## *Features/Benefits*

- ***Compact size—small footprint***
- ***Single and double pole models***
- ***PC and panel mount options available***
- ***RoHS compliant models available***

## *Typical Applications*

- ***Hand-held telecommunications***
- ***Instrumentation***
- ***Medical equipment***

## Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material (TX01 models): 3 AMPS @ 120 V AC or 28 V DC. All other models: 2 AMPS @ 120 V AC or 28 V DC. See page F-42 for additional ratings.

ELECTRICAL LIFE: TX01 models: 60,000 make-and-break cycles at full load. All other models: 30,000 cycles.

CONTACT RESISTANCE: Below 20 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: $10^9$ Ω min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: –30ºC to 85ºC.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

**NOTE:** Any models supplied with P, R, Q, B or G contact material are RoHS compliant and compatible.

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

## Materials

CASE: Glass filled nylon 6/6, flame retardant, heat stabilized or diallyl phthalate (DAP), (UL 94V-0) or glass filled nylon 4/6, flame retardant, heat stabilized.

ACTUATOR: Brass, chrome plated.

BUSHING: Brass, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass, matte-tin plated.

END CONTACTS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Coin silver, silver plated. See above for additional contact materials.

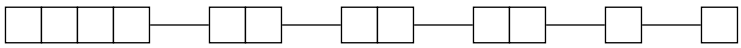
CENTER CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See page F-42 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut & Locking Ring: Brass, nickel plated. Lockwasher: Steel, nickel plated. Additional hardware available separately, see Section N.

## Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages F-38 thru F-42. For additional options not shown in catalog, consult Customer Service Center. All models have epoxy terminal seal and are compatible with all "bottom-wash" PCB cleaning methods.



**Switch Function**
- **T101** SPDT On-None-On
- **T102** SPDT Off-None-On
- **T103** SPDT On-Off-On
- **T105** SPDT Mom.-Off-Mom.
- **T107** SPDT On-Off-Mom.
- **T108** SPDT On-None-Mom.
- **T201** DPDT On-None-On
- **T203** DPDT On-Off-On
- **T205** DPDT Mom.-Off-Mom.
- **T207** DPDT On-Off-Mom.
- **T208** DPDT On-None-Mom.
- **T211** DPDT On-On-On.

**Actuator**
- **P3** Flatted, anti-rotation, .490" high
- **S** .370" high
- **K** Locking lever, round tip
- **L1** .640" high
- **M1** .220" high
- **S1** .410" high
- **M** .210" high
- **L** .290" high

**Bushing**
- **H** .220" high, threaded, flat
- **H9** .220" high, unthreaded, flat
- **CF** Splashproof, .310" high, threaded, flat
- **D9** .260" high, unthreaded, keyway
- **T** .310" high, threaded, flat
- **T9** .310" high, unthreaded, flat
- **TD** .260" high, threaded, keyway
- **TK** .310" high, threaded, keyway
- **Y** .220" high, threaded, keyway
- **Y9** .220" high, unthreaded, keyway

**Terminations**
- **A** Right angle, PC thru-hole
- **AV** Vertical right angle, PC thru-hole
- **C** PC Thru-hole
- **V3** Vertical mount V-bracket
- **Z** Solder lug
- **W** Wire wrap

**Contact Material**
- **B** Gold
- **P** Gold, matte tin
- **Q** Silver
- **G** Gold over silver
- **R** Gold over silver, matte-tin

