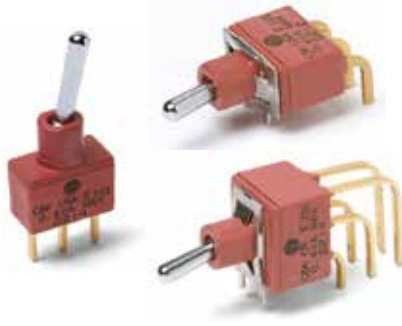


E Series

Sealed Miniature Toggle Switches



Features/Benefits

- Sealed against solder and cleaning process contaminants
- UL 94V-0 Nylon case and bushing
- Multi-positions
- ESD protection available
- RoHS compliant models available

Typical Applications

- Telecommunications
- Instrumentation
- Medical equipment



Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material: E1XX & E2XX MODELS: 7.5 AMPS @ 125 V AC or 28 V DC; 3 AMPS @ 250 V AC. E3XX MODELS: 5 AMPS @ 125 V AC or 28 V DC; 2 AMPS @ 250 V AC. See page F-29 for additional ratings.

ELECTRICAL LIFE: E1XX and E2XX models: 40,000 make-and-break cycles at full load. E3XX models: 30,000 cycles.

CONTACT RESISTANCE: Below 10 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹ Ω min.

ELECTROSTATIC DISCHARGE (ESD) OPTION: F1 conductive bushing only. Dissipates up to 20,000 V DC from actuator to ground.

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).

DEGREE OF PROTECTION: IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion.

Materials

CASE & BUSHING: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0). F1 conductive bushing option is impregnated with carbon fibers.

ACTUATOR: Brass, chrome plated with internal o-ring seal standard.

SWITCH SUPPORT: Brass or steel, matte-tin plated.

SWITCH SUPPORT RETAINER: Stainless steel.

CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See page F-29 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut & Locking ring: Brass, nickel plated. Lockwasher: Steel, nickel plated.

NOTE: Any models supplied with P, S, 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.

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-23 thru F-29. For additional options not shown in catalog, consult our Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.

Switch Function	Actuator	Bushing	Terminations	Contact Material	Seal
E101 SP, On-None-On	M .300" high	D1 .250" high	A Right angle, PC thru-hole	B Gold	
E103 SP, On-Off-On	S .500" high	*F1 Conductive, .250" high	AV2 Vertical right angle, PC thru-hole	P Gold, matte-tin	
E105 SP, Mom.-Off-Mom.	L3 Plastic, .940" high	D9 .280" high	C PC Thru-hole	Q Silver	
E107 SP, On-Off-Mom.		**Y Threaded, .350" high	V3 .460" high, V-bracket	S Silver, matte-tin	
E108 SP, On-None-Mom.			Z Solder lug	G Gold over silver	
E201 DP, On-None-On			A3 Right angle, PC thru-hole	R Gold over silver, matte-tin	
E203 DP, On-Off-On			AV3 Vertical right angle, PC thru-hole		
E205 DP, Mom.-Off-Mom.			V6 .460" high, V-bracket		
E207 DP, On-Off-Mom.			V9 1.150" high, V-bracket		
E208 DP, On-None-Mom.			V31 .460" high, snap-in V-bracket		
E211 DP, On-On-On			V61 .460" high, snap-in V-bracket		
E213 DP, On-On-Mom.			W .750" long, wire wrap		
E215 DP, Mom.-On-Mom.			Z3 Quick connect		
**E301 3P, On-None-On					E Epoxy

* F1 available with SP and DP versions only, please see page F-19

** Y threaded bushing available for 1 & 2 pole only

Toggle F

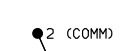


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

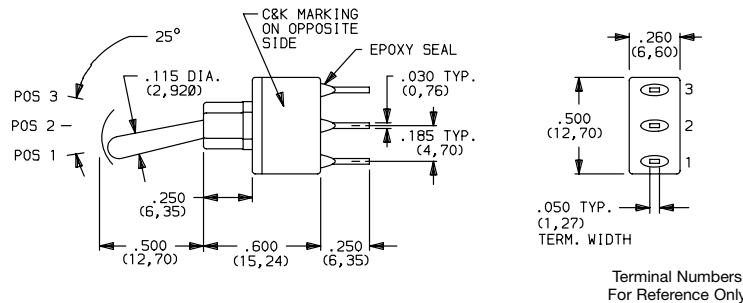
E Series Sealed Miniature Toggle Switches

