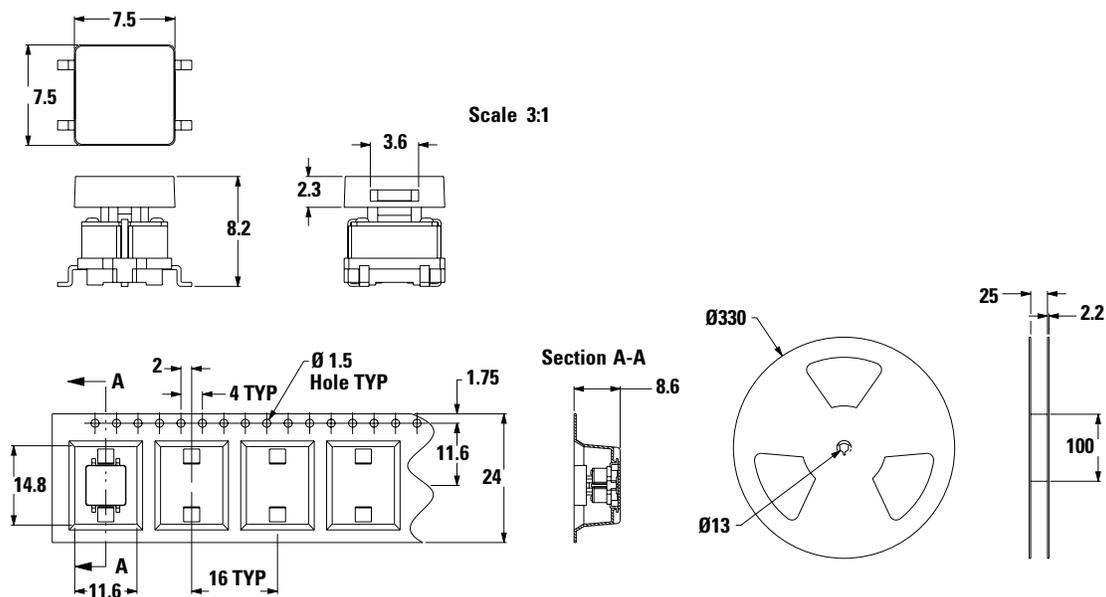
Illuminated Tactile Switch



V3 - Vertical SMT: Gull wing with J bend LED



Tape and Reel



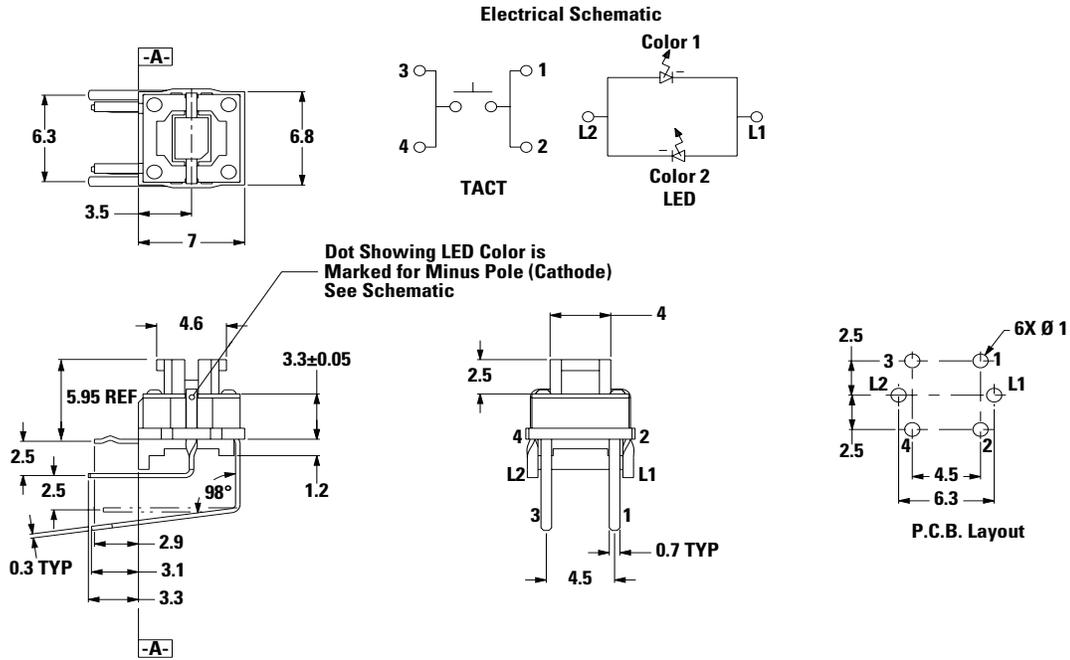
- Notes:**
1. Switch with Temporary Pick and Place Cap.
 2. Tape and Reel: 500 pieces

