

PTS645 Series

6.0 x 6.0 mm Tactile Switches



Specifications

Function	Momentary action
Contact Arrangement	SPST, N.O.
Terminals	PC pins

Electrical Characteristics

Contact Rating	Max. 50mA@12VDC Min. 10µA@1VDC
Dielectric Strength	250 V AC min.
Contact Resistance	100 mΩ max. initial
Insulation Resistance	10 ¹¹ Ω min.

Environmental Characteristics

Operating Temperature	-40°C to 85°C
Storage Temperature	

Notes:

Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

Description

The PTS645 switch series are 6mm tactile switches, designed to provide those designing for consumer product, instrumentation and computing equipment applications the long-lasting, responsive switch they need. PTS645 switches are compact (6 x 6mm) and are available in a variety of actuator lengths, with a choice of actuation force, allowing you to customize the switch to your product's needs.

Features & Benefits

- Compact size 6 x 6 mm
- Choice of actuation force
- Variety of actuator lengths
- RoHS compliant and compatible

Applications

- Consumer products
- Computer products
- Instrumentation
- Industrial

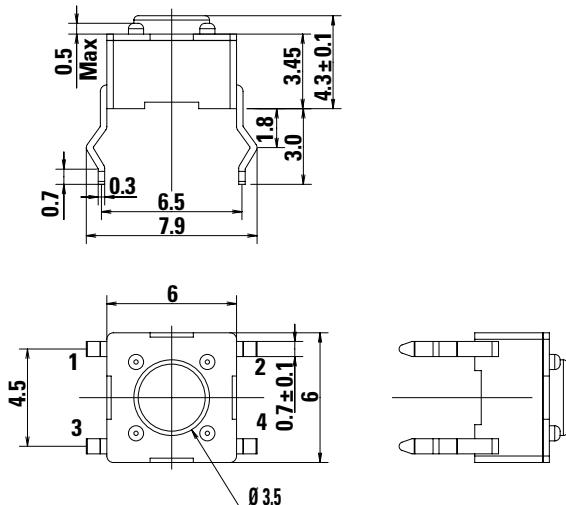
Process

Soldering	Test 2 times Max. Reflow soldering conditions (Reference standard: J-STD-020) Preheat—150°C-200°C, 60-120 (sec) Peak temperature—260°C Max. 10 (sec) Soldering area temperature—217°C, 60-150 (sec)
------------------	---

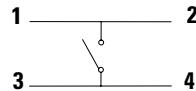
PTS645 Series

6.0 x 6.0 mm Tactile Switches

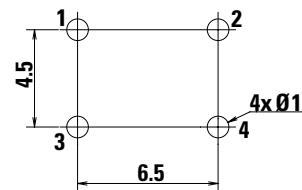
Termination (mm)
S Straight



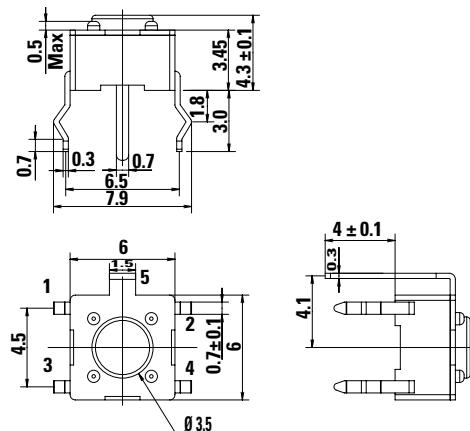
SCHEMATIC



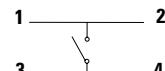
PCB LAYOUT



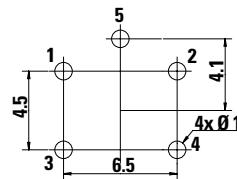
T Straight with ESD pin



SCHEMATIC



PCB LAYOUT

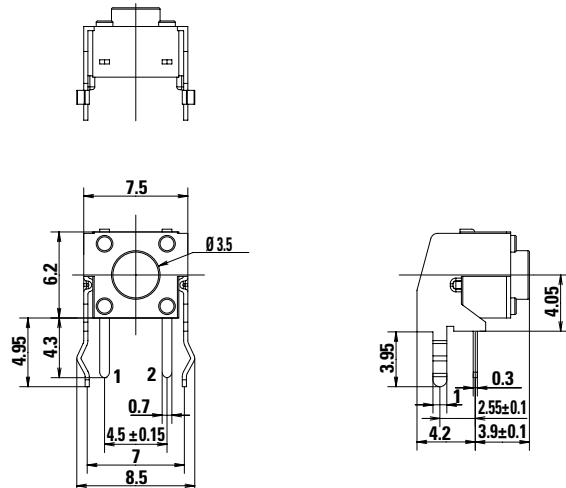


PTS645 Series

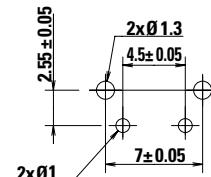
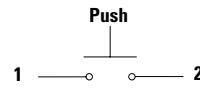
6.0 x 6.0 mm Tactile Switches



