

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)

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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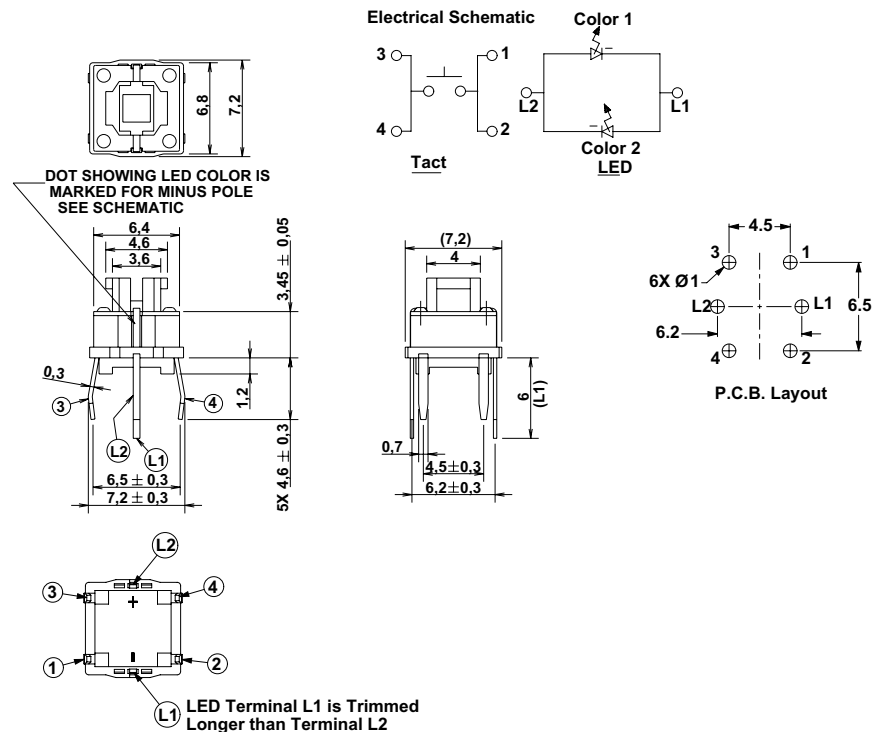