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Illuminated Tactile Switch

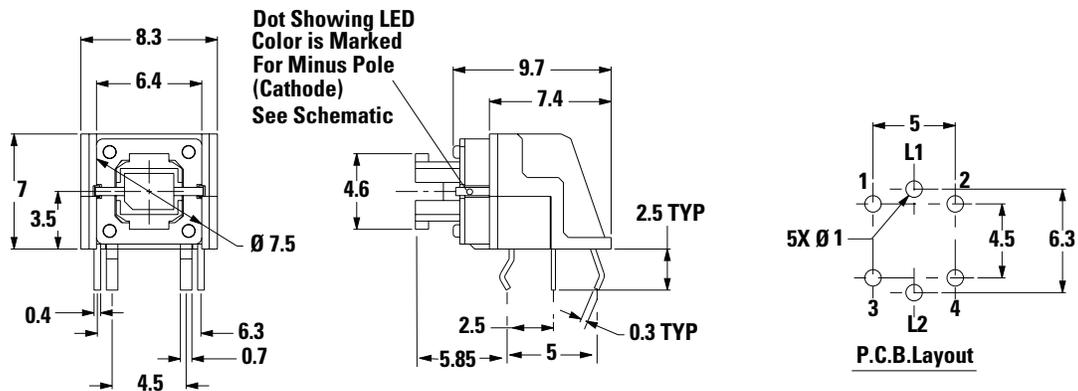


R1 - Right Angle: Thru-hole



Note:
Tray packaging: 200 pieces

R2 - Right Angle: Thru-hole 2.5mm leads



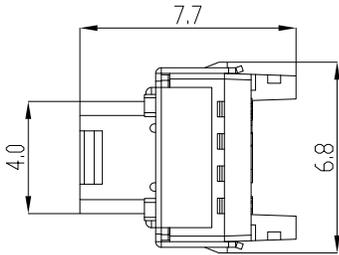
Note:
Tray packaging: 200 pieces

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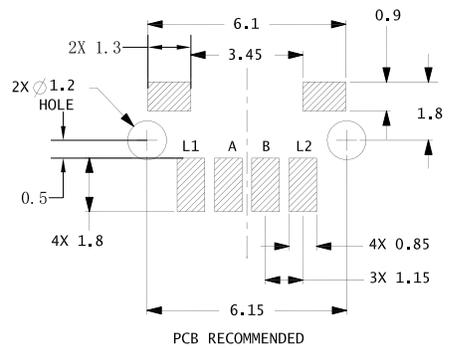
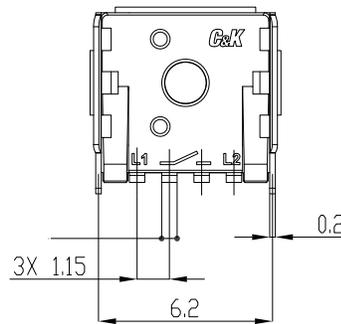
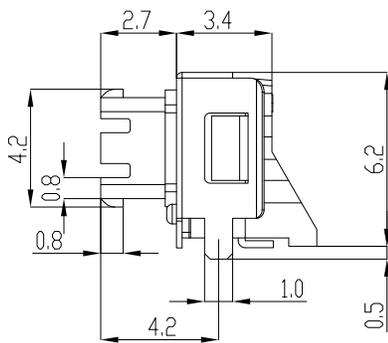
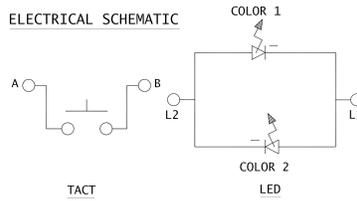
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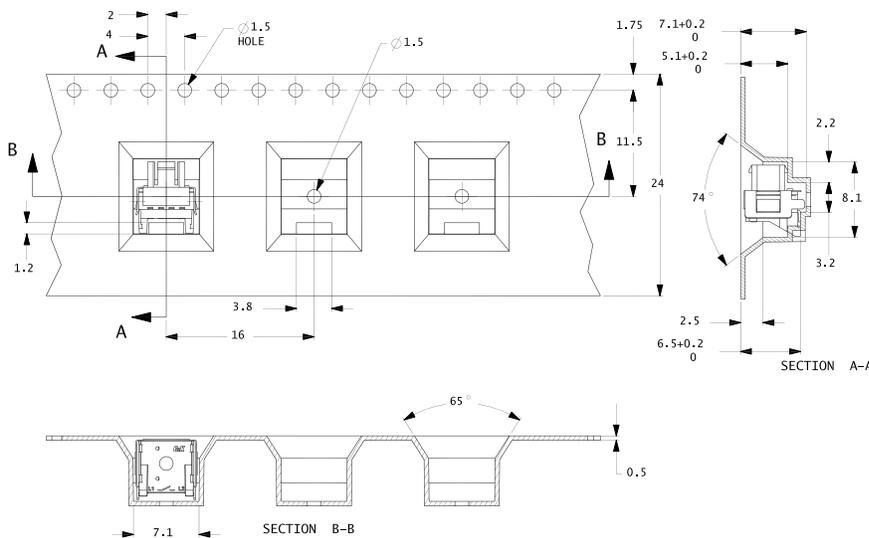
R3N - Right Angle, SMT



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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Caps

