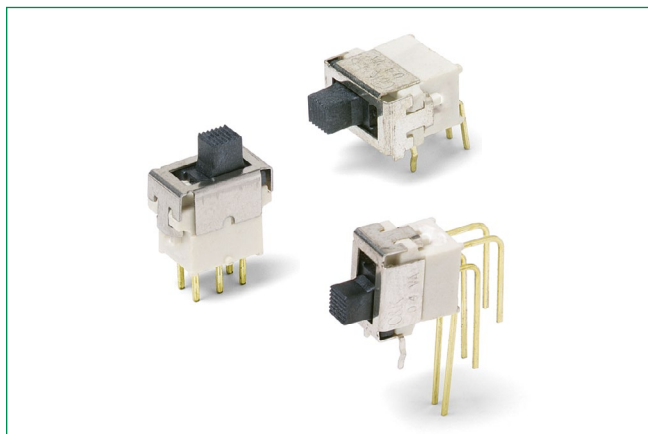


ES Series

Sealed Tiny Slide Switches



Description

ES series sealed tiny slide switches are perfect for applications in the computer peripherals & network products, test & measurement equipment, and general telecom industries. With process compatible internal o-ring and epoxy base seals and a robust actuator for easy actuation, its reliable contact design ensures a long electrical life.

Features & Benefits

- Process compatible—internal o-ring and epoxy base seal
- Robust actuator for easy actuation
- Thru-hole & surface mount models
- RoHS compliant
- Reliable contact design ensures long electrical life

Specifications

Contact Rating	0.4 VA max. @ 20 V AC or DC max.
Mechanical & Electrical Life	40,000 make-and-break cycles at full load
Contact Resistance	50 m Ω max. initial @ 2-4 V DC, 100 mA
Insulation Resistance	10 ⁹ Ω min.
Dielectric Strength	500 Vrms min.
Operating Temperature	-30°C to 85°C
Solderability	Per MIL-STD-202F method 208D, or EIA RS-186E method 9
Degree of Protection	IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion
ESD Endurance	8kv. Min. (EIA 545)
Packaging	Thru-hole switches supplied in anti-static trays surface mount switches available in tape and reel packaging

Applications

- Computer peripherals & network products
- Telephone & cable modems
- Test & measurement equipment

Materials

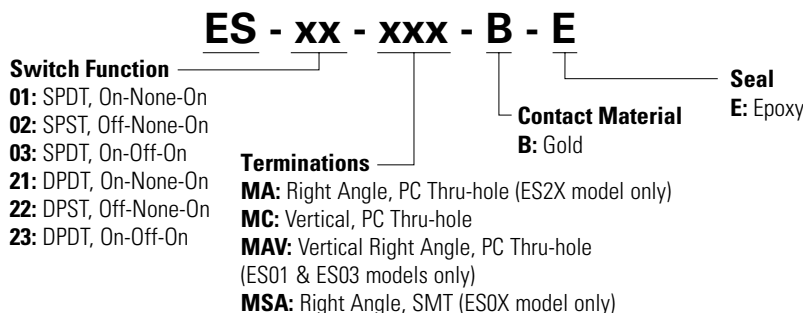
Housing & Base	Nylon (UL 94 V-0)
Actuator	LCP (UL 94 V-0) black, standard
Surface Plate	Stainless steel with tin plate
Movable Contact	Bronze with gold plate over nickel plate
Stationary Contacts	Copper alloy, with gold plate over nickel plate
Terminals	Copper alloy, with gold over nickel plate. All terminals insert molded
Base & Terminal Seal	Epoxy

Notes:

All models RoHS compliant and compatible with all options. Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

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.