V Vertical THT

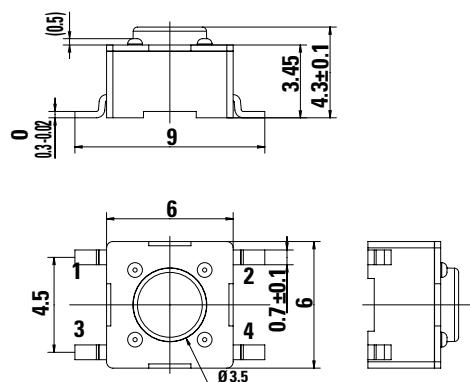


SCHEMATIC

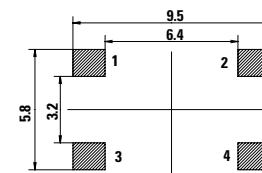
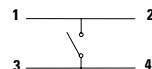


PCB LAYOUT

SMT G Type



SCHEMATIC

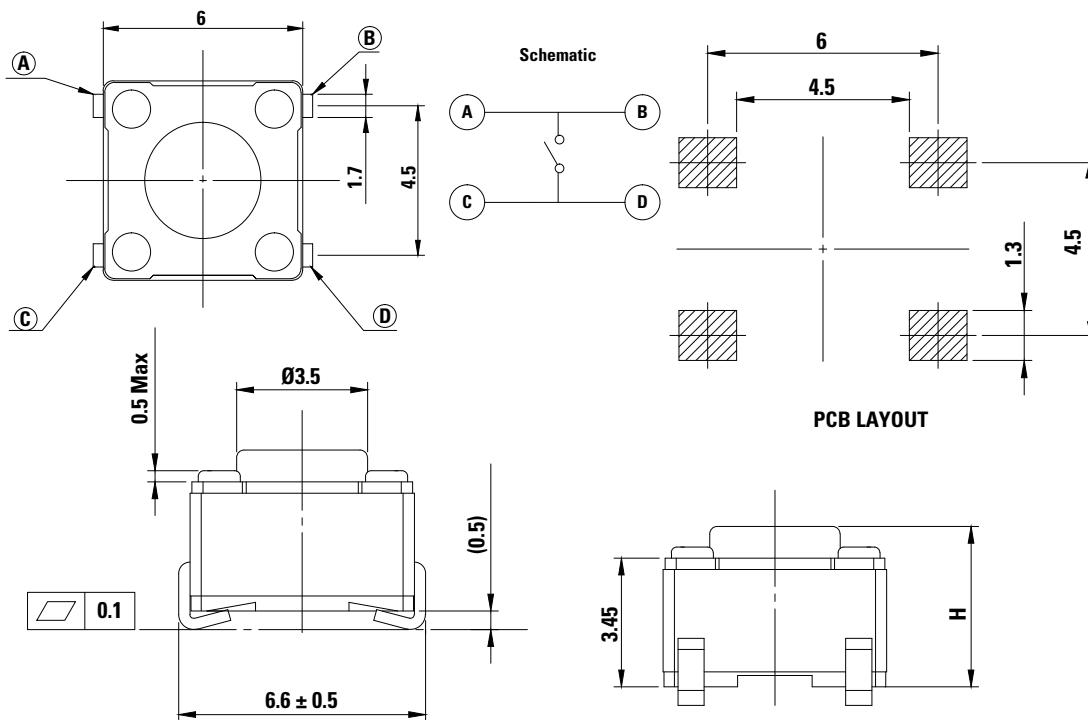


PCB LAYOUT

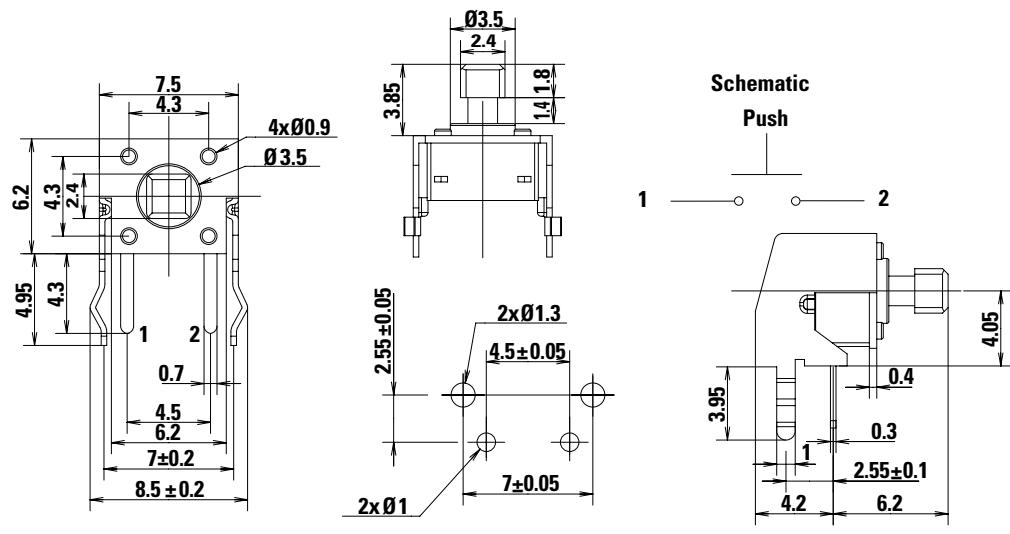
PTS645 Series

6.0 x 6.0 mm Tactile Switches

SMT J Type



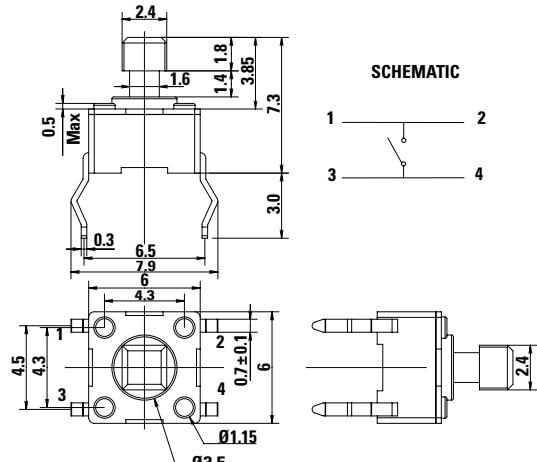