SWITCH FUNCTION



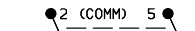
NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
		C&K marking on opposite side			C&K marking on opposite side			
SP	E101	ON	NONE	ON	2-3	N/A	2-1	
	E103	ON	OFF	ON	2-3	OPEN	2-1	
	E105	MOM.	OFF	MOM.				
	E107	ON	OFF	MOM.				
	E108	ON	NONE	MOM.	2-3	N/A	2-1	

SPDT

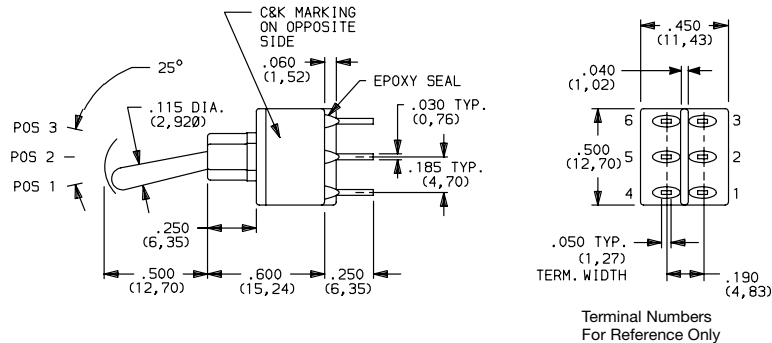


Part number shown: E101SD1CBE

Terminal Numbers
For Reference Only

DP	E201	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4	
	E203	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	E205	MOM.	OFF	MOM.				
	E207	ON	OFF	MOM.				
	E208	ON	NONE	MOM.	2-3,5-6	N/A	2-1,5-4	
	E211 **	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4	
	E213**	ON	ON	MOM.				
	E215**	MOM.	ON	MOM.				
							DPDT	

DPDT



Part number shown: E201SD1CBE

Terminal Numbers
For Reference Only

MOM. = Momentary

** Wiring for 3-way switch, see Section N.

All models with all options when ordered with G,R, Q or S contact material except with F1 conductive bushing.



F

Toggle

E Series

Sealed Miniature 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			
3P	E301	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	3PDT
3PDT Terminal Nos. For Reference Only Part number shown: E301SD1CBE								

MOM. = Momentary

** Wiring for 3-way switch, see Section N.

All models with all options when ordered with G, R, Q or S contact material except with F1 conductive bushing.

ACTUATOR

ACTUATOR COLOR

M .300" HIGH

Standard when ordered with A, A3, AV2, AV3, V2-V61 terminations. Finish: Chrome.

S .500" HIGH

Standard when ordered with C, Z, Z3, W & W4 terminations. Finish: Chrome

L3 PLASTIC, .940" HIGH

OPTION CODE	L3 ACTUATOR COLOR
2	BLACK

Other colors available, consult Customer Service Center. No color choice required for S & M actuators.

* Actuators shown with standard D1 bushing. Subtract .030 (0,76) for D9 bushing. Subtract .100 (2,54) for Y bushing.

BUSHING

D1 .250" HIGH, UNTHREADED

F1 bushing is not UL approved

D9 .280" HIGH, UNTHREADED

E3XX models not available with D9 bushing.

Y THREADED, INSULATED, .350" HIGH WITH KEYWAY

PANEL MOUNTING

F1 ESD CONDUCTIVE BUSHING, .250" HIGH, UNTHREADED

ESD protection depends on proper grounding of switch support bracket. F1 conductive bushing option is impregnated with carbon fibers; dissipates electrostatic discharge (ESD) up to 20,000 V from actuator to ground.

Available with M & S actuator options and A, A3, AV2, AV3, V3-V61 termination options.

NOTE: Internal o-ring actuator seal standard for all bushing options.

