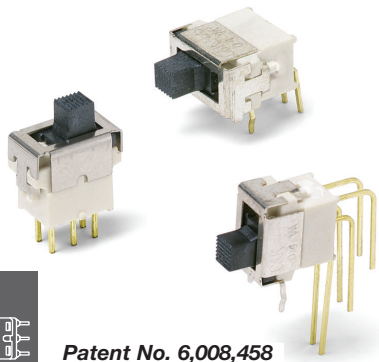


# ES Series Sealed Tiny Slide Switches



Patent No. 6,008,458

## 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

Slide

## 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<sup>9</sup> 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.

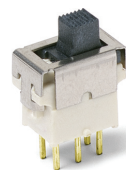
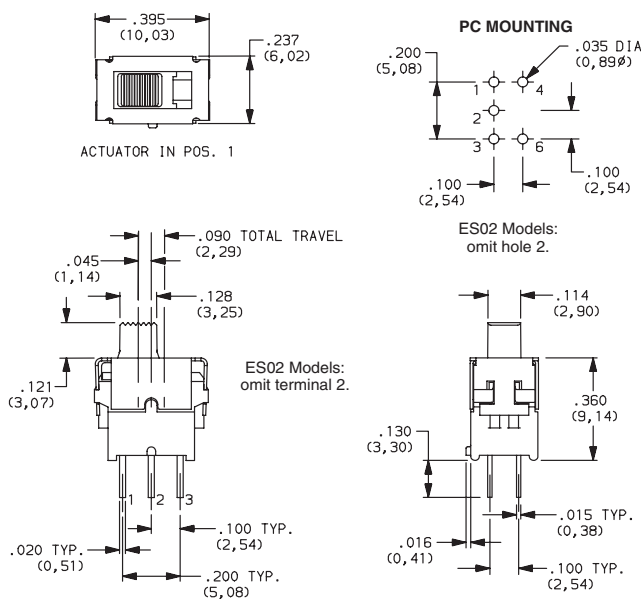
**NOTE:** All models RoHS compliant and compatible with all options.

**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
<b>ES01MCBE</b>	ON	NONE	ON
<b>ES03MCBE</b>	ON	OFF	ON
CONN. TERMINALS	2-3	OPEN	2-1
SCHEMATIC			
SPDT			
<b>ES02MCBE</b>	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC			
SPDT			



ES01MCBE  
SPDT



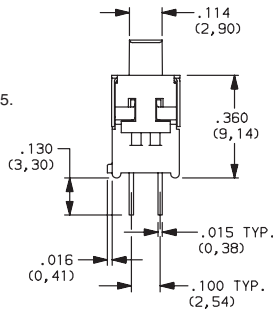
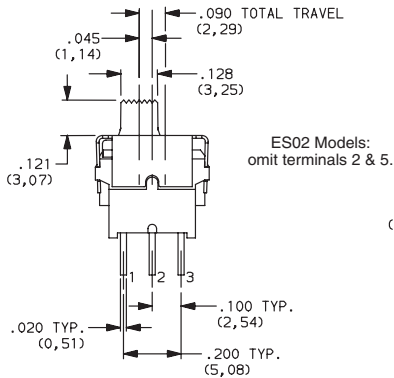
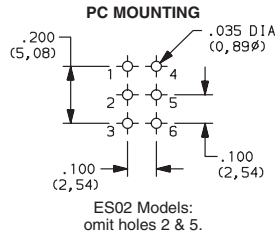
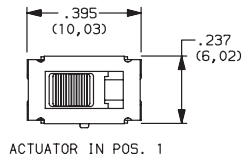
Dimensions are shown: Inch (mm)  
 Specifications and dimensions subject to change