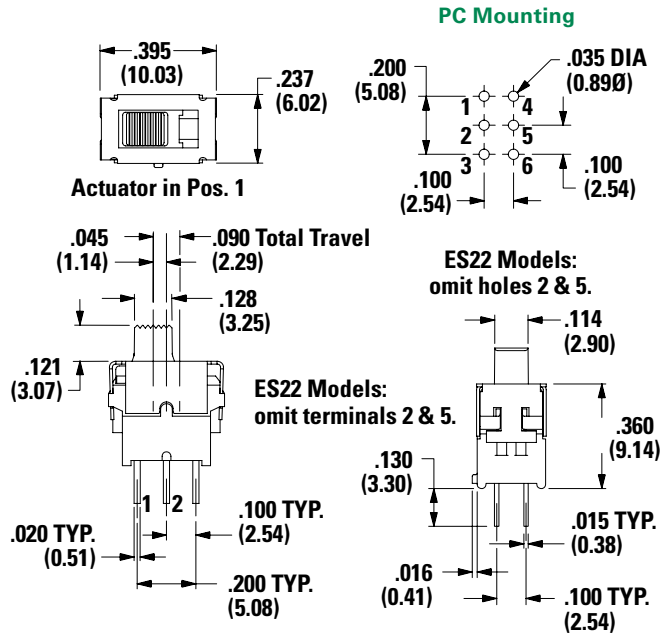


ES Series

Sealed Tiny Slide Switches

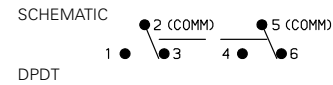


ES21MCBE, DPDT inches (mm)

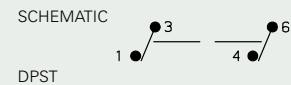


Switch Function

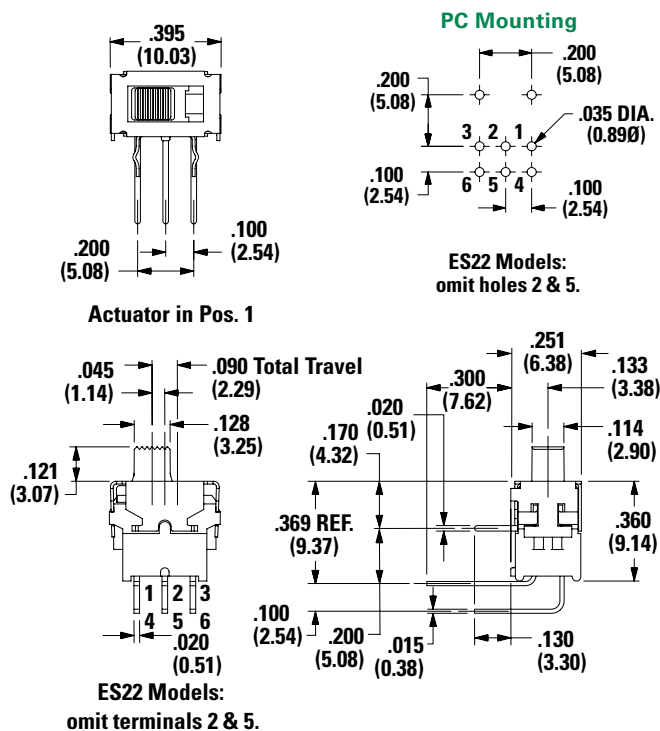
Part Number	POS. 1	POS. 2	POS. 3
ES21MCBE	ON	NONE	ON
ES23MCBE	ON	OFF	ON
Conn. Terminals	2-3, 5-6	OPEN	2-1, 5-4



Part Number	POS. 1	POS. 2	POS. 3
ES22MCBE	OFF	NONE	ON
Conn. Terminals	OPEN	N/A	3-1, 6-4

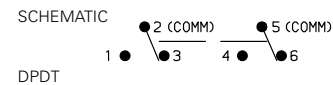


ES21MABE, DPDT inches (mm)

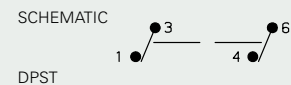


Switch Function

Part Number	POS. 1	POS. 2	POS. 3
ES21MABE	ON	NONE	ON
ES23MABE	ON	OFF	ON
Conn. Terminals	2-3, 5-6	OPEN	2-1, 5-4



