ES Series
Sealed Tiny Slide Switches



Features/Benefits

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

Typical Applications

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

Patent No. 6,008,458

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.

Materials

HOUSING & BASE: Nylon (UL 94V-0).

ACTUATOR: LCP (UL 94V-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.

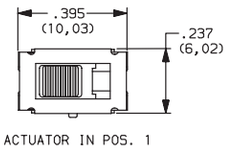
NOTE: All models RoHS compliant and compatible with all options.

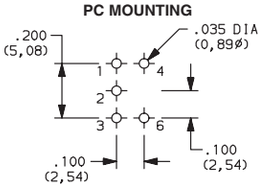
NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

How To Order

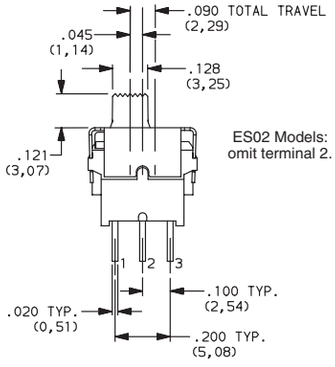
Complete part numbers for ES Series Sealed Tiny Slide Switches are shown on pages I-5 through I-7. These unique tiny slide switches are process compatible. An internal o-ring and epoxy base seal protects the switch from wave and reflow soldering, as well as cleaning processes.

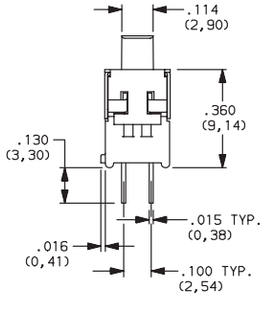
PART NUMBER	SWITCH FUNCTION POS. 1	POS. 2	POS. 3
ES01MCBE	ON	NONE	ON
ES03MCBE	ON	OFF	ON
CONN. TERMINALS	2-3	OPEN	2-1
SCHEMATIC SPDT		2 (COMM), 1, 3	
ES02MCBE	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC SPST		1, 3	





ES02 Models:
omit hole 2.







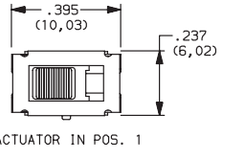
ES01MCBE
SPDT

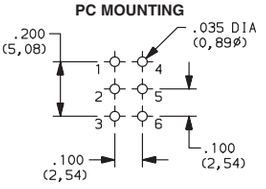
Third Angle Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

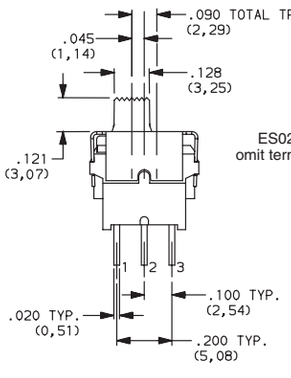


ES21MCBE
DPDT

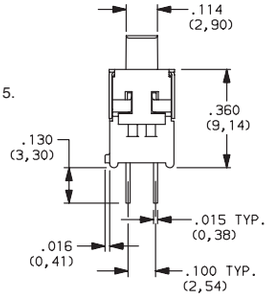




ES02 Models:
omit holes 2 & 5.



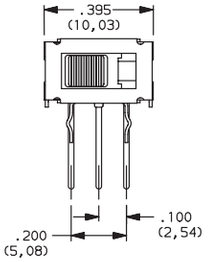
ES02 Models:
omit terminals 2 & 5.

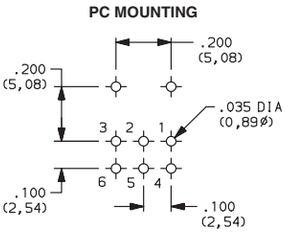


PART NUMBER	SWITCH FUNCTION		
		POS. 1 POS. 3	POS. 2
ES21MCBE	ON	NONE	ON
ES23MCBE	ON	OFF	ON
CONN. TERMINALS	2-3, 5-6	OPEN	2-1, 5-4
SCHEMATIC DPDT	1 2 (COMM) 3	4 5 (COMM) 6	
ES22MCBE	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1, 6-4
SCHEMATIC DPST	1 3	4 6	

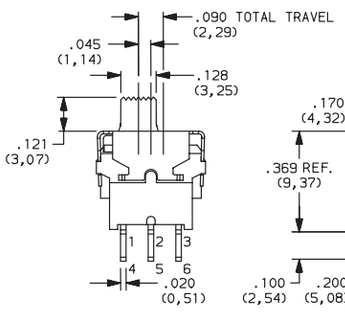


ES21MABE
DPDT

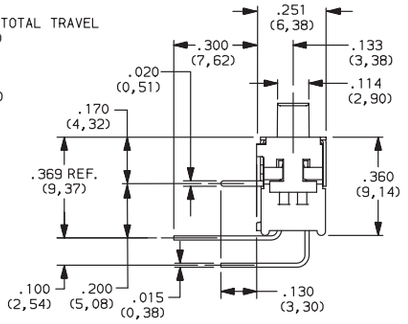




ES02 Models:
omit holes 2 & 5.



ES22 Models:
omit terminals 2 & 5.