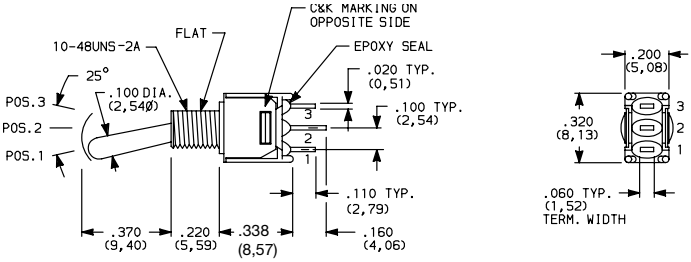
**Seal**
- **E** Epoxy

# T Series
# Subminiature Toggle Switches

## SWITCH FUNCTION

| NO. POLES | MODEL NO. | SWITCH FUNCTION POS. 1 | POS. 2 | POS. 3 | CONNECTED TERMINALS POS. 1 | POS. 2 | POS. 3 | SCHEMATIC |
|---|---|---|---|---|---|---|---|---|
| | | C&K marking on opposite side | | | C&K marking on opposite side | | | |
| SP | T101 | ON | NONE | ON | 2-3 | N/A | 2-1 | |
| | T103 | ON | OFF | ON | | | | |
| | T105 | MOM. | OFF | MOM. | 2-3 | OPEN | 2-1 | |
| | T107 | ON | OFF | MOM. | | | | |
| | T108 | ON | NONE | MOM. | 2-3 | NA | 2-1 | SPDT |
| | T102 | OFF | NONE | ON | OPEN | N/A | 3-1 | SPST |

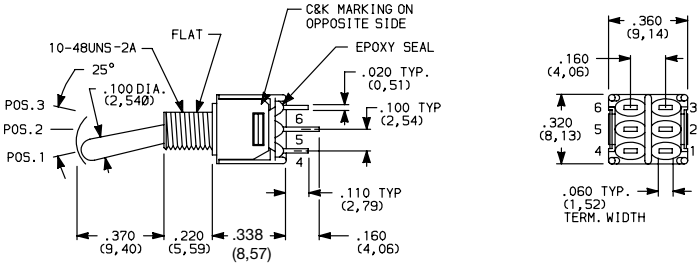
**SPDT**




Part number shown: T101SHZQE

| NO. POLES | MODEL NO. | SWITCH FUNCTION POS. 1 | POS. 2 | POS. 3 | CONNECTED TERMINALS POS. 1 | POS. 2 | POS. 3 | SCHEMATIC |
|---|---|---|---|---|---|---|---|---|
| | | C&K marking on opposite side | | | C&K marking on opposite side | | | |
| DP | T201 | ON | NONE | ON | 2-3,5-6 | N/A | 2-1,5-4 | |
| | T203 | ON | OFF | ON | 2-3,5-6 | OPEN | 2-1,5-4 | |
| | T205 | MOM. | OFF | MOM. | | | | |
| | T208 | ON | NONE | MOM. | 2-3,5-6 | N/A | 2-1,5-4 | |
| | T211* | ON | ON | ON. | 2-3,5-6 | 2-3,5-4 | 2-1,5-4 | DPDT |

**DPDT**




Part number shown: T201SHZQE

Terminal Nos.
For Reference Only

MOM. = Momentary
* Wiring for 3-way switch refer to page N-10

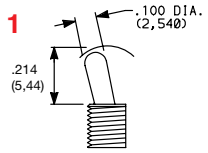
All models ® with all options when ordered with G, L, R or Q contact material.

Third Angle Projection

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

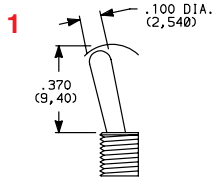
## ACTUATOR

**M** .210" HIGH



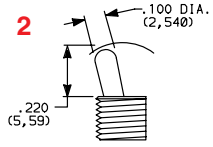

Standard with A, AV or V3 terminations.

**S** .370" HIGH

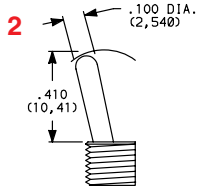



Standard with Z, C or W terminations.

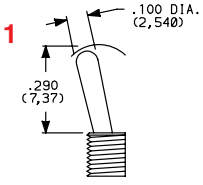
**M1** .220" HIGH
(with "T" bushing)



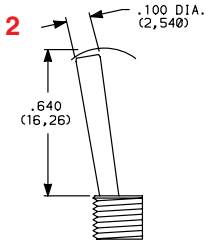

**S1** .410" HIGH
(with "T" bushing)



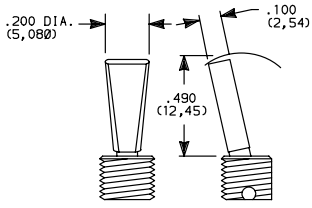

**L** .290" HIGH




**L1** .640" HIGH




**P3** ANTI-ROTATION, FLATTED,
.450" HIGH



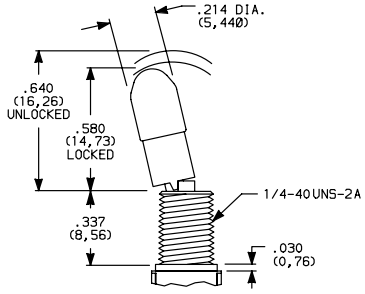

Available with T & T9 bushings only.
Dress nut part number 709901201
supplied standard with threaded bushing.