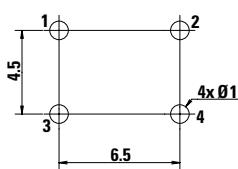
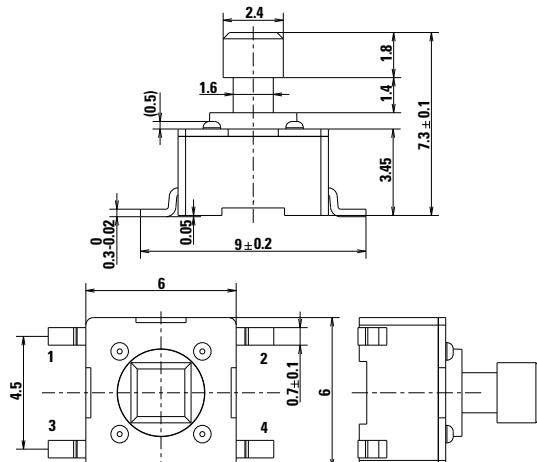
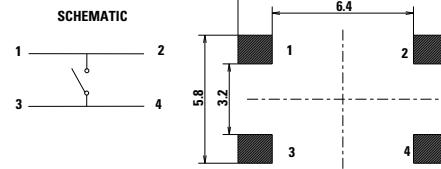
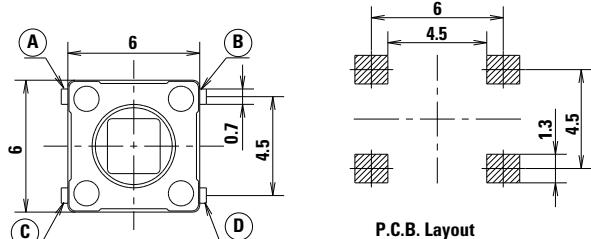
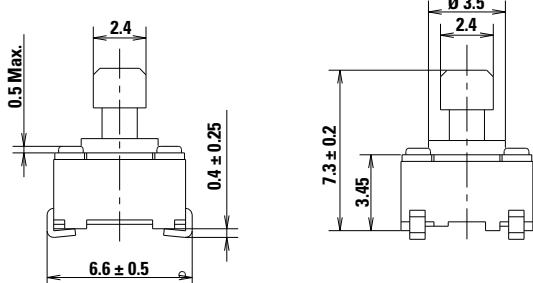
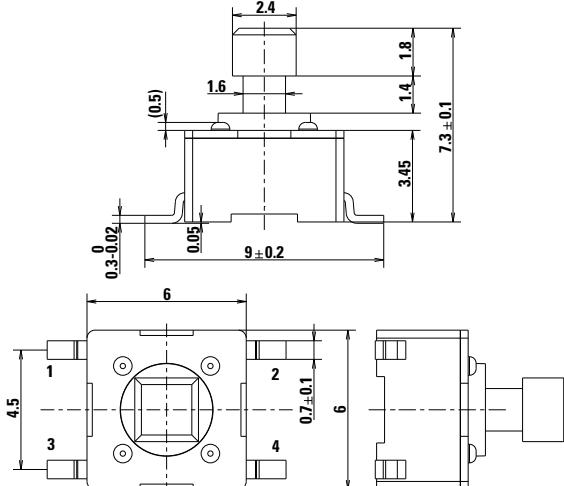
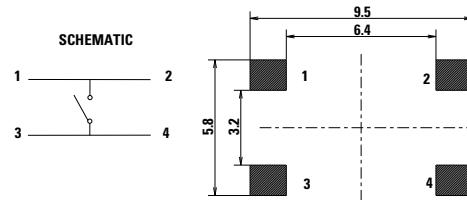
Actuator Shape
J Square Actuator
Vertical THT - for 6.15mm length only



