

T Series Subminiature Toggle Switches

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: $10^9 \Omega$ min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

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

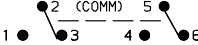
SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
		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	2-3	OPEN	2-1	
	T105	MOM.	OFF	MOM.				
	T107	ON	OFF	MOM.	2-3	NA	2-1	
	T108	ON	NONE	MOM.				
	T102	OFF	NONE	ON	OPEN	N/A	3-1	SPST 

SPDT



Part number shown: T101SHZQE

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
		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



Terminal Nos.
For Reference Only

Part number shown: T201SHZQE

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.



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

C&K

T Series Subminiature Toggle Switches

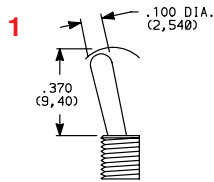
ACTUATOR

M .210" HIGH



Standard with A, AV or V3 terminations.

S .370" HIGH

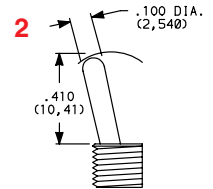


Standard with Z, C or W terminations.

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



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



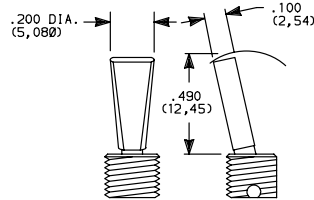
L .290" HIGH



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



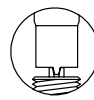
Not available with CF bushing option.

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



H standard with C, W & Z terminations.

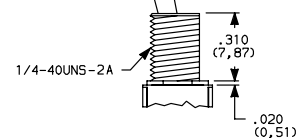
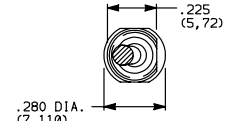
H9 standard with A, AV & V3 terminations.

Y .220" HIGH THREADED, KEYWAY

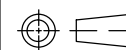


Y9 .220" HIGH UNTHREADED, KEYWAY

T .310" HIGH THREADED, FLAT



T9 .310" HIGH UNTHREADED, FLAT



Third Angle
Projection

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

C&K

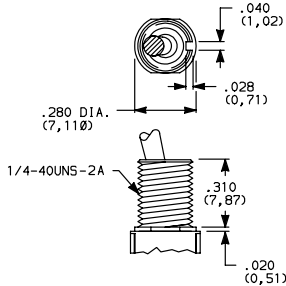


F

Toggle

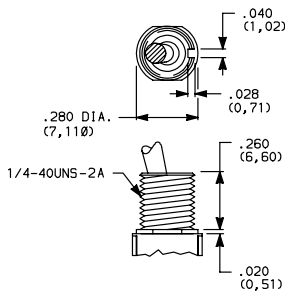
Subminiature Toggle Switches

TK .310" HIGH THREADED, KEYWAY

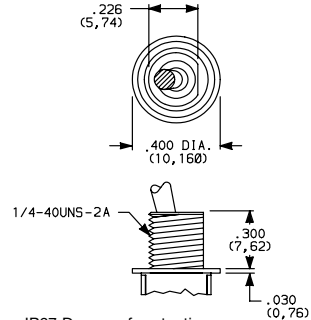


TD .260" HIGH THREADED, KEYWAY

D9 .260" HIGH UNTHREADED, KEYWAY



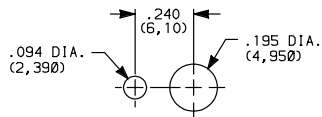
CF SPLASHPROOF, .310" HIGH THREADED, FLAT



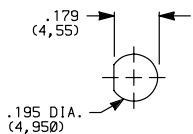
IP67 Degree of protection.
Internal o-ring actuator seal and
external bushing seal washer standard.

Not available with K locking lever option.