[1] Actuator shown with standard H bushing. Subtract .040 (1,02) for TD and D9 bushings, subtract .090 (2,29) for T, T9, TK, K9 & CF bushings.

[2] Actuators shown with T, T9, TK & CF bushings, add .050 (1,27) for TD and D9 bushings, add .090 (2,29) for H, H9, Y & Y9 bushings.

All actuators have chrome finish (except K).

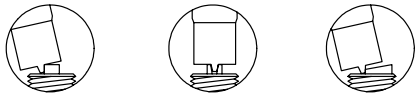
**K** LOCKING LEVER




Not available with CF bushing option.

Bushing option code not required. Not available with TX05 & TX07 models.

**Locking Positions**



–01 & –02 Models
2 Position lock

–03 & –11 Models
3 Position lock

–08 Models
1 Position lock

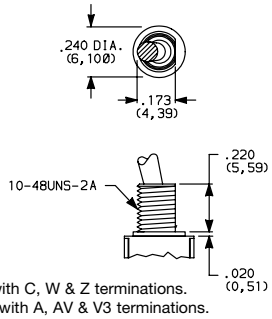
K actuators have natural aluminum finish.

Keyway on right side. To prevent accidental actuation, toggles must be lifted before being actuated. When released, toggles again lock in place. Overtightening mounting nut may cause actuator to bind.

## BUSHING

**H** .220" HIGH THREADED, FLAT

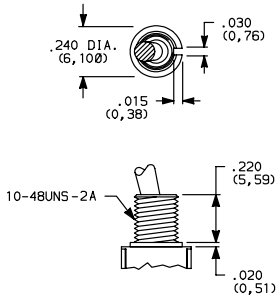
**H9** .220" HIGH UNTHREADED, FLAT




H standard with C, W & Z terminations.
H9 standard with A, AV & V3 terminations.

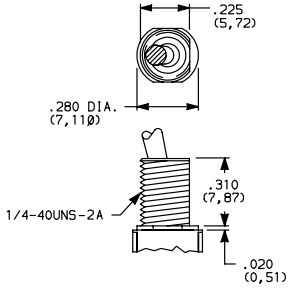
**Y** .220" HIGH THREADED, KEYWAY

**Y9** .220" HIGH UNTHREADED, KEYWAY




**T** .310" HIGH THREADED, FLAT

**T9** .310" HIGH UNTHREADED, FLAT



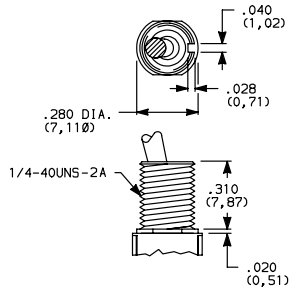

Third Angle Projection

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

# T Series
# Subminiature Toggle Switches

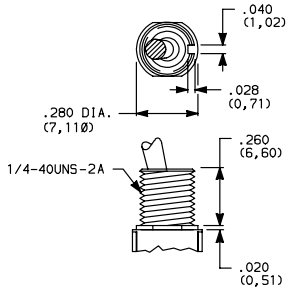
## BUSHING

**TK** .310" HIGH THREADED, KEYWAY

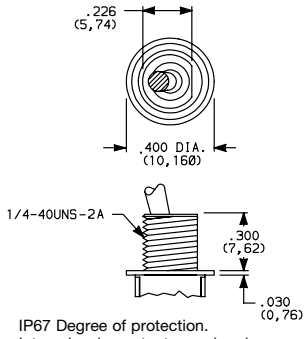



**TD** .260" HIGH THREADED, KEYWAY

**D9** .260" HIGH UNTHREADED, KEYWAY



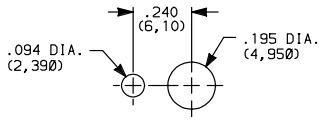

**CF** SPLASHPROOF, .310" HIGH THREADED, FLAT



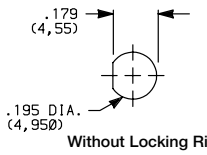

IP67 Degree of protection.
Internal o-ring actuator seal and external bushing seal washer standard.

