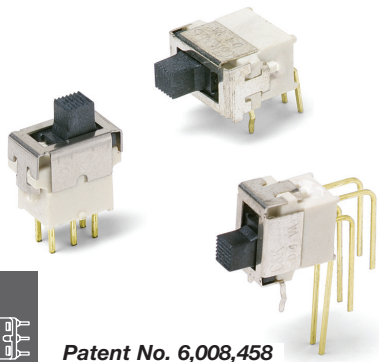


# ES Series Sealed Tiny Slide Switches



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.

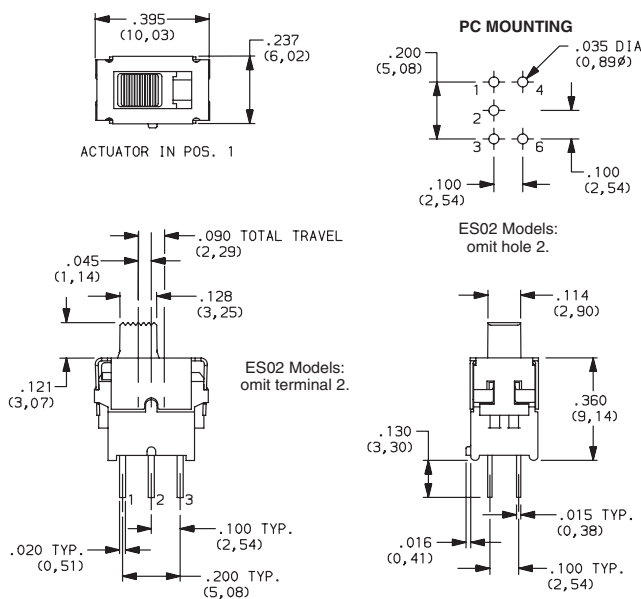
**NOTE:** All models RoHS compliant and compatible with all options.

**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.

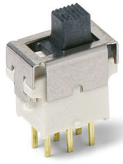
| PART NUMBER     | SWITCH FUNCTION |        |        |
|-----------------|-----------------|--------|--------|
|                 | POS. 1          | POS. 2 | POS. 3 |
| <b>ES01MCBE</b> | ON              | NONE   | ON     |
| <b>ES03MCBE</b> | ON              | OFF    | ON     |
| CONN. TERMINALS | 2-3             | OPEN   | 2-1    |
| SCHEMATIC       |                 |        |        |
| SPDT            |                 |        |        |
| <b>ES02MCBE</b> | OFF             | NONE   | ON     |
| CONN. TERMINALS | OPEN            | N/A    | 3-1    |
| SCHEMATIC       |                 |        |        |
| SPDT            |                 |        |        |



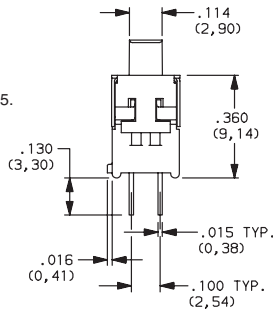
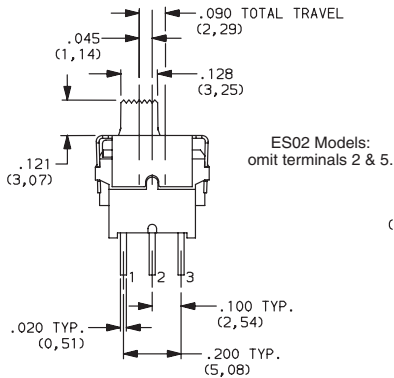
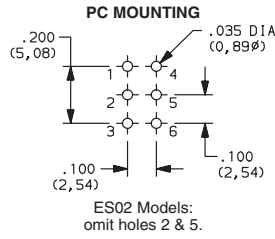
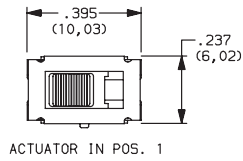
Dimensions are shown: Inch (mm)  
 Specifications and dimensions subject to change