Recommended PCB Layout

PTS645 Series

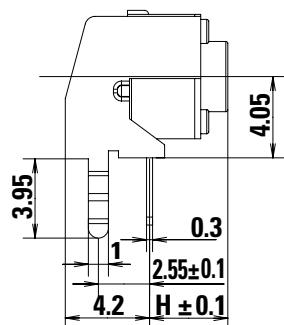
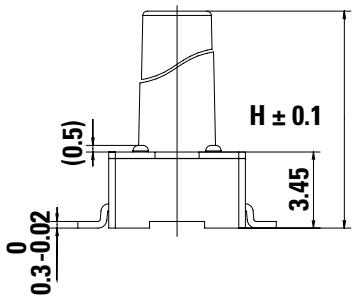
6.0 x 6.0 mm Tactile Switches

**Straight THT - for 7.3mm height only****RECOMMENDED PCB LAYOUT****Straight SMT G Type - for 7.3mm height only****RECOMMENDED PCB LAYOUT****Straight SMT J Type - for 7.3mm height only****P.C.B. Layout****SCHEMATIC****Straight SMT - for 7.3mm height only****RECOMMENDED PCB LAYOUT**

PTS645 Series

6.0 x 6.0 mm Tactile Switches

Actuator Height



Tape Dimension

Option Code	Width Tape	Pocket Height
43		5.3
50	16 ± 0.3	7.3
70		7.6
73		
95	24 ± 0.3	10.3
13		13.3

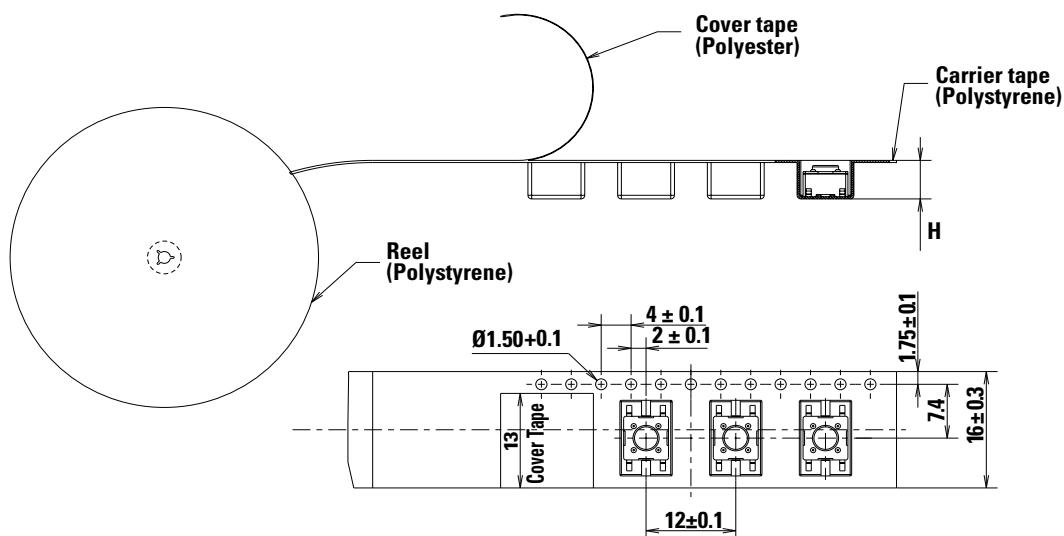
Switch height from PCB for S and T only

Option Code	Dimension H	Termination	Schematic	
			Without EMC pin	With EMC pin
43	4.3 (0.169)			
50	5.0 (0.197)	Thru-hole and SMT	1 o—o2 3 o—o4	1 o—o2 3 o—o4
70	7.0 (0.275)			
95	9.5 (0.374)			
13	13.0 (0.512)	SMT		