# ES Series Sealed Tiny Slide Switches



ES21MCBE  
DPDT



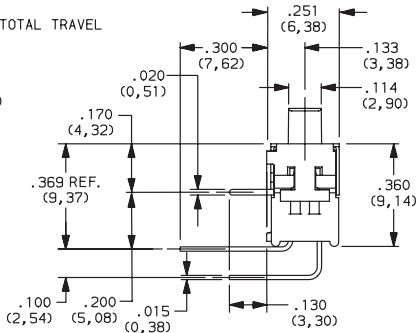
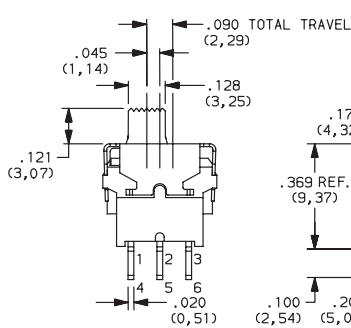
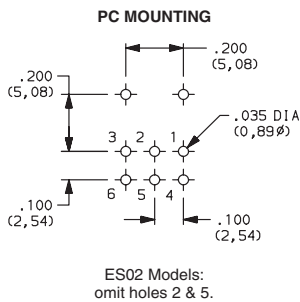
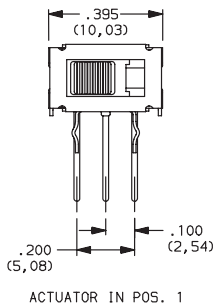
PART NUMBER	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
<b>ES21MCBE</b>	ON	NONE	ON
<b>ES23MCBE</b>	ON	OFF	ON
CONN. TERMINALS	2-3, 5-6	OPEN	2-1, 5-4
SCHEMATIC			
DPDT			
<b>ES22MCBE</b>	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1, 6-4
SCHEMATIC			
DPST			



Slide



ES21MABE  
DPDT



ES22 Models:  
omit terminals 2 & 5.

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



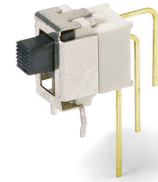
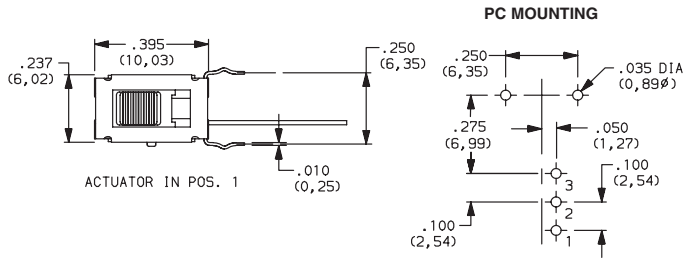
Third Angle  
Projection

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

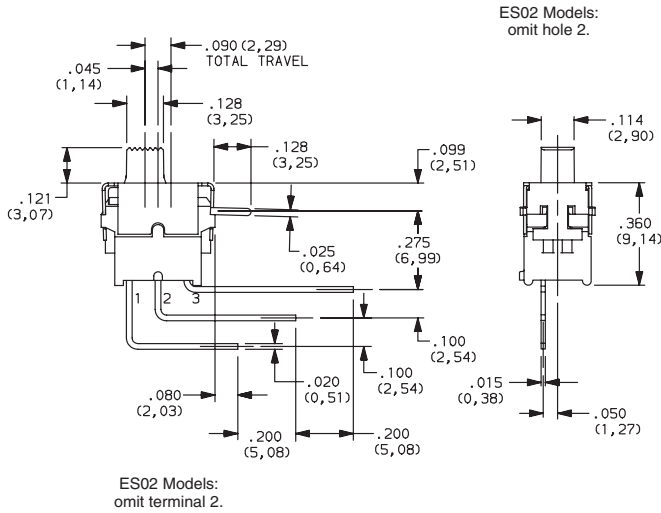
# ES Series Sealed Tiny Slide Switches

Slide

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



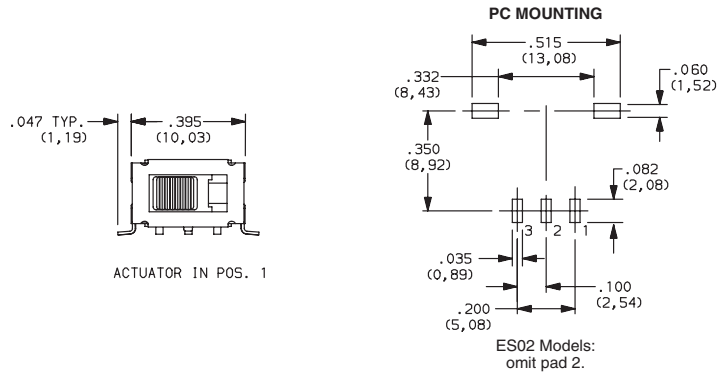
**ES01MAVBE  
SPDT**



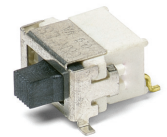
ES02 Models:  
omit hole 2.