LED Color / Brightness

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

Mounting Styles

V1 - Vertical Thru-hole



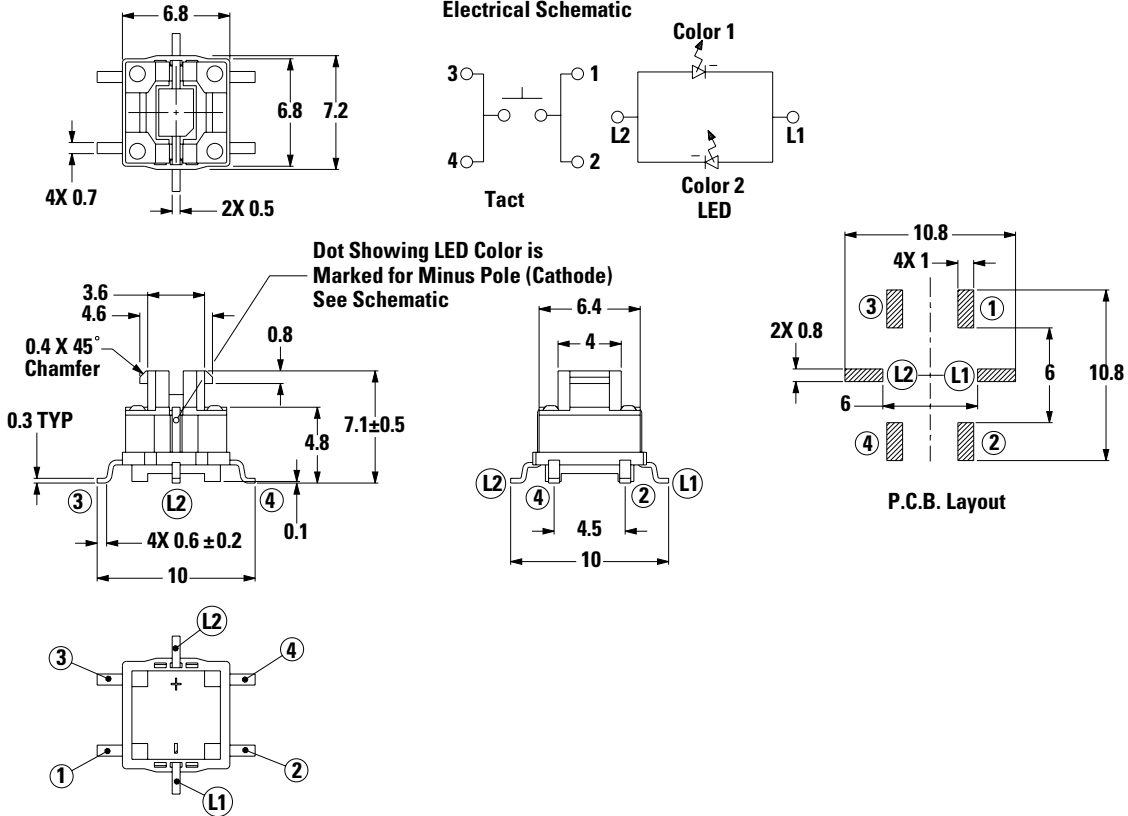
Note:
Tray packaging: 200 pieces

ITS Series

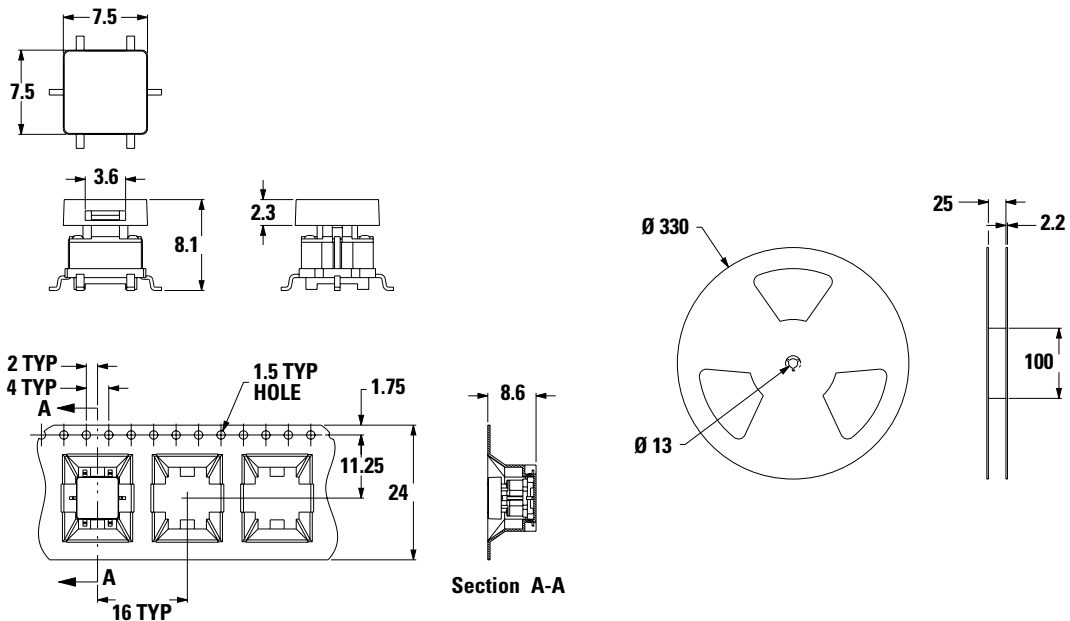
Illuminated Tactile Switch



V2 - Vertical SMT: Gullwing



Tape and Reel



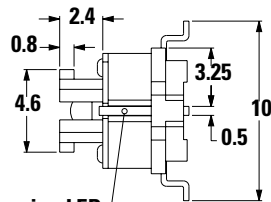
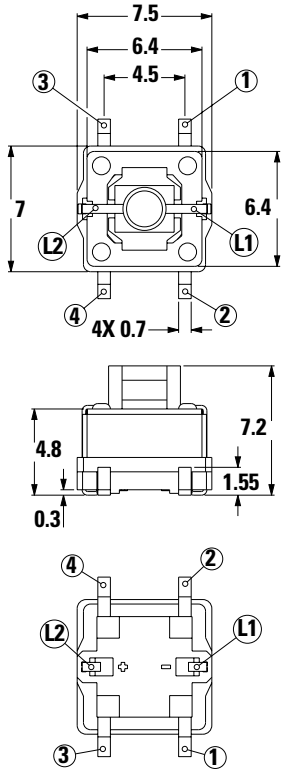
Note:
 V2 version product with temporary Pick and Place Cap.