Switch length from font leads for V only

Option Code	Dimension H	Termination	Schematic	
			Without EMC pin	With EMC pin
31	3.15 (0.124)			
39	3.85 (0.151)	Vertical	N/A	1 o—o2 o—o4
58	5.85 (0.230)			
83	8.35 (0.329)			

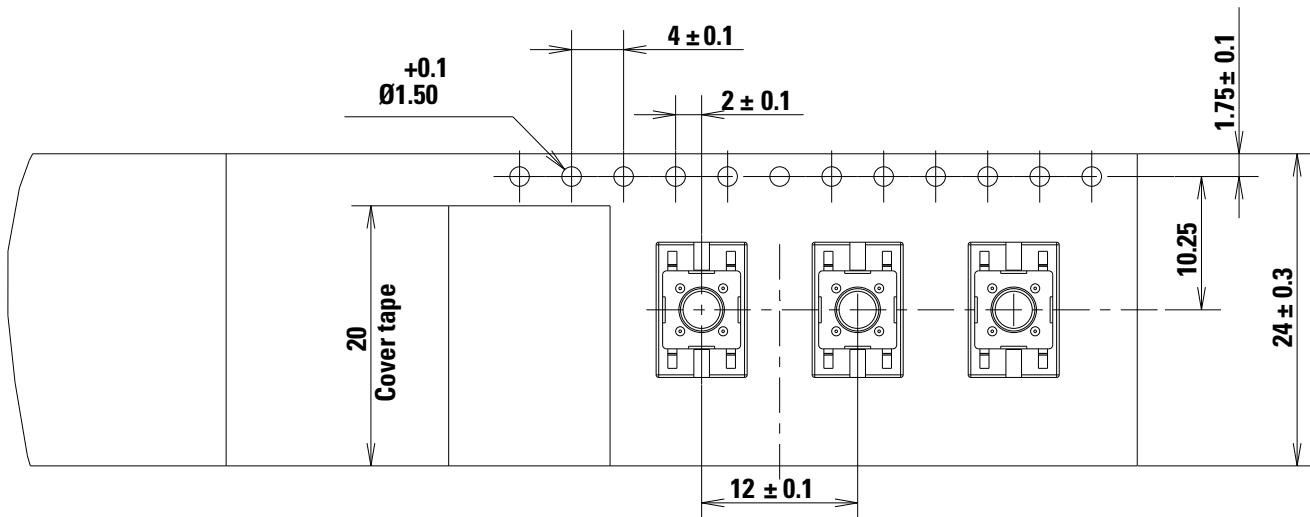
Tape & Reel for SMT G type Versions



PTS645 Series

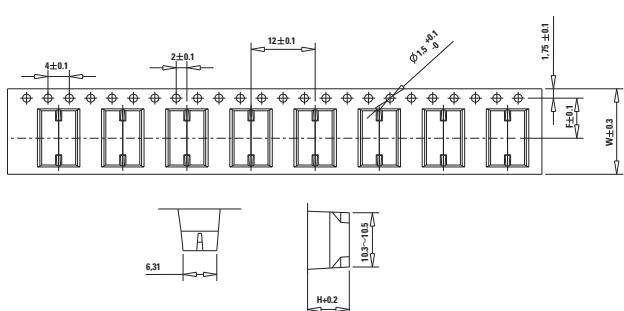
6.0 x 6.0 mm Tactile Switches

Packaging


Note:

Bulk Packaging
Tape & reel for the SMT type:
Reels of 1,000 pieces for 4.3 and 5.0 mm height.
Reels of 700 pieces for 7.0 mm height.
Reels of 700 pieces for 7.3 mm height.
Reels of 500 pieces for 9.5 mm height.
Reels of 400 pieces for 13.0 mm height.

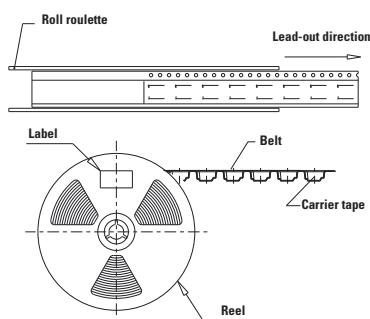
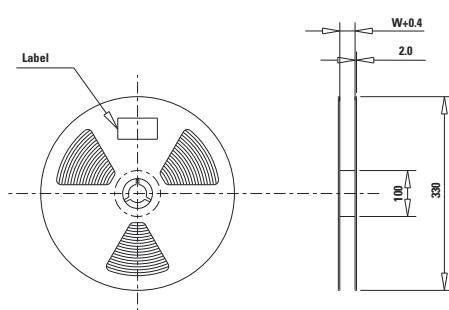
Tape & Reel for SMT J type Versions



Product Height	Carrier Width Tape (W) mm	Center Distance of Carrier Tape (F) mm	pcs/reel
4.3			1000
5.0	16	7.5	700
7.0			
7.3			
9.5			
11	24	11.5	500
13			

Note:

The disc rotates counterclockwise. According to the packing shown in the figure, the braid must not be twisted to prevent product deformation.