Not available with K locking lever option.

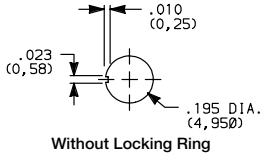
**10-48 BUSHING**




With Standard Locking Ring

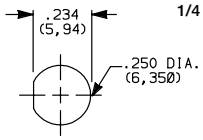



Without Locking Ring

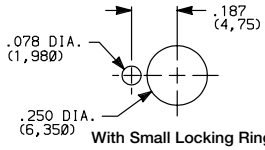



Without Locking Ring

**PANEL MOUNTING**

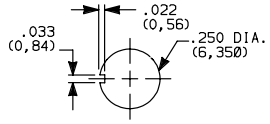



Without Locking Ring

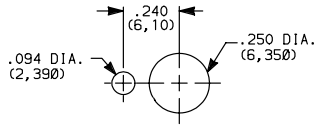



With Small Locking Ring

**1/4 IN. BUSHING**



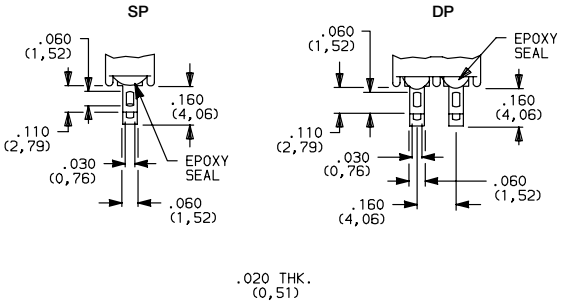

Without Locking Ring




With Standard Locking Ring

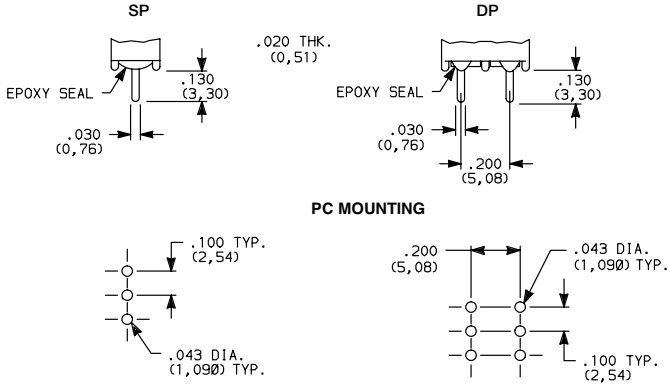
## TERMINATIONS

**Z** SOLDER LUG



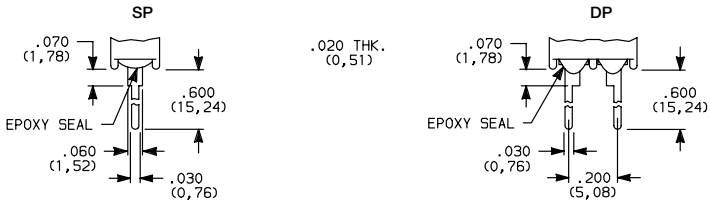

Not available with P or R contact materials.

**C** PC THRU-HOLE




T102 – omit center hole.