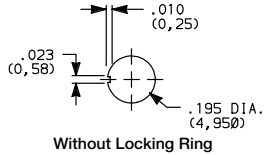
10-48 BUSHING



With Standard Locking Ring

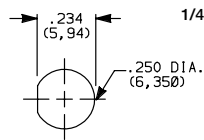


Without Locking Ring

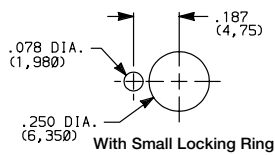


Without Locking Ring

PANEL MOUNTING

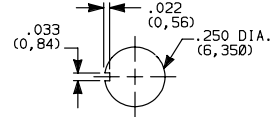


Without Locking Ring

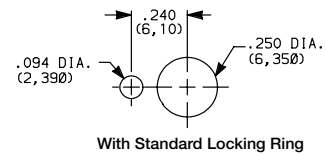


With Small Locking Ring

1/4 IN. BUSHING



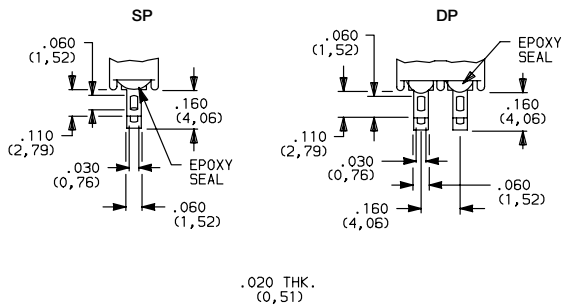
Without Locking Ring



With Standard Locking Ring

TERMINATIONS

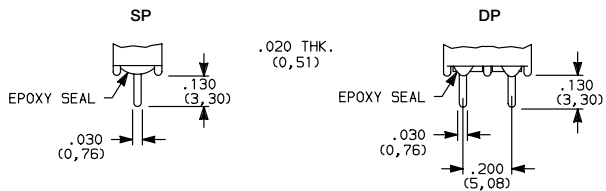
Z SOLDER LUG



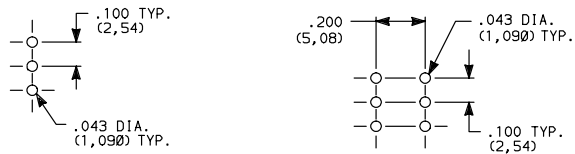
.020 THK.
(0,51)

Not available with P or R contact materials.

C PC THRU-HOLE

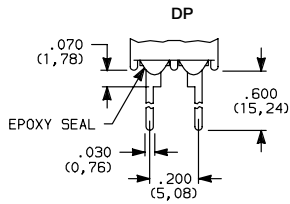
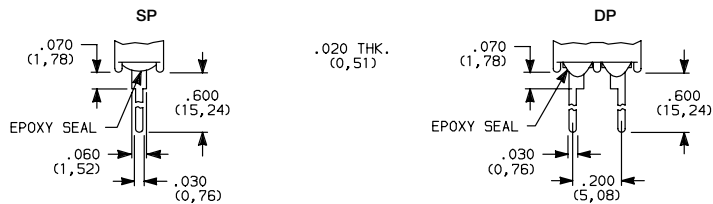


PC MOUNTING



T102 – omit center hole.

W WIRE WRAP



Dimensions are shown: Inches (mm)

Specifications and dimensions subject to change

T Series Subminiature Toggle Switches

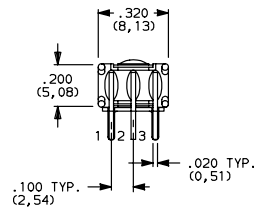
TERMINATIONS

A RIGHT ANGLE, PC THRU-HOLE

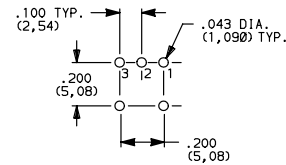


Actuator Shown In Pos. 1

Not available with T102 model.