ES02 Models:  
omit terminal 2.

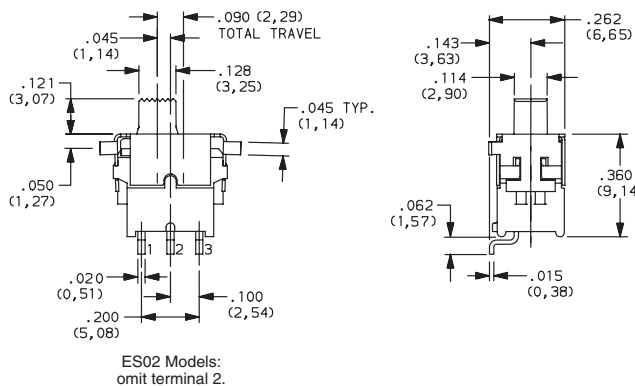
PART NUMBER	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
<b>ES01MSABE</b>	ON	NONE	ON
<b>ES03MSABE</b>	ON	OFF	ON
CONN. TERMINALS	2-3	OPEN	2-1
SCHEMATIC			
SPDT			
<b>ES02MSABE</b>	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC			
SPST			



**SMT**



**ES01MSABE  
Horizontal Actuation  
SPDT**



ES02 Models:  
omit pad 2.

ES02 Models:  
omit terminal 2.



Third Angle Projection

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

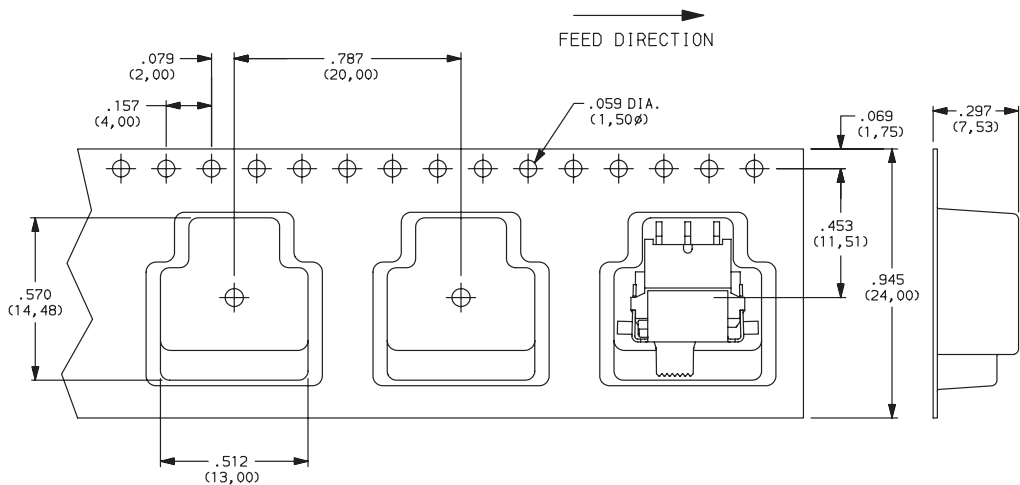


# ES Series Sealed Tiny Slide Switches

## TAPE & REEL

For part numbers ESXXMSABE

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



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

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[1825289-7](#) [K232CB](#) [25139NLDB](#) [25449NAH](#) [SLB1240R45](#) [1825078-1](#) [1825080-4](#) [1825269-1](#) [1825270-2](#) [STS141RA04](#) [T2215BEN506](#)  
[GH46P000001](#) [GH46W000001](#) [GH49P010001](#) [25339NA](#) [M42A](#) [TG36P000000](#) [TG36P000050](#) [AYZ0202AG](#) [47227LFE](#) [49331L](#) [50208L](#)  
[L203091MS02Q](#) [4-1437581-7](#) [X2225CR-437W](#) [49329L](#) [1101M1S3ZB8E2](#) [1-1437581-1](#) [MSS2225G04](#) [TG39W000000](#) [1825075-1](#)  
[MSS42G](#) [TG36WS80065](#) [T105S1CWZBE](#) [SLB124145](#) [SLB1280R5](#) [SLB1340R45](#) [25136NLDB](#)