PTS645 Series

6.0 x 6.0 mm Tactile Switches



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.

PTS645 - x - x - x - XX - XXXXXX - LFS

Termination

- S:** Straight
- T:** Straight with ESD pin
- V:** Vertical THT

Actuator Shape

- None:** Round actuator, All versions
- J:** Square actuator, 2.4 mm side (available for Straight 7.3 mm and Vertical 6.15 mm)

Actuation Force

- N:** 1.0N
- L:** 1.3N
- M:** 1.6N
- H:** 2.0N
- K:** 2.6N
- P:** 3.2N
- R:** 3.6N

RoHS compliant and compatible,
Silver plated

Insertion Type

- 2:** Thru hole
- SMTR92¹:** Surface mount G-type, tape & reel
- JSMTR92¹:** Surface mount J-type, tape & reel

Switch height from PCB for S and T only (H dimension see actuator height drawings)

- 43:** 4.3 (.169), thru-hole and SMT
- 50:** 5.0 (.197), thru-hole and SMT
- 70:** 7.0 (.275), thru-hole and SMT
- 73:** 7.3 (.287), thru-hole and SMT, square actuator 2.4 mm side only
- 95:** 9.5 (.374), thru-hole and SMT
- 13:** 13.0 (.512) SMT only
- 11:** 11.0 (.433) SMT only

Switch length from front leads for V only (H dimension see actuator height drawings)

- 31:** 3.15 (.124), vertical
- 39:** 3.85 (.151), vertical
- 58:** 5.85 (.230), vertical
- 61:** 6.15 (.242), vertical, square actuator 2.4 mm side only
- 83:** 8.35 (.329), vertical

Notes:

1. Only the straight type termination without ESD pin is available in SMT type
Long life version has to be created case by case as special part number