Available only with C, Z, Z3, & W terminations. Available for 1&2 pole only. Hardware: One dress nut part number 299D01201, one hex nut part number 540400201 and lockwasher part number 700303202 supplied standard. Will withstand 4 in.-lbs. of torque with no distortion.

Third Angle Projection

Dimensions are shown: Inches (mm)

Specifications and dimensions subject to change

Toggle

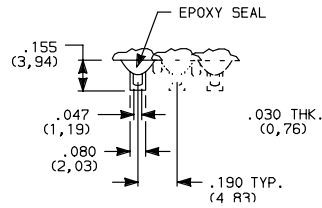
F



E Series Sealed Miniature Toggle Switches

TERMINATIONS

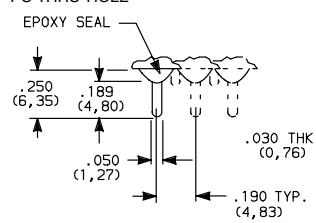
Z SOLDER LUG



SPDT thru 3PDT

Not available with F1 conductive bushing or P, R or S contact material.

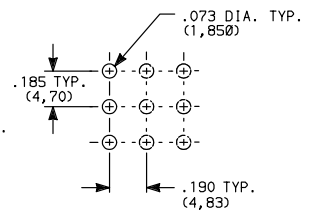
C PC THRU-HOLE



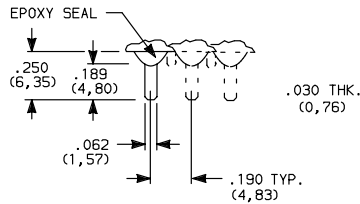
SPDT thru 3PDT

Not available with F1 conductive bushing.

PC MOUNTING



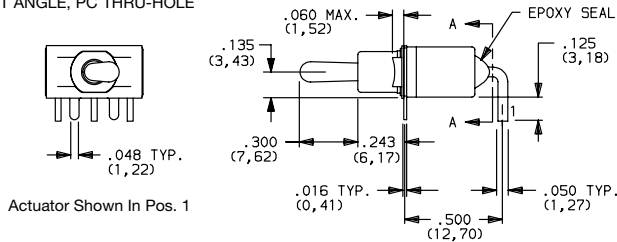
Z3 QUICK CONNECT



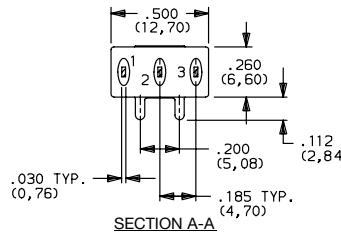
SPDT thru 3PDT

Not available with F1 conductive bushing or P, R or S contact material. Mating quick connector available; order part number 530100000, page F-16.