 Tape and Reel: 500 pieces

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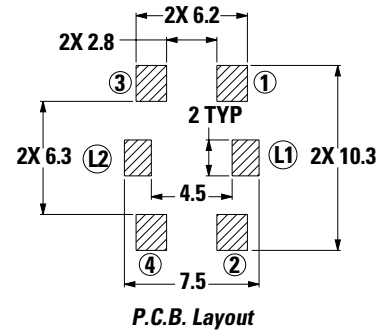
Illuminated Tactile Switch



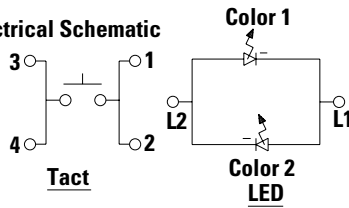
V3 - Vertical SMT: Gull wing with J bend LED



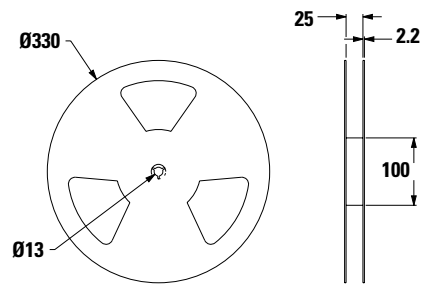
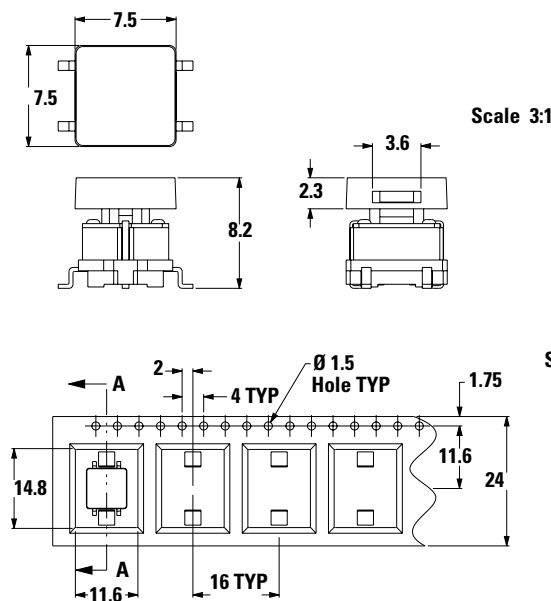
Dot Showing LED Color is Marked For Minus Pole (Cathode) See Schematic



Electrical Schematic



Tape and Reel



Notes:

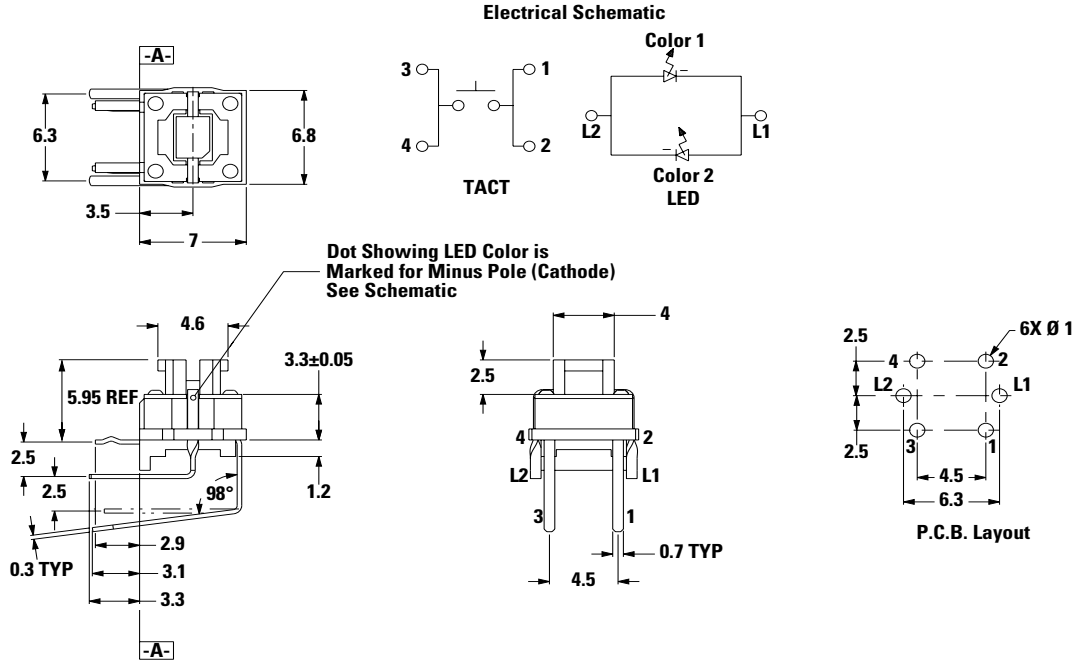
1. Switch with Temporary Pick and Place Cap.
2. Tape and Reel: 500 pieces

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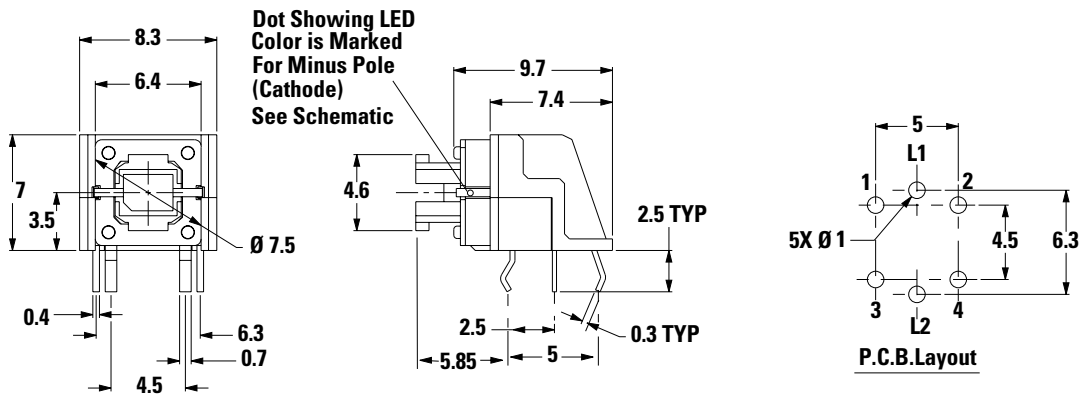