**W** WIRE WRAP

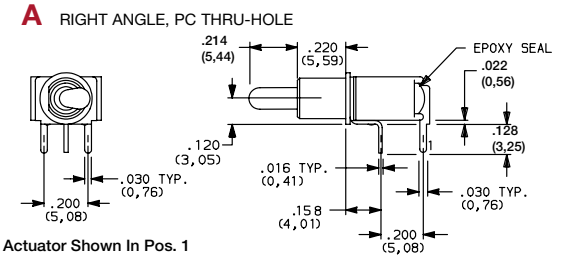


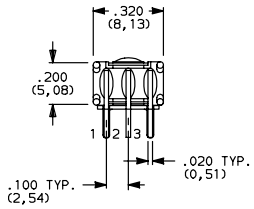

Third Angle Projection

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

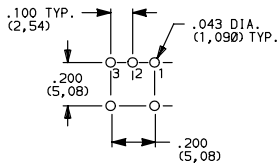
## TERMINATIONS

### A RIGHT ANGLE, PC THRU-HOLE




**PC MOUNTING**



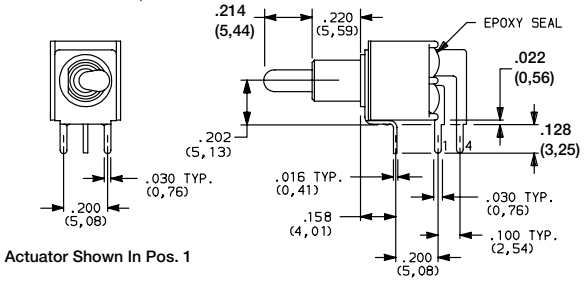
T101MH9ABE
Horizontal Actuation
**SPDT**

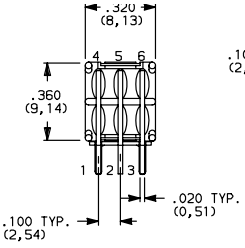
Actuator Shown In Pos. 1

Not available with T102 model.

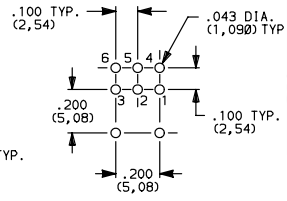
---

### A RIGHT ANGLE, PC THRU-HOLE




**PC MOUNTING**



T201MH9ABE
Horizontal Actuation
**DPDT**

Actuator Shown In Pos. 1

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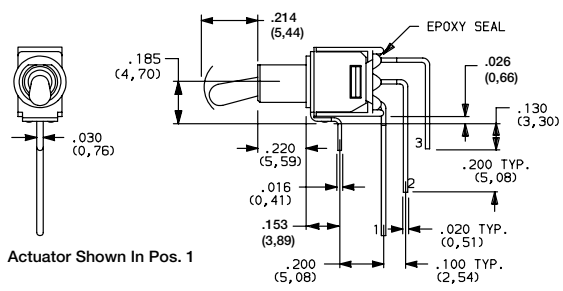
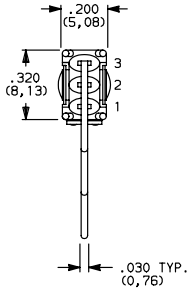
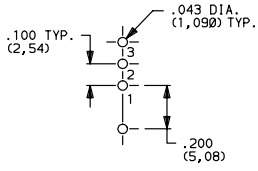
### AV VERTICAL RIGHT ANGLE, PC THRU-HOLE




**PC MOUNTING**



T101MH9AVBE
Vertical Actuation
**SPDT**

Actuator Shown In Pos. 1

T102 Models: Omit terminal 2

**NOTE:** Terminal bend radii and lead-in manufacturing option.

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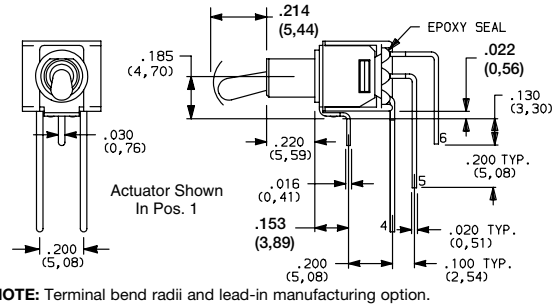
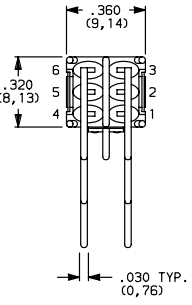
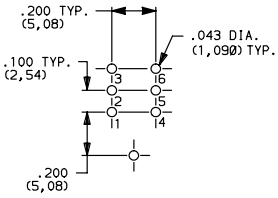
### AV VERTICAL RIGHT ANGLE, PC THRU-HOLE




**PC MOUNTING**



T201MH9AVBE
Vertical Actuation
**DPDT**

**NOTE:** Terminal bend radii and lead-in manufacturing option.

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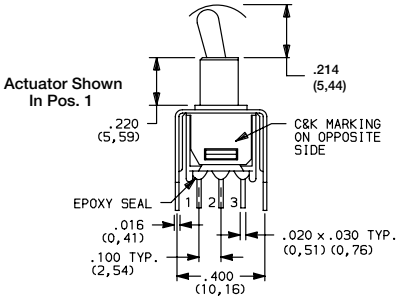
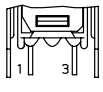
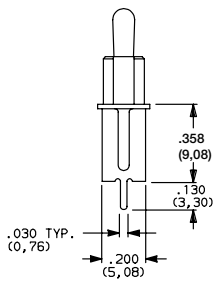
### V3 VERTICAL MOUNT, V-BRACKET