PTS645 Series

6.0 x 6.0 mm Tactile Switches



Mechanical Characteristics

Surface Mount

Supply status	Littelfuse Orderable Part Number	Description	Contact & Terminals Plating	Termination	Actuation Force (N)	Operating Life (operations)	Electrical Travel (mm)	Height from PCB	Orientation	Actuator Shape
✓	Y97HT23B4PAFP	PTS645SH13SMTR92 LFS	Silver	Gull Wing	2.0 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	13.0mm	Straight	Round
✓	Y97HT23B4EAFF	PTS645SH43SMTR92 LFS	Silver	Gull Wing	2.0 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT23B4FAFP	PTS645SH50SMTR92 LFS	Silver	Gull Wing	2.0 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT23B4GAFF	PTS645SH70SMTR92 LFS	Silver	Gull Wing	2.0 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	7.0mm	Straight	Round
✓	Y97JT23B5HAFP	PTS645SJK73SMTR92 LFS	Silver	Gull Wing	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	7.3mm	Straight	Square
✓	Y97JT23B2HAFP	PTS645SJM73SMTR92 LFS	Silver	Gull Wing	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	7.3mm	Straight	Square
✓	Y97JT23B0HAFP	PTS645SJN73SMTR92 LFS	Silver	Gull Wing	1.0 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	7.3mm	Straight	Square
✓	Y97HT23B5PAFP	PTS645SK13SMTR92 LFS	Silver	Gull Wing	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	13.0mm	Straight	Round
✓	Y97HT23B5EAFF	PTS645SK43SMTR92 LFS	Silver	Gull Wing	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT23B5FAFP	PTS645SK50SMTR92 LFS	Silver	Gull Wing	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT23B5GAFF	PTS645SK70SMTR92 LFS	Silver	Gull Wing	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	7.0mm	Straight	Round
✓	Y97HT23B5KAFF	PTS645SK95SMTR92 LFS	Silver	Gull Wing	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	9.5mm	Straight	Round
✓	Y97HT23B1PAFP	PTS645SL13SMTR92 LFS	Silver	Gull Wing	1.3 +/- 0.3	100,000	0.25 +/- 0.1/-0.15	13.0mm	Straight	Round
✓	Y97HT23B1EAFF	PTS645SL43SMTR92 LFS	Silver	Gull Wing	1.3 +/- 0.3	100,000	0.25 +/- 0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT23B1FAFP	PTS645SL50SMTR92 LFS	Silver	Gull Wing	1.3 +/- 0.3	100,000	0.25 +/- 0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT23B1GAFF	PTS645SL70SMTR92 LFS	Silver	Gull Wing	1.3 +/- 0.3	100,000	0.25 +/- 0.1/-0.15	7.0mm	Straight	Round
✓	Y97HT23B1KAFF	PTS645SL95SMTR92 LFS	Silver	Gull Wing	1.3 +/- 0.3	100,000	0.25 +/- 0.1/-0.15	9.5mm	Straight	Round
✓	G01157771	PTS645SM11SMTR92 LFS	Silver	Gull Wing	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	11.0mm	Straight	Round
✓	Y97HT23B2PAFP	PTS645SM13SMTR92 LFS	Silver	Gull Wing	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	13.0mm	Straight	Round
✓	Y97HT23B2EAFF	PTS645SM43SMTR92 LFS	Silver	Gull Wing	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT23B2FAFP	PTS645SM50SMTR92 LFS	Silver	Gull Wing	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT23B2GAFF	PTS645SM70SMTR92 LFS	Silver	Gull Wing	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	7.0mm	Straight	Round
✓	Y97HT23B2KAFF	PTS645SM95SMTR92 LFS	Silver	Gull Wing	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	9.5mm	Straight	Round
✓	G01407944	PTS645SN13SMTR92 LFS	Silver	Gull Wing	1.0 +/- 0.3	100,000	0.25 +/- 0.1/-0.10	13.0mm	Straight	Round
✓	G01403810	PTS645SN43SMTR92 LFS	Silver	Gull Wing	1.0 +/- 0.3	100,000	0.25 +/- 0.1/-0.10	4.3mm	Straight	Round
✓	G01468133	PTS645SN50SMTR92 LFS	Silver	Gull Wing	1.0 +/- 0.3	100,000	0.25 +/- 0.1/-0.10	5.0mm	Straight	Round
✓	G01485957	PTS645SN95SMTR92 LFS	Silver	Gull Wing	1.0 +/- 0.3	100,000	0.25 +/- 0.1/-0.10	9.5mm	Straight	Round
✓	G01510002	PTS645SP43SMTR92 LFS	Silver	Gull Wing	3.2 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	4.3mm	Straight	Round
✓	G01327719	PTS645SP50SMTR92 LFS	Silver	Gull Wing	3.2 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	5.0mm	Straight	Round
✓	Y97HT23B6KAFF	PTS645SP95SMTR92 LFS	Silver	Gull Wing	3.2 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	9.5mm	Straight	Round
✓	Y97HT23B7YAFF	PTS645SR11SMTR92 LFS	Silver	Gull Wing	3.6 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	11.0mm	Straight	Round
✓	Y97HT23B7PAFP	PTS645SR13SMTR92 LFS	Silver	Gull Wing	3.6 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	13.0mm	Straight	Round
✓	Y97HT23B7EAFF	PTS645SR43SMTR92 LFS	Silver	Gull Wing	3.6 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	4.3mm	Straight	Round
✓	GSPTS0066	PTS645SJM73JSMTR92 LFS	Silver	J-leads	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	7.3mm	Straight	Square
✓	GSPTS007404	PTS645SK43JSMTR92 LFS	Silver	J-leads	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	4.3mm	Straight	Round
✓	GSPTS007408	PTS645SK50JSMTR92 LFS	Silver	J-leads	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	5.0mm	Straight	Round
✓	GSPTS007416	PTS645SK73JSMTR92 LFS	Silver	J-leads	2.6 +/- 0.5	100,000	0.30 +/- 0.1/-0.15	7.3mm	Straight	Round
✓	GSPTS007402	PTS645SM43JSMTR92 LFS	Silver	J-leads	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	4.3mm	Straight	Round
✓	GSPTS007414	PTS645SM73JSMTR92 LFS	Silver	J-leads	1.6 +/- 0.3	100,000	0.30 +/- 0.1/-0.15	7.3mm	Straight	Round
✓	G01270955	PTS645SN95JSMTR92 LFS	Silver	J-leads	1.0 +/- 0.3	100,000	0.25 +/- 0.1/-0.10	9.5mm	Straight	Round
✓	G01267457	PTS645SP70JSMTR92 LFS	Silver	J-leads	3.2 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	7.0mm	Straight	Round
✓	G01267477	PTS645SP95JSMTR92 LFS	Silver	J-leads	3.2 +/- 0.7	100,000	0.30 +/- 0.1/-0.10	9.5mm	Straight	Round