R1 - Right Angle: Thru-hole



Note:
Tray packaging: 200 pieces

R2 - Right Angle: Thru-hole 2.5mm leads



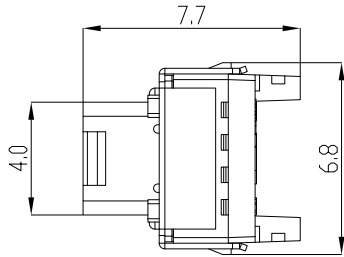
Note:
Tray packaging: 200 pieces

ITS Series

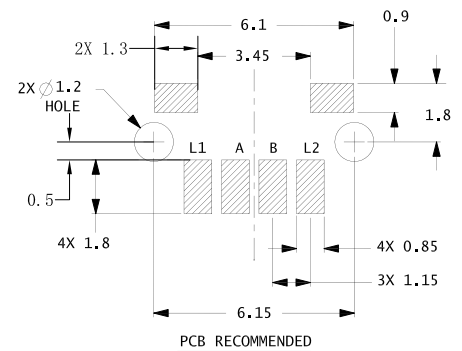
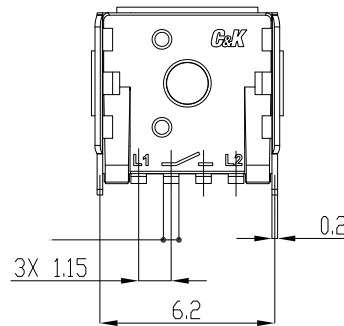
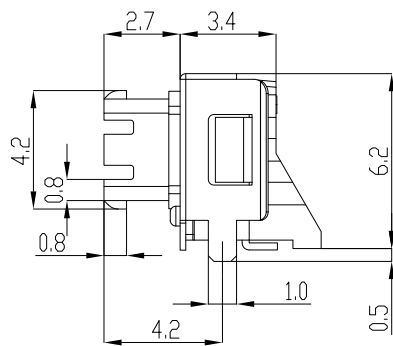
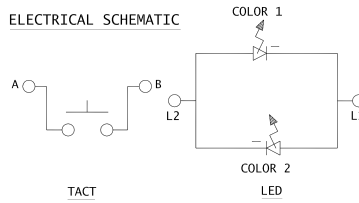
Illuminated Tactile Switch



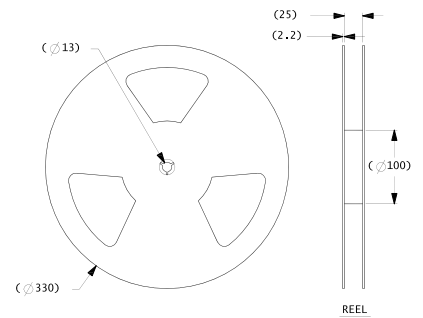
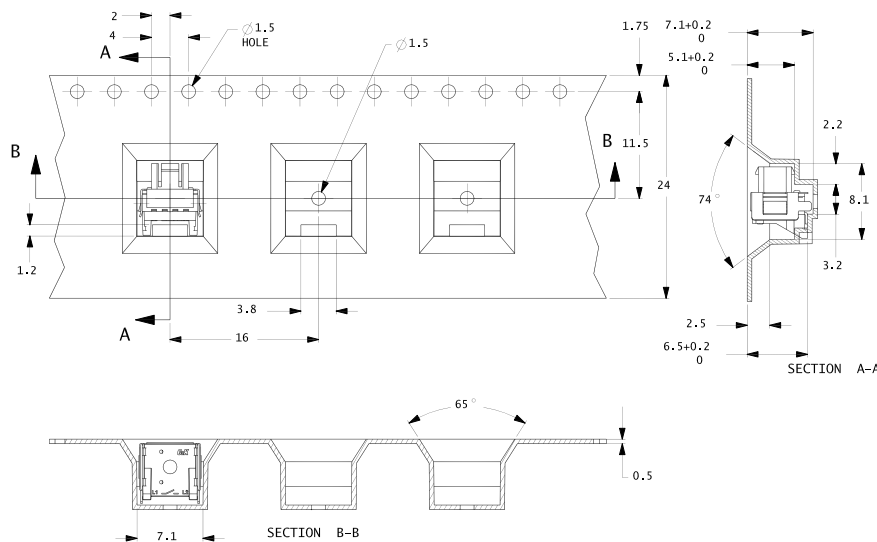
R3N - Right Angle, SMT