A RIGHT ANGLE, PC THRU-HOLE



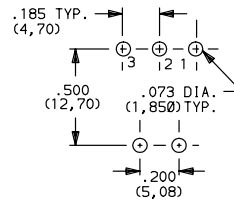
Actuator Shown In Pos. 1



SECTION A-A

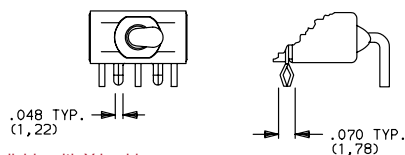
Terminal Nos. For Reference Only

PC MOUNTING



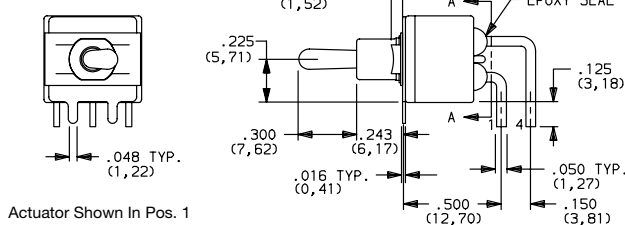
E101MD1ABE
Horizontal Actuation
SPDT

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

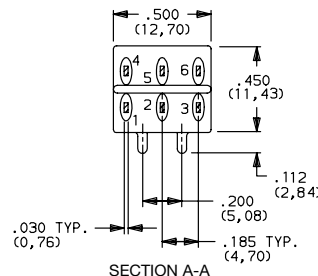


Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

A RIGHT ANGLE, PC THRU-HOLE



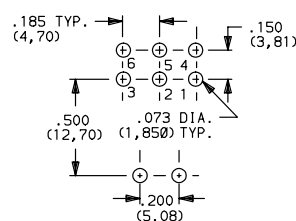
Actuator Shown In Pos. 1



SECTION A-A

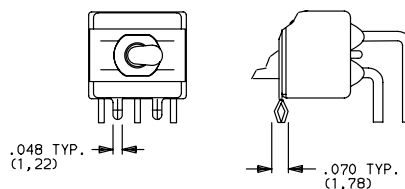
Terminal Nos. For Reference Only

PC MOUNTING



E201MD1ABE
Horizontal Actuation
DPDT

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

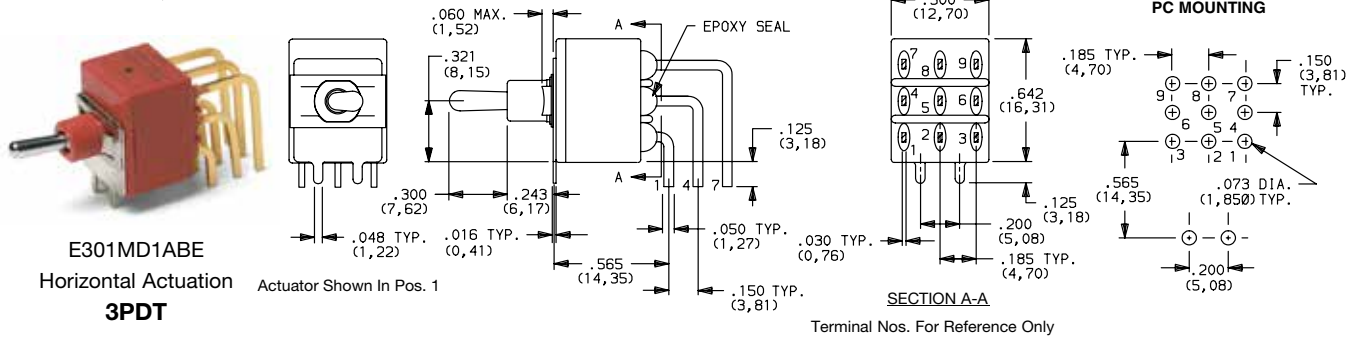


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

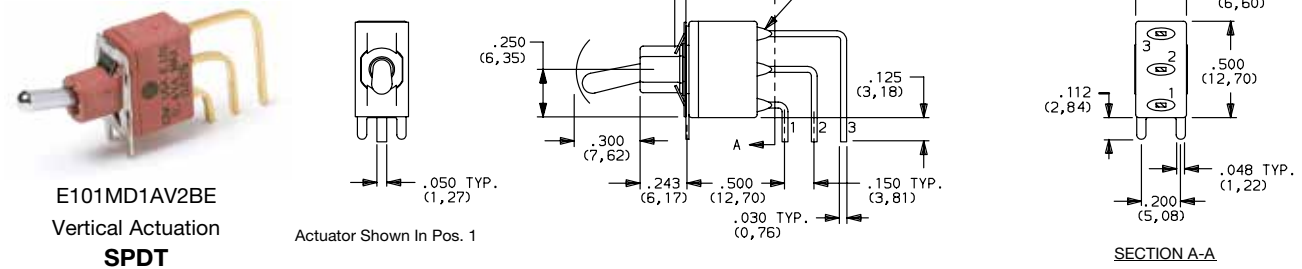
E Series Sealed Miniature Toggle Switches