PTS645 Series

6.0 x 6.0 mm Tactile Switches



Mechanical Characteristics

Thru Hole

Supply status	Littelfuse Orderable Part Number	Description	Contact & Terminals Plating	Termination	Actuation Force (N)	Operating Life (operations)	Electrical Travel (mm)	Height from PCB	Orientation	Actuator Shape
✓	Y97HT21A4EAPP	PTS645SH43-2 LFS	Silver	Thru hole	2.0 +/-0.5	100,000	0.30 +/-0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT21A4FAFP	PTS645SH50-2 LFS	Silver	Thru hole	2.0 +/-0.5	100,000	0.30 +/-0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT21A4GAFF	PTS645SH70-2 LFS	Silver	Thru hole	2.0 +/-0.5	100,000	0.30 +/-0.1/-0.15	7.0mm	Straight	Round
✓	Y97HT21A4KAPP	PTS645SH95-2 LFS	Silver	Thru hole	2.0 +/-0.5	100,000	0.30 +/-0.1/-0.15	9.5mm	Straight	Round
✓	Y97JT21A4HAPP	PTS645SJH73-2 LFS	Silver	Thru hole	2.0 +/-0.5	100,000	0.30 +/-0.1/-0.15	7.3mm	Straight	Square
✓	Y97JT21A5HAPP	PTS645SJK73-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	7.3mm	Straight	Square
✓	Y97JT21A2HAPP	PTS645SJM73-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	7.3mm	Straight	Square
✓	Y97HT21A5EAPP	PTS645SK43-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT21A5FAPP	PTS645SK50-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT21A5GAPP	PTS645SK70-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	7.0mm	Straight	Round
✓	Y97HT21A5KAPP	PTS645SK95-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	9.5mm	Straight	Round
✓	Y97HT21A1EAPP	PTS645SL43-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT21A1FAFP	PTS645SL50-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT21A1GAFF	PTS645SL70-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	7.0mm	Straight	Round
✓	Y97HT21A1KAFF	PTS645SL95-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	9.5mm	Straight	Round
✓	Y97HT21A2EAPP	PTS645SM43-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	4.3mm	Straight	Round
✓	Y97HT21A2FAFP	PTS645SM50-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	5.0mm	Straight	Round
✓	Y97HT21A2GAFF	PTS645SM70-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	7.0mm	Straight	Round
✓	Y97HT21A2KAPP	PTS645SM95-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	9.5mm	Straight	Round
✓	G01331203	PTS645SN43-2 LFS	Silver	Thru hole	1.0 +/-0.3	100,000	0.25 +/-0.1/-0.10	4.3mm	Straight	Round
✓	10913246	PTS645SN50-2 LFS	Silver	Thru hole	1.0 +/-0.3	100,000	0.25 +/-0.1/-0.10	5.0mm	Straight	Round
✓	G01227931	PTS645SN73-2 LFS	Silver	Thru hole	1.0 +/-0.3	100,000	0.25 +/-0.1/-0.10	7.3mm	Straight	Round
✓	Y97HT22A4EAPP	PTS645TH43-2 LFS	Silver	Thru hole	2.0 +/-0.5	100,000	0.30 +/-0.1/-0.15	4.3mm	Straight with ESD Pin	Round
✓	Y97HT22A4KAFF	PTS645TH95-2 LFS	Silver	Thru hole	2.0 +/-0.5	100,000	0.30 +/-0.1/-0.15	9.5mm	Straight with ESD Pin	Round
✓	Y97HT22A5EAPP	PTS645TK43-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	4.3mm	Straight with ESD Pin	Round
✓	Y97HT22A5GAFF	PTS645TK70-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	7.0mm	Straight with ESD Pin	Round
✓	Y97HT22A5KAPP	PTS645TK95-2 LFS	Silver	Thru hole	2.6 +/-0.5	100,000	0.30 +/-0.1/-0.15	9.5mm	Straight with ESD Pin	Round
✓	Y97HT22A1EAPP	PTS645TL43-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	4.3mm	Straight with ESD Pin	Round
✓	Y97HT22A1FAFP	PTS645TL50-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	5.0mm	Straight with ESD Pin	Round
✓	Y97HT22A1GAFF	PTS645TL70-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	7.0mm	Straight with ESD Pin	Round
✓	Y97HT22A1KAPP	PTS645TL95-2 LFS	Silver	Thru hole	1.3 +/-0.3	100,000	0.25 +/-0.1/-0.15	9.5mm	Straight with ESD Pin	Round
✓	Y97HT22A2EAPP	PTS645TM43-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	4.3mm	Straight with ESD Pin	Round
✓	Y97HT22A2FAFP	PTS645TM50-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	5.0mm	Straight with ESD Pin	Round
✓	Y97HT22A2GAFF	PTS645TM70-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	7.0mm	Straight with ESD Pin	Round
✓	Y97HT22A2KAPP	PTS645TM95-2 LFS	Silver	Thru hole	1.6 +/-0.3	100,000	0.30 +/-0.1/-0.15	9.5mm	Straight with ESD Pin	Round

Note: Supply status: ✓ : Available for ordering.

Liability Limitation

This datasheet does not provide enough information for applications that require a certain level of quality or safety such as automotive, medical systems, or safety equipment. Please contact customer service for the contractual specification package.

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>.