# 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

### **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  $\Omega$  max. initial @

2-4 V DC, 100 mA.

INSULATION RESISTANCE:  $10^9 \ \Omega$  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.

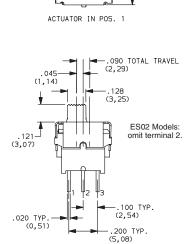
### **How To Order**

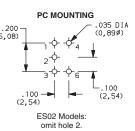
Complete part numbers for ES Series Sealed Tiny Slide Switches are shown on pages I-5 through I-7. These unique tiny slide switches are process compatible. An internal o-ring and epoxy base seal protects the switch from wave and reflow soldering, as well as cleaning processes.

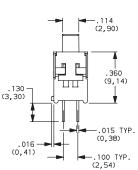
(10,03)

-.237 (6**,**02)

	SWITCH FUNCTION		
	POS. 1 POS. 2 POS.		
PART NUMBER	•	4	_
ES01MCBE	ON	NONE	ON
ES03MCBE	ON	OFF	ON
CONN. TERMINALS	2-3	OPEN	2-1
SCHEMATIC		<b>Q</b> 2 (COI	(MM
SPDT		• /•3	
ES02MCBE	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC		1.00	13
SPDT			13









ES01MCBE SPDT

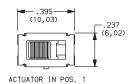


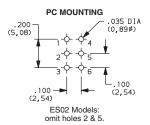
Dimensions are shown: Inch (mm) Specifications and dimensions subject to change



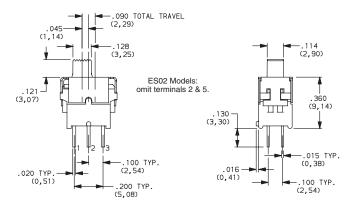
# **ES Series Sealed Tiny Slide Switches**







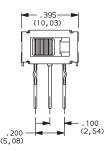
ES21MCBE **DPDT** 



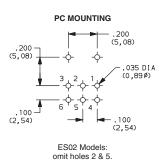
	SWITCH FUNCTION			
	POS. 1	POS. 2	POS. 3	
PART NUMBER	1	4		
ES21MCBE	ON	NONE	ON	
ES23MCBE	ON	OFF	ON	
CONN. TERMINALS	2-3, 5-6	OPEN	2-1, 5-4	
SCHEMATIC	<b>Q</b> 2 (COMM) <b>Q</b> 5 (COMM)			
1 ● \				
ES22MCBE	OFF	NONE	ON	
CONN. TERMINALS	OPEN	N/A	3-1, 6-4	
SCHEMATIC	1 • 3		<b>9</b> 6	
DPST	. 3/			

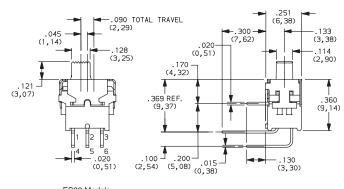


ES21MABE **DPDT** 



ACTUATOR IN POS. 1



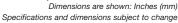


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omit	term	inals	2	&	5.

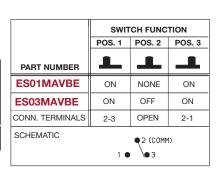
	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
PART NUMBER	1	4	4
ES21MABE	ON	NONE	ON
ES23MABE	ON	OFF	ON
CONN. TERMINALS	2-3, 5-6	OPEN	2-1, 5-4
SCHEMATIC •2 (COMM) •5 (COMM)			
1 ◆ <b>\</b> ●3 4 ● <b>\</b> ●6 DPDT			
ES22MABE	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC	1 • 3	4	6

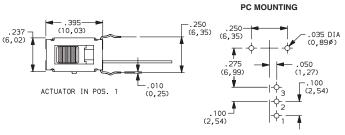


www.ckswitches.com







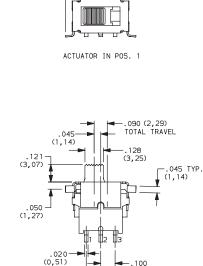




.090(2,29) TOTAL TRAVEL .128 (3,25) -.114 (2**,**90) .128 (3,25) (2,51) .121-.360 (9,14) L<sub>.025</sub> (0,64) L<sub>.100</sub> (2,54) E.100 -.020 (0,51) .015 (2,54).080 .050 (1,27) -.200 (5,08)

ES01MAVBE SPDT

	SWITCH FUNCTION		
	POS. 1	POS. 2	POS. 3
PART NUMBER	1	1	4
ES01MSABE	ON	NONE	ON
ES03MSABE	ON	OFF	ON
CONN. TERMINALS	2-3	OPEN	2-1
SCHEMATIC  1  2 (COMM)  1  3			
ES02MSABE	OFF	NONE	ON
CONN. TERMINALS	OPEN	N/A	3-1
SCHEMATIC	•		-
SPST		1	3



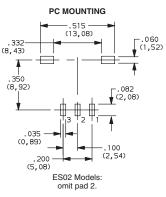
.200

ES02 Models: omit terminal 2.

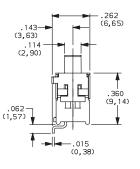
ES02 Models:

- .395-(10,03)

.047 TYP.-(1,19)



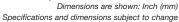
ES02 Models: omit hole 2.





ES01MSABE
Horizontal Actuation
SPDT



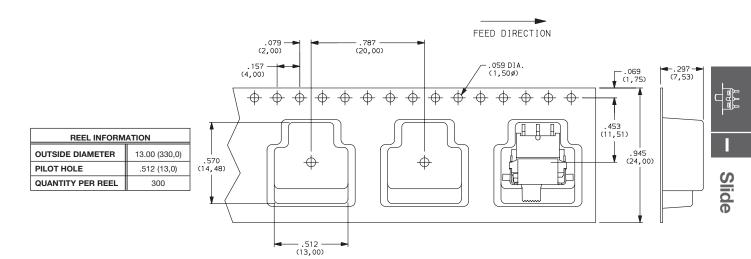


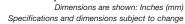


-.100 (2,54)

## **TAPE & REEL**

For part numbers ESXXMSABE







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STS141RA04 T2215BEN506 GF-124-0204 GH46P000001 GH46W000001 GH49P010001 25339NA 25436NLDH CST91246FK
TG36P000000 TG36P000050 47227LFE 49331L MHSS1105A 50208L L202091MS02Q 4-1437581-7 X2225CR-437W 48BFSP3M2QT
49329L 1101M1S3ZB8E2 1-1437581-1 EG1218REDACTUATOR TG39W000000 1825075-1 TG36WS80065 T105S1CWZBE
SLB1280R5 25136NLDB