TERMINATIONS

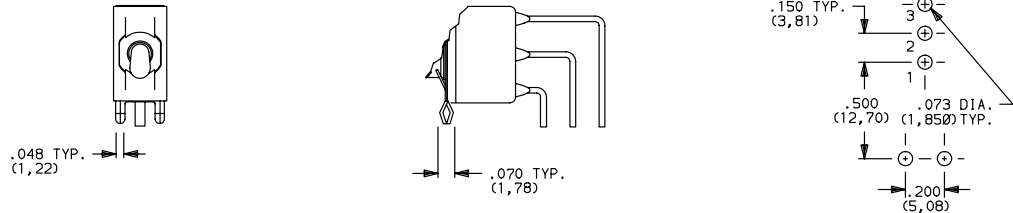
A RIGHT ANGLE, PC THRU-HOLE



AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH

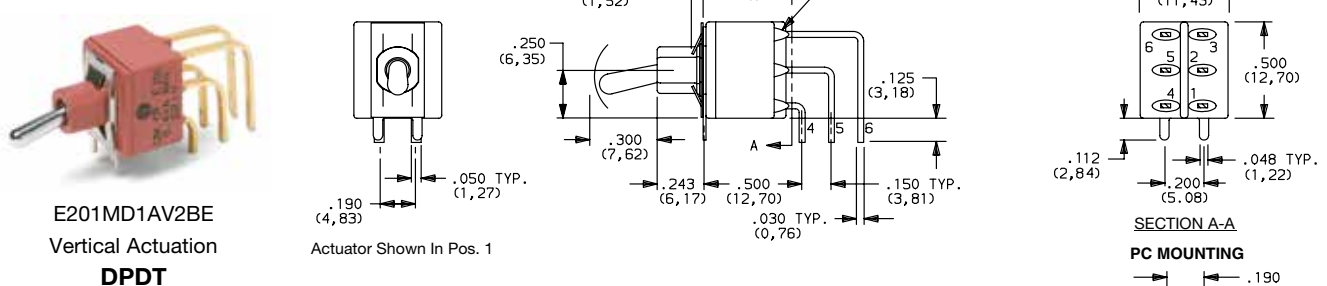


AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH

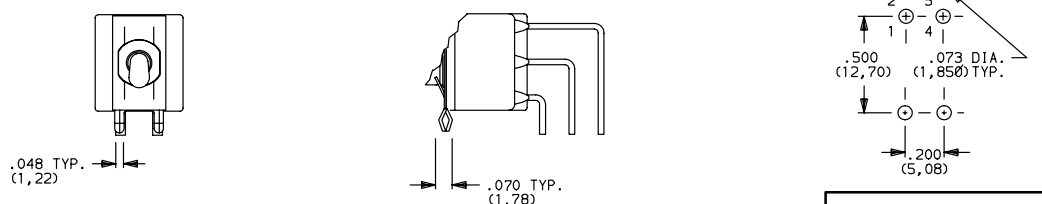


Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

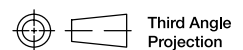
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



A3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

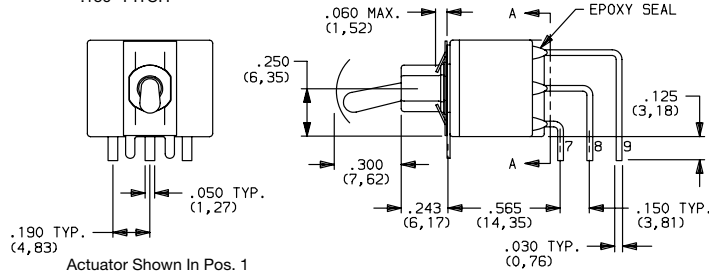


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

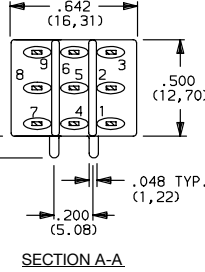
E Series Sealed Miniature Toggle Switches