# ES Series Sealed Tiny Slide Switches



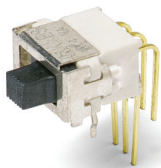
ES21MCBE  
DPDT



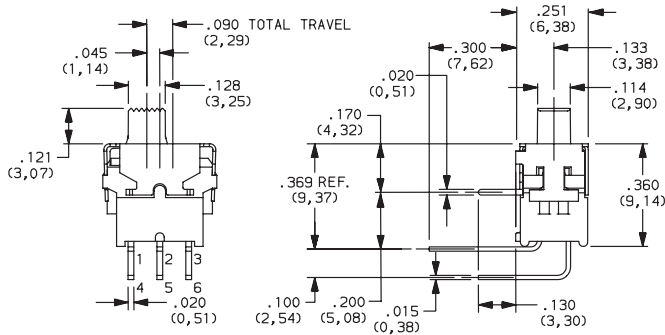
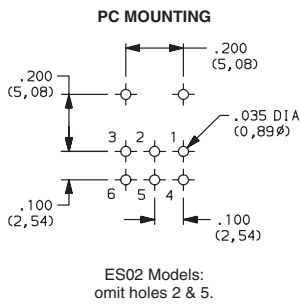
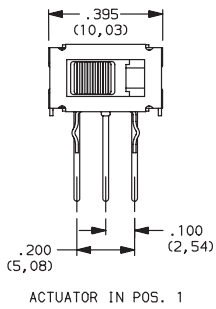
| PART NUMBER     | SWITCH FUNCTION |        |          |
|-----------------|-----------------|--------|----------|
|                 | POS. 1          | POS. 2 | POS. 3   |
| ES21MCBE        | ON              | NONE   | ON       |
| ES23MCBE        | ON              | OFF    | ON       |
| CONN. TERMINALS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



Slide



ES21MABE  
DPDT

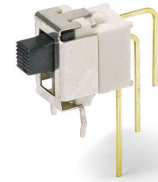
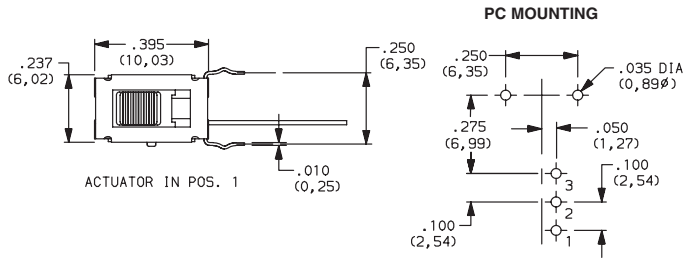


| PART NUMBER     | SWITCH FUNCTION |        |          |
|-----------------|-----------------|--------|----------|
|                 | POS. 1          | POS. 2 | POS. 3   |
| ES21MABE        | ON              | NONE   | ON       |
| ES23MABE        | ON              | OFF    | ON       |
| CONN. TERMINALS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