Part Number	POS. 1	POS. 2	POS. 3
ES22MABE	OFF	NONE	ON
Conn. Terminals	OPEN	N/A	3-1, 6-4

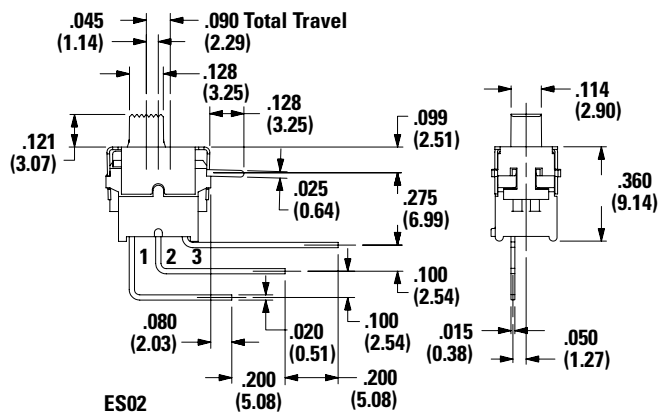
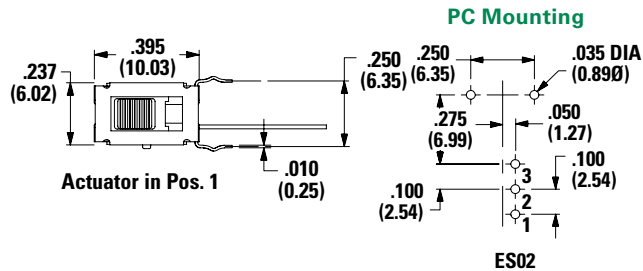


ES Series

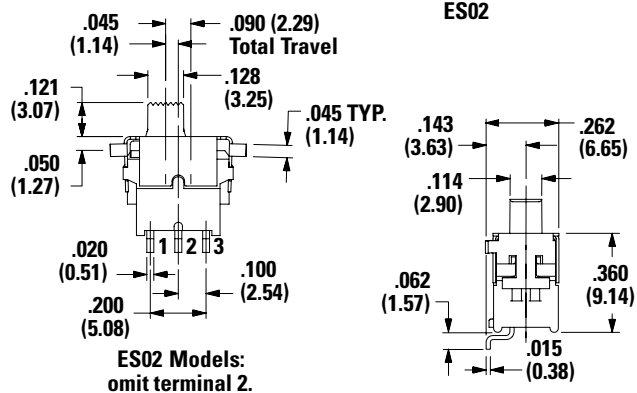
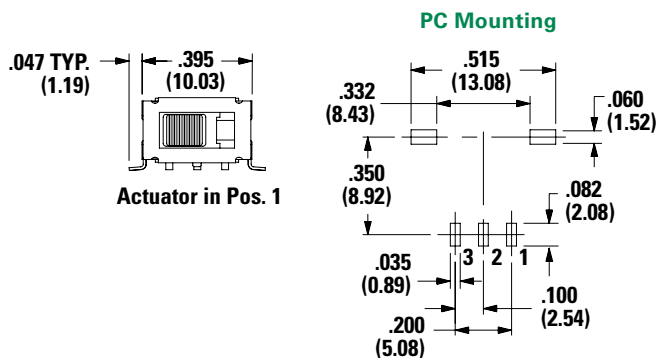
Sealed Tiny Slide Switches



ES01MAVBE, SPDT inches (mm)

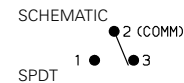


ES01MSABE, Horizontal Actuation SPDT inches (mm)



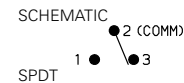
Switch Function

Part Number	POS. 1	POS. 2	POS. 3
ES01MAVBE	ON	NONE	ON
ES03MAVBE	ON	OFF	ON
Conn. Terminals	2-3	OPEN	2-1