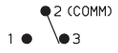


PART NUMBER	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
ES21MABE	ON	NONE	ON
ES23MABE	ON	OFF	ON
CONN. TERMINALS	2-3, 5-6	OPEN	2-1, 5-4
SCHEMATIC DPDT	1 2 (COMM) 3	4 5 (COMM) 6	
ES22MABE	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC DPST	1 3	4 6	

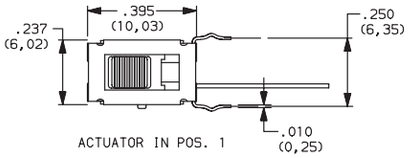
Third Angle Projection

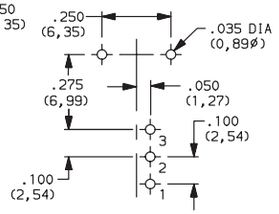
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

PART NUMBER	SWITCH FUNCTION POS. 1	POS. 2	POS. 3
ES01MAVBE	ON	NONE	ON
ES03MAVBE	ON	OFF	ON
CONN. TERMINALS	2-3	OPEN	2-1
SCHEMATIC			



PC MOUNTING

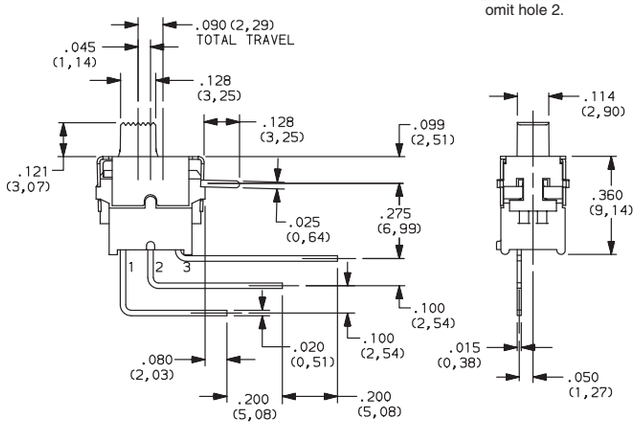




ES02 Models:
omit hole 2.



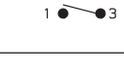
ES01MAVBE
SPDT



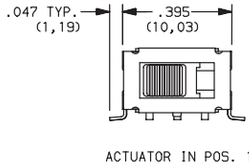
ES02 Models:
omit terminal 2.

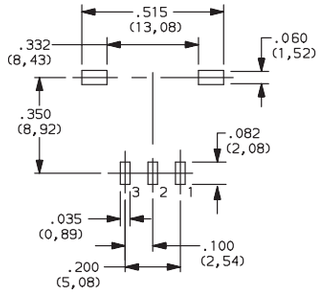
PART NUMBER	SWITCH FUNCTION POS. 1	POS. 2	POS. 3
ES01MSABE	ON	NONE	ON
ES03MSABE	ON	OFF	ON
CONN. TERMINALS	2-3	OPEN	2-1
SCHEMATIC			
SPDT			
ES02MSABE	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC			
SPST			



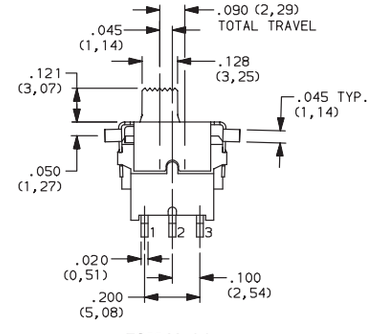


PC MOUNTING

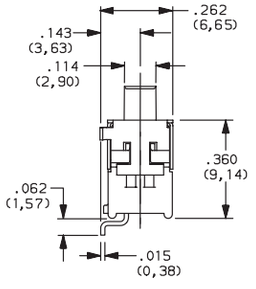




ES02 Models:
omit pad 2.



ES02 Models:
omit terminal 2.



SMT



ES01MSABE
Horizontal Actuation
SPDT

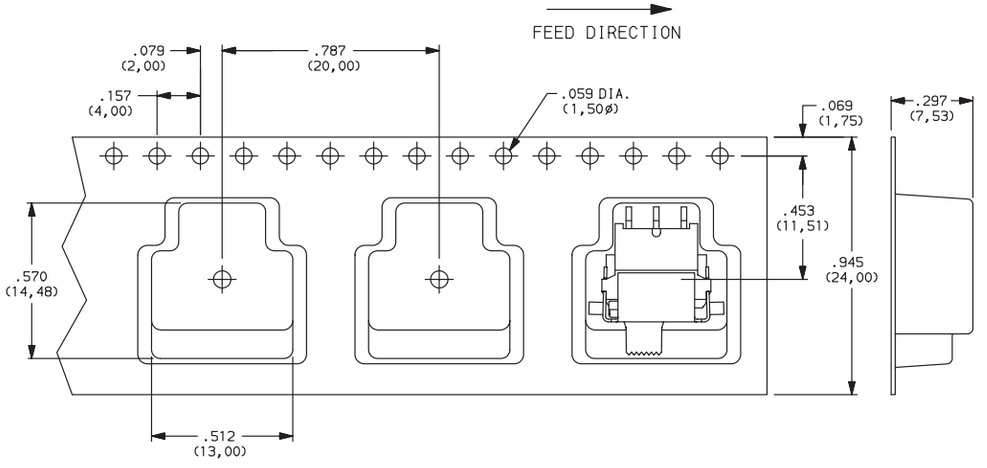
Third Angle Projection

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

TAPE & REEL

For part numbers ESXXMSABE

REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	300



Third Angle Projection

Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change