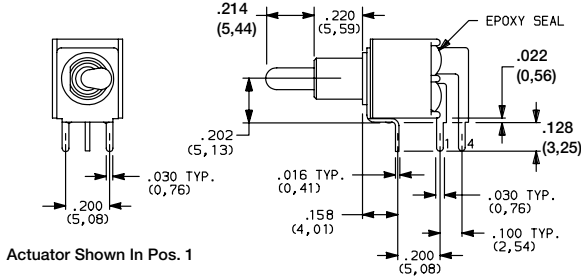


PC MOUNTING

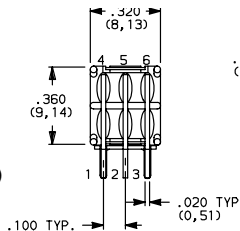


T101MH9ABE
Horizontal Actuation
SPDT

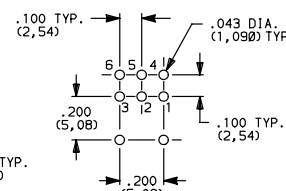
A RIGHT ANGLE, PC THRU-HOLE



Actuator Shown In Pos. 1

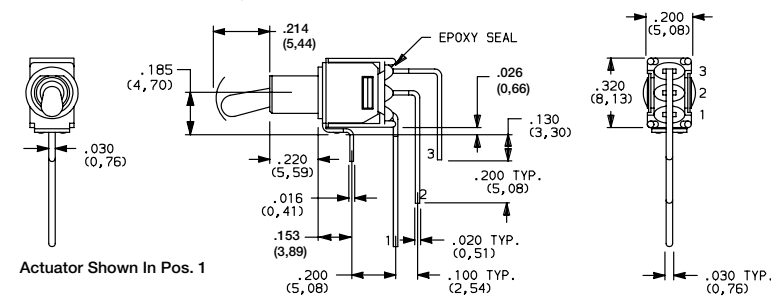


PC MOUNTING



T201MH9ABE
Horizontal Actuation
DPDT

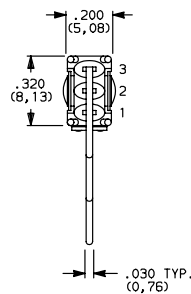
AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



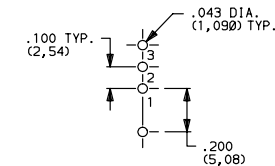
Actuator Shown In Pos. 1

T102 Models: Omit terminal 2

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

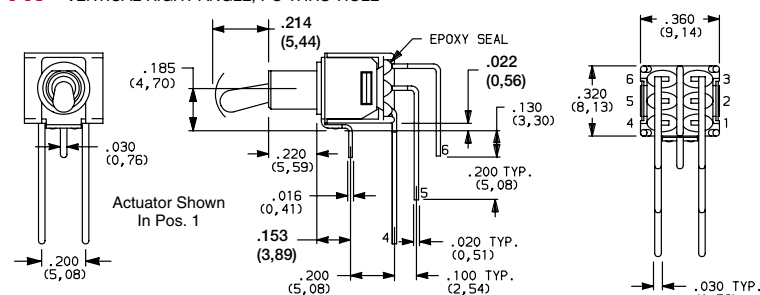


PC MOUNTING

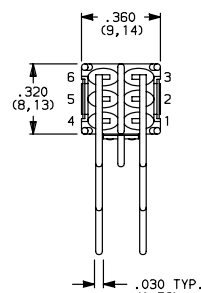


T101MH9AVBE
Vertical Actuation
SPDT

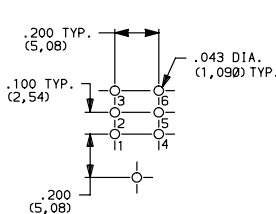
AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



Actuator Shown In Pos. 1



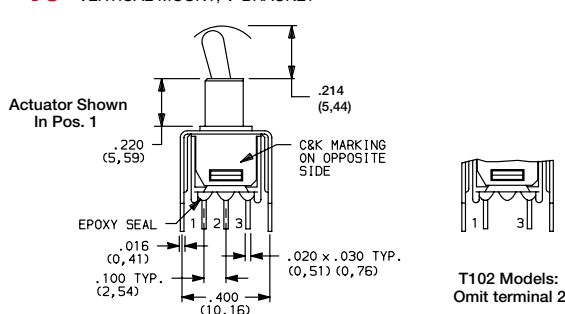
PC MOUNTING



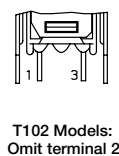
T201MH9AVBE
Vertical Actuation
DPDT

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

V3 VERTICAL MOUNT, V-BRACKET

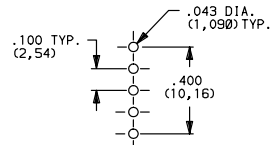


Actuator Shown In Pos. 1



T102 Models:
Omit terminal 2

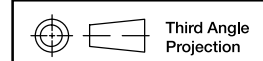
PC MOUNTING



T102 Models:
Omit center hole.



T101MH9V3BE
SPDT



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

C&K



F

Toggle

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. 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. 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.

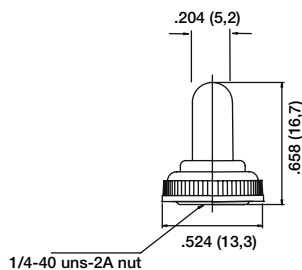
SEAL

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



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.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«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).



Телефон: 8 (812) 309-75-97 (многоканальный)

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