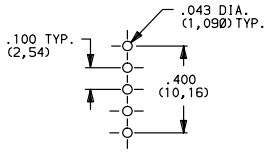


T102 Models:
Omit terminal 2




**PC MOUNTING**




T102 Models:
Omit center hole.

T101MH9V3BE
**SPDT**

Third Angle Projection

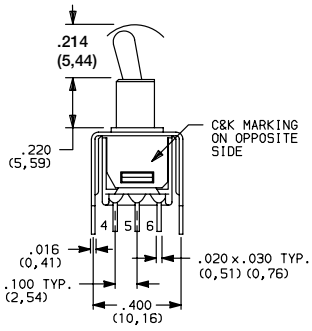
*Dimensions are shown: Inches (mm)*
*Specifications and dimensions subject to change*

# T Series
# Subminiature Toggle Switches

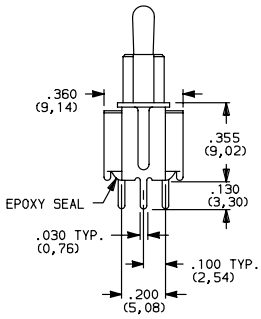
## TERMINATIONS

**V3** VERTICAL MOUNT, V-BRACKET

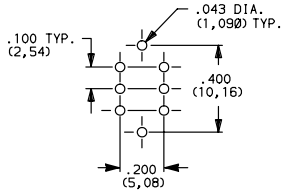
T201MH9V3BE
**DPDT**




Actuator Shown In Pos. 1




**PC MOUNTING**




## CONTACT MATERIAL

| OPTION CODE | CONTACT MATERIAL | TERMINAL PLATING | RATINGS | |
|---|---|---|---|---|
| B | GOLD [1] | GOLD [1] | LOW LEVEL/ DRY CIRCUIT | 0.4 VA MAX. @ 20 V AC OR DC MAX. |
| P | | MATTE-TIN [6] | | |
| Q | SILVER [4,5] | SILVER [5] | POWER | TX01 MODELS: 3 AMPS @ 120 V AC OR 28 V DC.<br>ALL OTHER MODELS: 2 AMPS @ 120 V AC OR 28 V DC. |
| G | GOLD OVER SILVER [2,3] | GOLD [3] | LOW LEVEL/DRY CIRCUIT OR POWER | TX01 MODELS: 0.4 VA MAX @ 20 V AC OR DC MAX. OR 3 AMPS @ 120 V AC OR 28 V DC.<br>ALL OTHER MODELS: 0.4 VA MAX @ 20 V AC OR DC MAX. OR 2 AMPS @ 120 V AC OR 28 V DC. |
| R | | MATTE-TIN [6] | | |

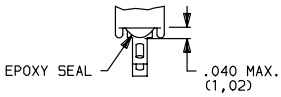
* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

[1] CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.
[2] END CONTACTS: Coin silver, with gold plate over nickel plate.
[3] CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.
[4] END CONTACTS: Coin silver, silver plated.
[5] CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.
[6] TERMINALS: Copper alloy, with matte-tin over nickel plate.

All models with all options when ordered with R, G, or Q contact material.
B contact material standard with A, AV, V3 & W terminations.
Q contact material standard with C & Z terminations.

## SEAL

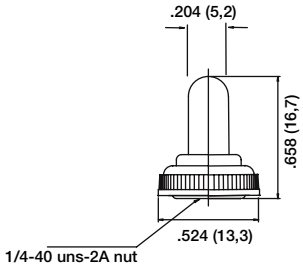
**E** EPOXY SEAL




## AVAILABLE HARDWARE

**759D02000** SEALING BOOT

* Note: For use with S1 actuator style when combined with T, TK, and CF bushings.




Third Angle Projection

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

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## Поставка электронных компонентов

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

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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AVIC JONHON

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**«FORSTAR»** (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).

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