TERMINATIONS

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



Actuator Shown In Pos. 1

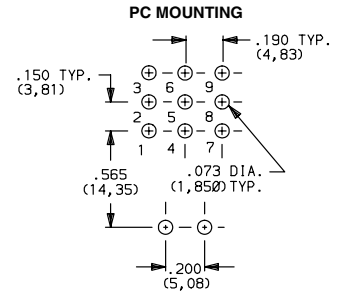


E301MD1AV2BE
Vertical Actuation
3PDT

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE .150" PITCH

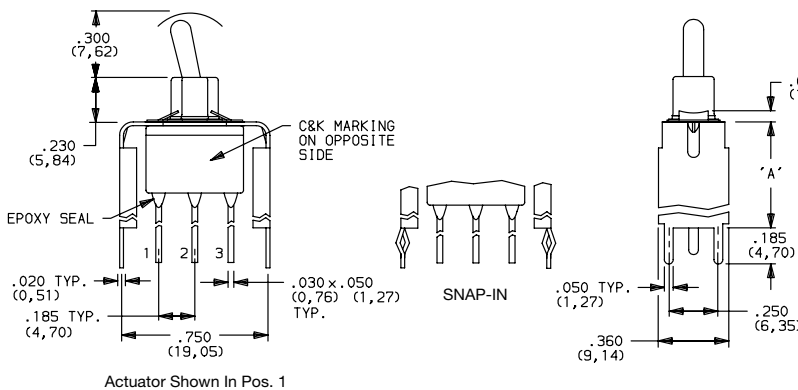


Not available with D9 & Y bushings.
Terminal bend radii and lead-in manufacturing option.



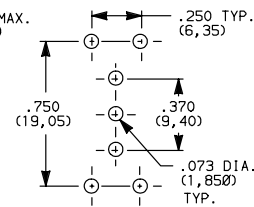
V6 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

PC MOUNTING



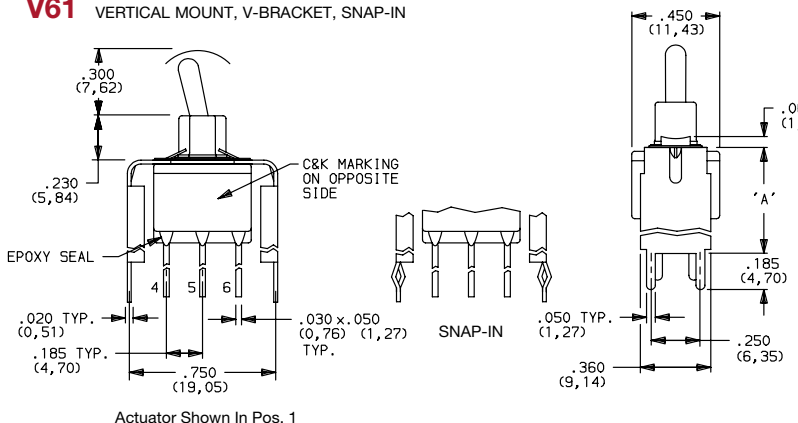
E101MD1_BE
SPDT

OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)

Not available with Y bushing.

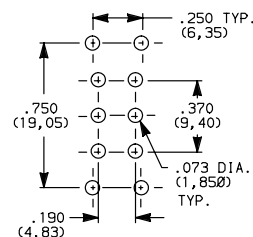
V6 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

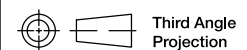
PC MOUNTING



E201MD1_BE
DPDT

OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)

Not available with Y bushing.



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



E Series Sealed Miniature Toggle Switches

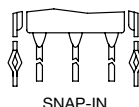
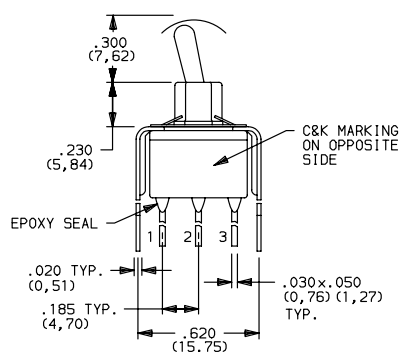
TERMINATIONS

V3, V9 VERTICAL MOUNT, V-BRACKET

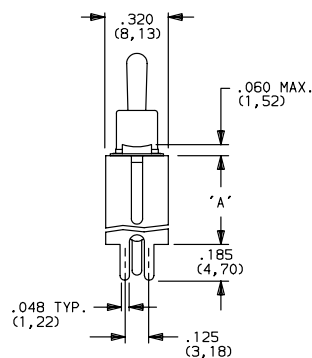
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



E101MD1__BE
SPDT



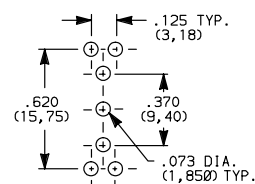
SNAP-IN



Actuator Shown In Pos. 1

Not available with Y bushing.