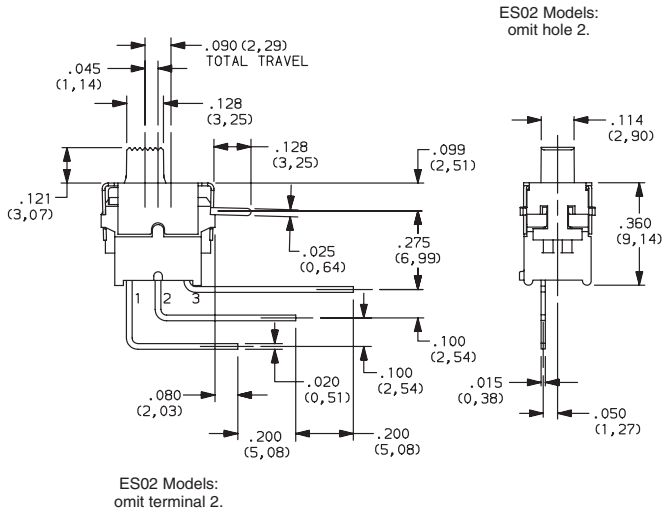
# ES Series Sealed Tiny Slide Switches

Slide

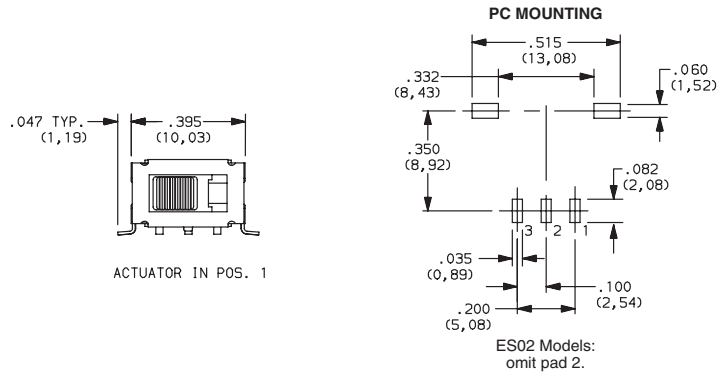
| PART NUMBER      | SWITCH FUNCTION |        |        |
|------------------|-----------------|--------|--------|
|                  | POS. 1          | POS. 2 | POS. 3 |
| <b>ES01MAVBE</b> | ON              | NONE   | ON     |
| <b>ES03MAVBE</b> | ON              | OFF    | ON     |
| CONN. TERMINALS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



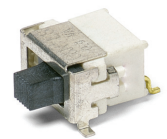
**ES01MAVBE  
SPDT**



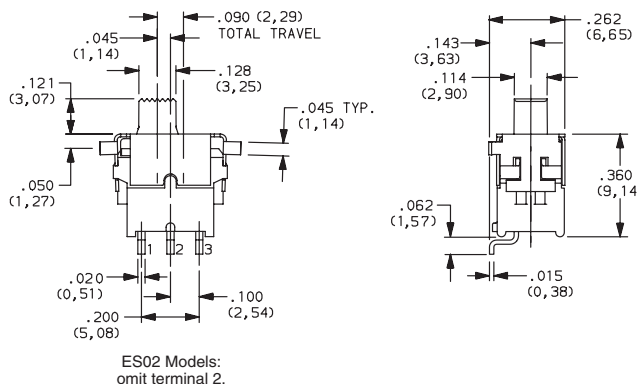
| PART NUMBER      | SWITCH FUNCTION |        |        |
|------------------|-----------------|--------|--------|
|                  | POS. 1          | POS. 2 | POS. 3 |
| <b>ES01MSABE</b> | ON              | NONE   | ON     |
| <b>ES03MSABE</b> | ON              | OFF    | ON     |
| CONN. TERMINALS  | 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**



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

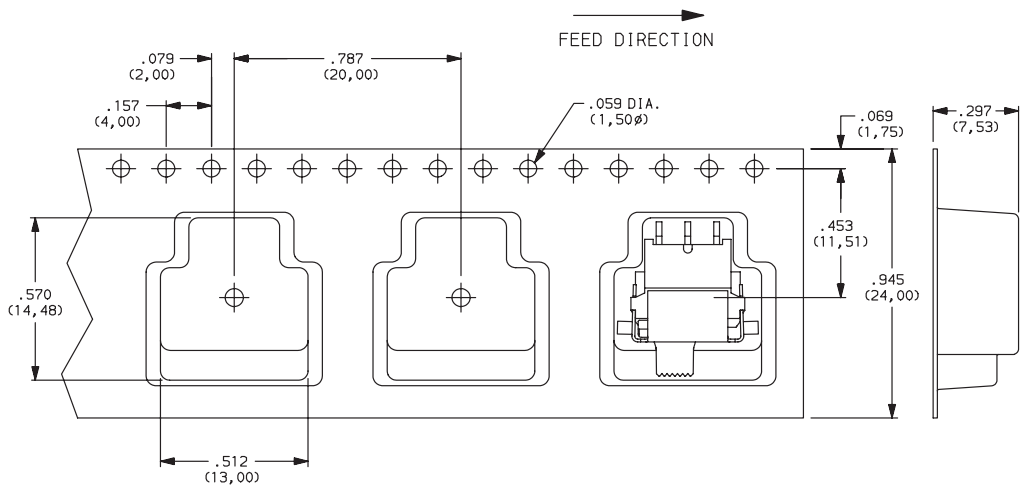


# ES Series Sealed Tiny Slide Switches

## 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





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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