399E - A - 0 - 00 - 0

Material:
A: Polycarbonate - Natural/Clear

Paint Color
0: No paint

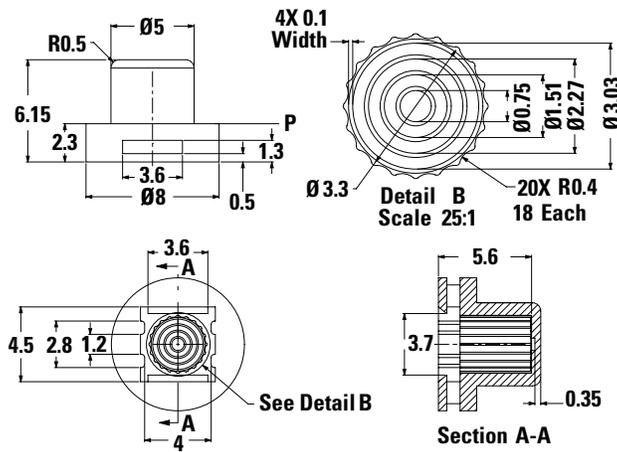
Marking Color
0: No marking

Marking
00: No Marking

Notes:
 Use the individual ordering code for each cap

Note:
 All caps not to be used to R3N

399EA0000¹ Round cap, clear



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

400E - x - xx - x

Material:
A: Polycarbonate¹ - Natural/Clear
B: Polycarbonate² - Translucent white
C: Polycarbonate - Silver paint laser tech

Paint Color
0: No paint³
A: Matte Silver

Marking Color
0: No marking
E: Laser etch (painted caps only)

Laser Etch
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) 