ELECTRICAL SCHEMATIC



Tape & Reel



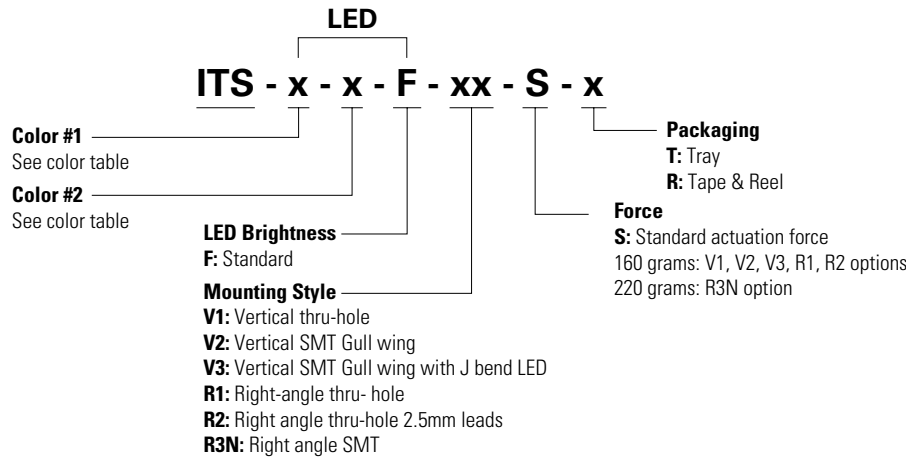
ITS Series

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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
- 13:** Red/Green
- 14:** Red/Blue
- 20:** Yellow
- 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

Mechanical Characteristics

Thru Hole

Supply Status	Littelfuse Orderable Part Number	Description	Contact & Terminals Plating	Operating Force Fa (Newtons)	Operating Life (operations)	Electrical Travel (mm)	Orientation & Mounting	LED Color	Packaging
✓	ITS00FR1ST	SWITCH ITS00FR1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right-angle thru-hole	No light	Tray
✓	ITS00FV1ST	SWITCH ITS00FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	No light	Tray
✓	ITS13FR1ST	SWITCH ITS13FR1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right-angle thru-hole	Red/Green	Tray
✓	ITS13FR2ST	SWITCH ITS13FR2ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right angle thru-hole 2.5mm leads	Red/Green	Tray
✓	ITS13FV1ST	SWITCH ITS13FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	Red/Green	Tray
✓	ITS14FR2ST	SWITCH ITS14FR2ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right angle thru-hole 2.5mm leads	Red/Blue	Tray
✓	ITS14FV1ST	SWITCH ITS14FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	Red/Blue	Tray
✓	ITS20FV1ST	SWITCH ITS20FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	Yellow	Tray
✓	ITS23FR1ST	SWITCH ITS23FR1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right-angle thru-hole	Yellow/Green	Tray
✓	ITS23FR2ST	SWITCH ITS23FR2ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right angle thru-hole 2.5mm leads	Yellow/Green	Tray
✓	ITS23FV1ST	SWITCH ITS23FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	Yellow/Green	Tray
✓	ITS30FR2ST	SWITCH ITS30FR2ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right angle thru-hole 2.5mm leads	Green	Tray
✓	ITS30FV1ST	SWITCH ITS30FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	Green	Tray
✓	ITS31FR1ST	SWITCH ITS31FR1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right-angle thru-hole	Green/Red	Tray
✓	ITS40FR1ST	SWITCH ITS40FR1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right-angle thru-hole	Blue	Tray
✓	ITS40FR2ST	SWITCH ITS40FR2ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right angle thru-hole 2.5mm leads	Blue	Tray
✓	ITS40FV1ST	SWITCH ITS40FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	Blue	Tray
✓	ITS41FV1ST	SWITCH ITS41FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	Blue/Red	Tray
✓	ITS50FR1ST	SWITCH ITS50FR1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right-angle thru-hole	White	Tray
✓	ITS50FR2ST	SWITCH ITS50FR2ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Right angle thru-hole 2.5mm leads	White	Tray
✓	ITS50FV1ST	SWITCH ITS50FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	White	Tray
✓	ITS60FV1ST	SWITCH ITS60FV1ST	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical thru-hole	True green	Tray