PC MOUNTING



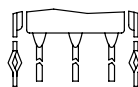
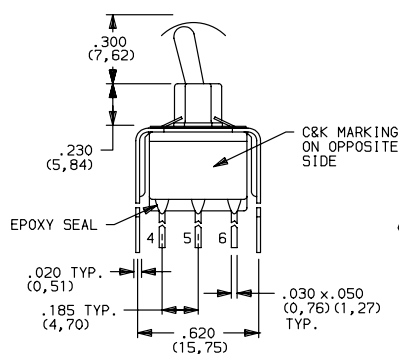
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V9	1.150 (29,21)

V3, V9 VERTICAL MOUNT, V-BRACKET

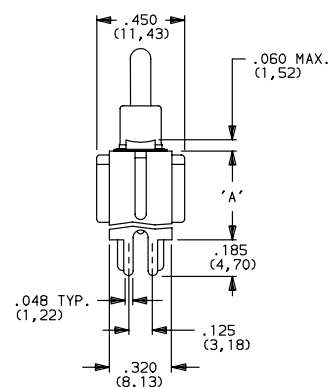
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



E201MD1__BE
DPDT



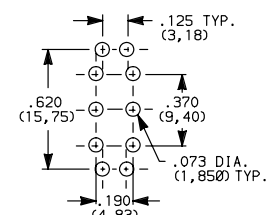
SNAP-IN



Actuator Shown In Pos. 1

Not available with Y bushing.

PC MOUNTING

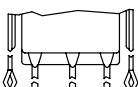
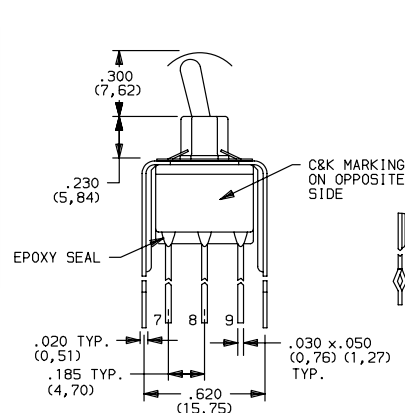


OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V9	1.150 (29,21)

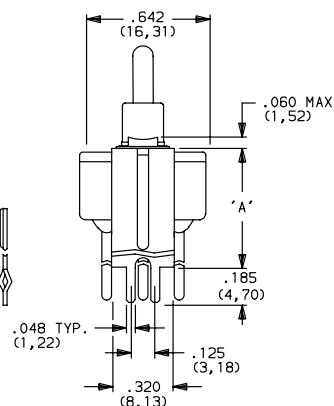
V9 VERTICAL MOUNT, V-BRACKET



E301MD1__BE
3PDT



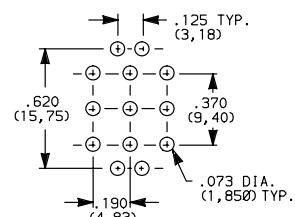
SNAP-IN



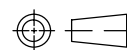
Actuator Shown In Pos. 1

Not available with D9 & Y bushings.

PC MOUNTING



OPTION CODE	DIM 'A'
V9	1.150 (29,21)



Third Angle Projection

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

E Series Sealed Miniature Toggle Switches

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	E1XX & E2XX MODELS: 7.5 AMPS @ 125 V AC OR 28 V DC; 3 AMPS @ 250 V AC. E3XX MODELS: 5 AMPS @ 125 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
S		MATTE-TIN ⁶		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	E1XX AND E2XX MODELS: 0.4 VA MAX @20 V AC OR DC MAX. OR 7.5 AMPS @125 V AC OR 28 V DC; 3 AMPS @ 250 V AC. DC E3XX MODELS: 0.4 VA MAX. @ 20 V AC OR DC MAX. OR 5 AMPS @ 125 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
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, with gold flash over silver plate. Or copper alloy, silver plated.

⁶ TERMINALS: Copper alloy, with matte-tin over nickel plate.

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

All models  with all options when ordered with S, R, G, or Q contact material except with F1 conductive bushing.

B contact material standard with all terminations.

P, S & R contact materials not available with Z & Z3 terminations.

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).



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