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



400EA0000

Natural/clear



400EB0000

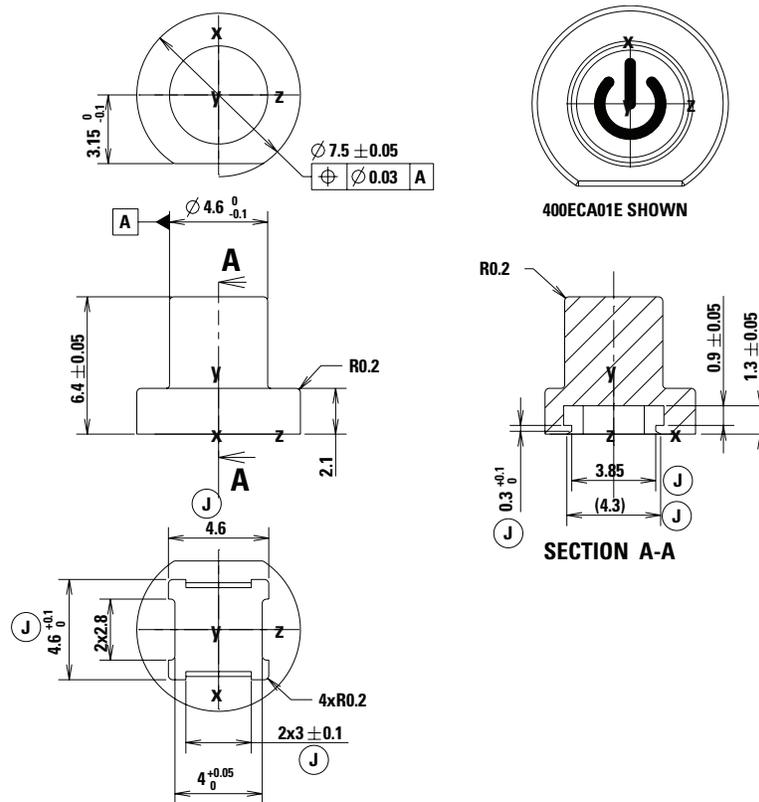
Translucent white, flat edge



400ECA01E

Matte silver paint
laser etch, flat edge

ITSXXFR1ST & 400ECA01E cap



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

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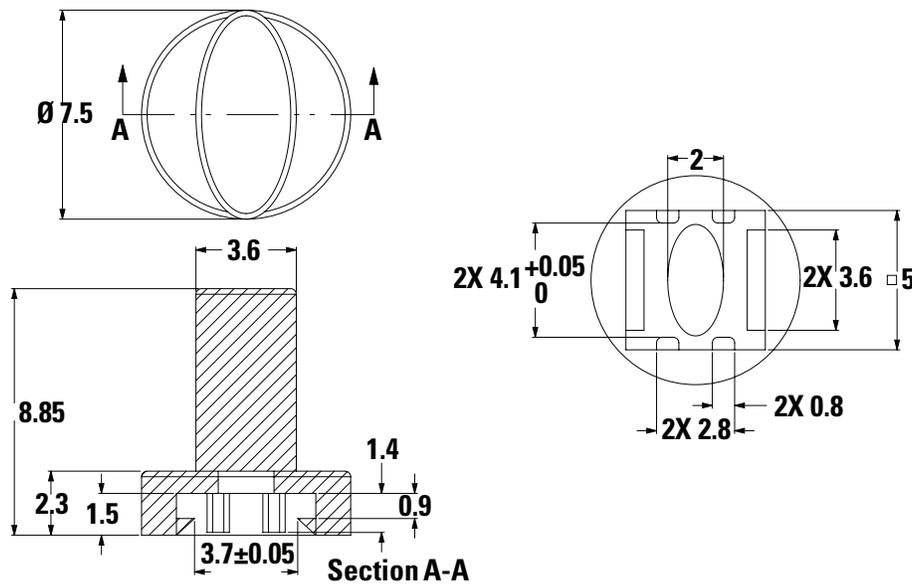


401E - x - xx - x

<p>Material:</p> <p>A: Polycarbonate¹ - Natural/Clear</p> <p>B: Polycarbonate² - Translucent white</p> <p>C: Polycarbonate - paint laser tech</p> <p>Paint Color</p> <p>0: No paint³</p> <p>A: Matte Silver</p>	<p>Laser Etch</p> <p>00: No Marking</p> <p>06: Arrow up</p> <p>07: Arrow down</p> <p>33: Arrow up (fill)</p> <p>34: Arrow down (fill)</p>	<p>Marking Color</p> <p>0: No marking</p> <p>E: Laser etch (painted caps only)</p> <p style="text-align: center;"> ↑ ↓ ↑↓ ↓↑ </p>
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- 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

Dimensions



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

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