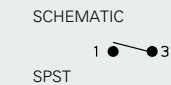


Switch Function

Part Number	POS. 1	POS. 2	POS. 3
ES01MSABE	ON	NONE	ON
ES03MSABE	ON	OFF	ON
Conn. Terminals	2-3	OPEN	2-1



ES02MSABE	OFF	NONE	ON
Conn. Terminals	OPEN	N/A	3-1

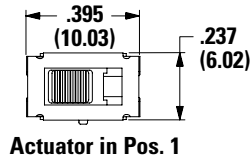


ES Series

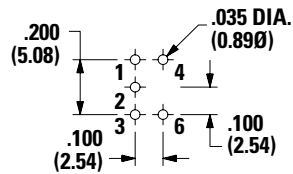
Sealed Tiny Slide Switches



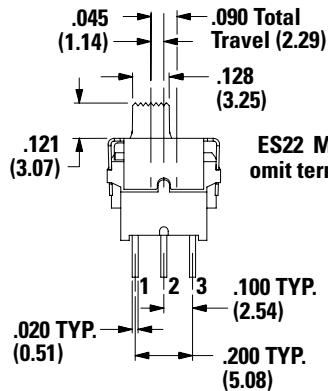
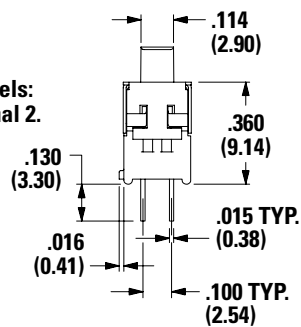
ES01MCBE, SPDT inches (mm)



PC Mounting

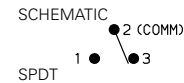


ES22 Models: omit hole 2.

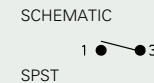


Switch Function

Part Number	POS. 1	POS. 2	POS. 3
ES01MCBE	ON	NONE	ON
ES03MCBE	ON	OFF	ON
Conn. Terminals	2-3	OPEN	2-1



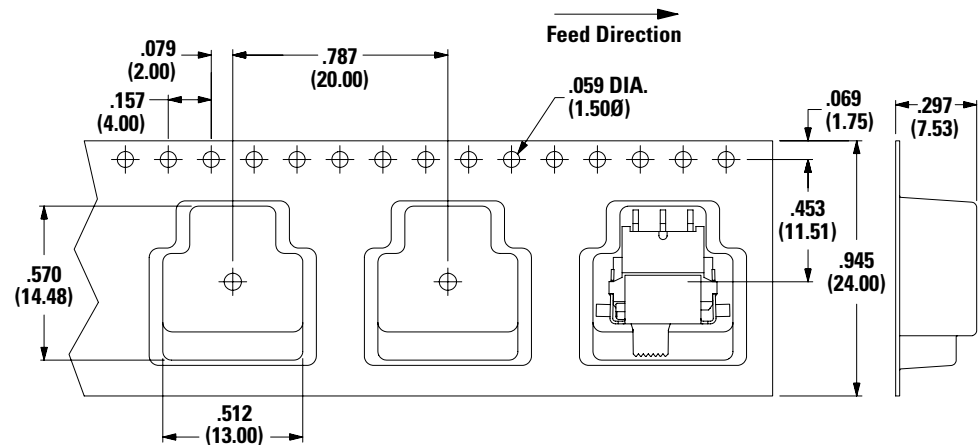
Part Number	POS. 1	POS. 2	POS. 3
ES02MCBE	OFF	NONE	ON
Conn. Terminals	OPEN	N/A	3-1



Tape & Reel inches (mm)

For part numbers ESXXMSABE

Reel Information	
Outside Diameter	13.00 (330.0)
Pilot Hole	0.512 (13.0)
Quantity Per Reel	300



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>.