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SMT

Supply Status	Littelfuse Orderable Part Number	Description	Contact & Terminals Plating	Operating Force Fa (Newtons)	Operating Life (operations)	Electrical Travel (mm)	Orientation & Mounting	LED Color	Packaging
✓	ITS00FV2SR	SWITCH ITS00FV2SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing	No light	Tape & Reel
✓	ITS10FR3NSR	SWITCH ITS10FR3NSR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Right angle SMT	Red	Tape & Reel
✓	ITS10FV2SR	SWITCH ITS10FV2SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing	Red	Tape & Reel
✓	ITS10FV3SR	SWITCH ITS10FV3SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing with J bend LED	Red	Tape & Reel
✓	ITS13FR3NSR	SWITCH ITS13FR3NSR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Right angle SMT	Red/Green	Tape & Reel
✓	ITS13FV2SR	SWITCH ITS13FV2SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing	Red/Green	Tape & Reel
✓	ITS13FV3SR	SWITCH ITS13FV3SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing with J bend LED	Red/Green	Tape & Reel
✓	ITS14FR3NSR	SWITCH ITS14FR3NSR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Right angle SMT	Red/Blue	Tape & Reel
✓	ITS14FV3SR	SWITCH ITS14FV3SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing with J bend LED	Red/Blue	Tape & Reel
✓	ITS20FV3SR	SWITCH ITS20FV3SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing with J bend LED	Yellow	Tape & Reel
✓	ITS23FR3NSR	SWITCH ITS23FR3NSR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Right angle SMT	Yellow/Green	Tape & Reel
✓	ITS23FV2SR	SWITCH ITS23FV2SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing	Yellow/Green	Tape & Reel
✓	ITS23FV3SR	SWITCH ITS23FV3SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing with J bend LED	Yellow/Green	Tape & Reel
✓	ITS30FR3NSR	SWITCH ITS30FR3NSR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Right angle SMT	Green	Tape & Reel
✓	ITS30FV3SR	SWITCH ITS30FV3SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing with J bend LED	Green	Tape & Reel
✓	ITS32FR3NSR	SWITCH ITS32FR3NSR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Right angle SMT	Green/Yellow	Tape & Reel
✓	ITS40FR3NSR	SWITCH ITS40FR3NSR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Right angle SMT	Blue	Tape & Reel
✓	ITS40FV2SR	SWITCH ITS40FV2SR	Silver	1.6 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing	Blue	Tape & Reel
✓	ITS50FV3SR	SWITCH ITS50FV3SR	Silver	2.2 ± 0.5	50,000	0.25 ± 0.1	Vertical SMT Gull wing with J bend LED	White	Tape & Reel

ITS Series

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Caps

399E - A - 0 - 00 - 0

Material:
A: Polycarbonate - Natural/Clear

Paint Color
0: No paint

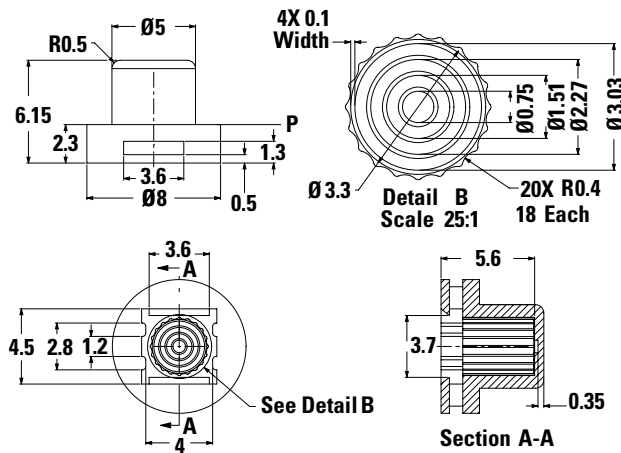
Marking Color
0: No marking

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

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400EA0000

Natural/clear



400EB0000

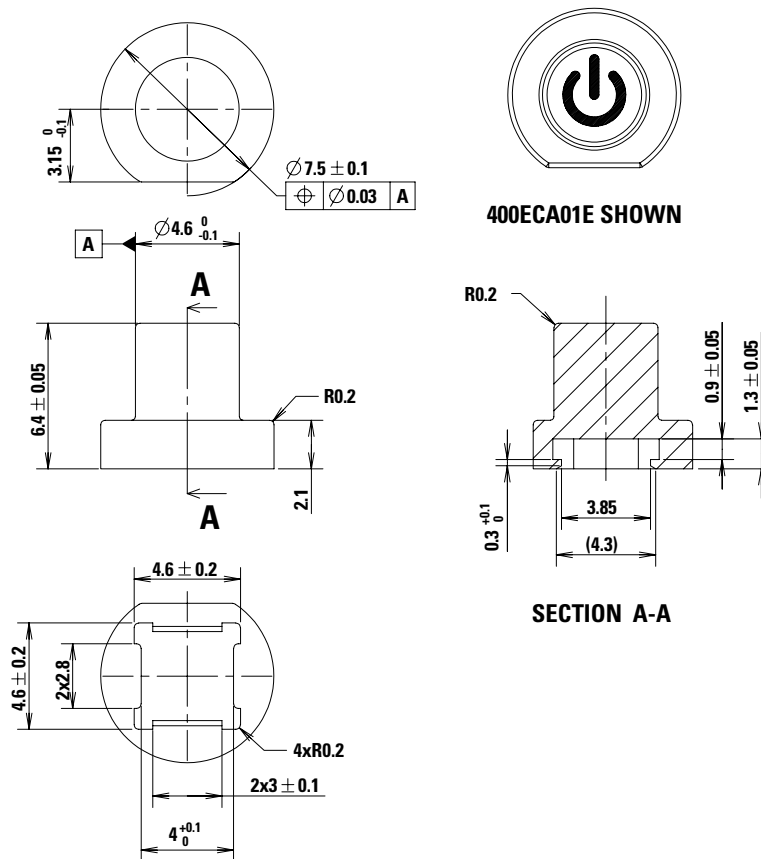
Translucent white, flat edge



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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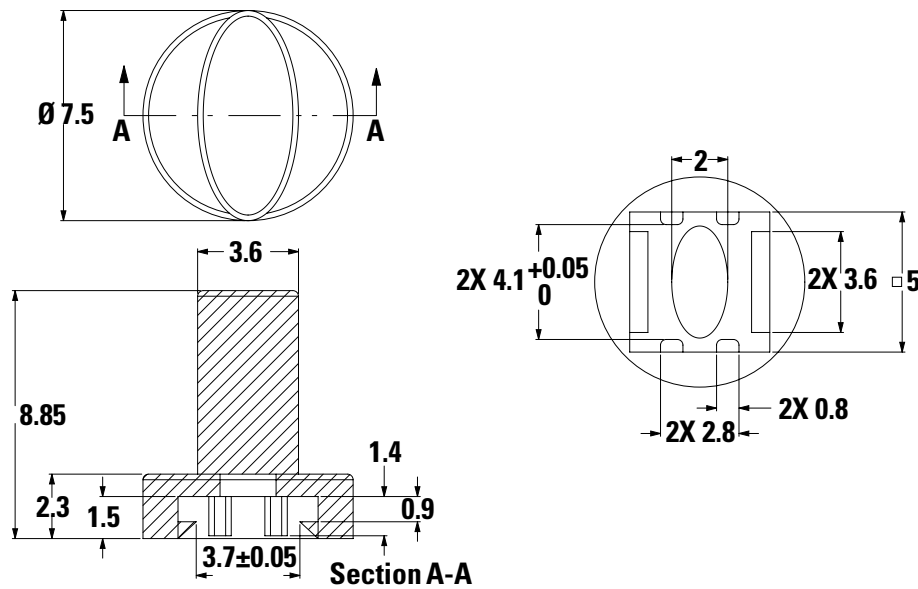


401E - x - xx - x

<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).

Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.

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Caps

Supply Status	Littelfuse Orderable Part Number	Description	Material	Paint Color	Laser Etch	Marking Color
✓	399EA0000	SWITCH 399EA0000	Polycarbonate - Natural/Clear	No paint	No marking	No marking
✓	400EB0000	CAP ITS SERIES-POLY/TRANS WHT	Polycarbonate - Translucent white	No paint	No marking	No marking
✓	400ECA000	CAP ITS SERIES GRY TINT/T-SLVR	Polycarbonate - Silver paint laser tech	Matte Silver	No marking	No marking
✓	400ECA01E	CAP-ITS SERIE-GRY/T/SIL ON/OFF	Polycarbonate - Silver paint laser tech	Matte Silver	Power On/Off	Laser etch (painted caps only)

Notes: Supply status: ✓ : Available for ordering;