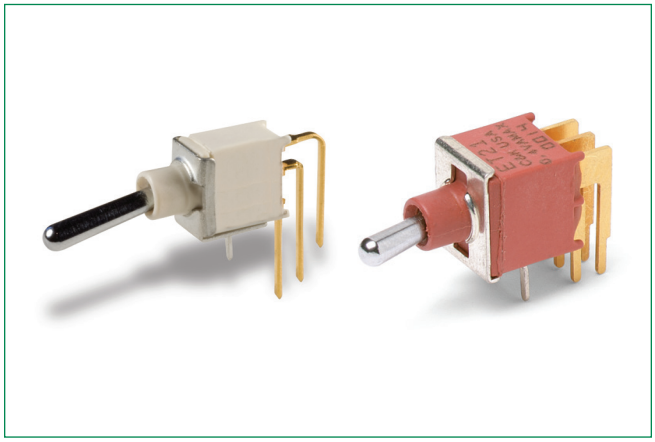
ET Series
Sealed Subminiature Toggle Switches



Description

The ET series sealed subminiature toggle switches are often used in the medical and telecommunications industry in hand-held or instrumentation applications. Featuring a small footprint (to help save space on the PCB) and ESD protection, long-lasting ET switches also come with strong protection from solder and cleaning process contaminants.

Features & Benefits

- Sealed against solder and cleaning process contaminants
- ESD protection available
- Thru-hole and surface mount models
- Compact size and small footprint save PCB space
- RoHS compliant models available

Applications

- Hand-held telecommunications
- Instrumentation
- Medical equipment

Agency Approvals

Agency	Agency File Number
c UL us	E42363

Specifications

Contact Rating	B contact material: 0.4 VA max. @ 20 V AC or DC max.
Electrical Life	ETX1 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	-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.
Packaging	Surface mount switches are shipped in tape and reel packaging.

Materials

Case & Bushing	Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) or glass filled 4/6 nylon, flame retardant, heat stabilized (UL 94V-0).
Actuator	M3 anti-static actuator: Nylon 4/6, black standard (UL 94V-0). All other actuators: Brass, chrome plated. Internal o-ring seal standard with all actuators.
Switch Support	Brass, tin plated.
Contact & Terminals	B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated.
Terminal Seal	Epoxy

Notes:
Any models supplied with Q, B, G, P or R contact material are RoHS compliant and compatible.
Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

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ET Series
Sealed Subminiature Toggle Switches

Ordering Number

To order, simply select desired option from each category and place in the appropriate box. 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.

ETxx - x - x - x - x - E - x

Switch Function
ET01: SP, On-None-On
ET02: SPST, Off-None-On
ET03: SP, On-Off-On
ET05: SP, Mom.-Off-Mom.
ET07: SP, On-Off-Mom.
ET08: SP, On-None-Mom.
ET21: DP, On-None-On
ET23: DP, On-Off-On
ET25: DP, Mom.-Off-Mom.
ET28: DP, On-None-Mom.

Actuator
M: 0.240" high
M3: Plastic, anti-static, 0.240" high
S: 0.400" high
L: 0.320" high
S1: 0.550" high

Bushing
D1: 0.177" High, Unthreaded

Terminations
A: Right angle, PC thru-hole
AV: Vertical right angle, PC thru-hole
C: PC Thru-hole
SA: Right angle, surface mount
SA1: Right angle, surface mount rear-facing
V3: Vertical mount, V-bracket
AV3: Vertical right angle, snap-in, PC thru-hole
V31: Vertical mount, V-bracket, snap-in
W: Wire wrap

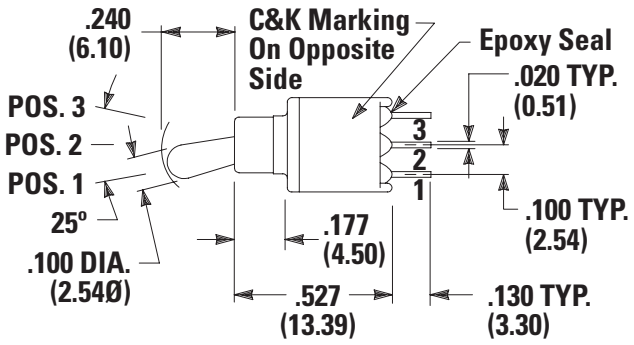
Seal
E: Epoxy

Plastic Actuator Color
None: No actuator color
1: White

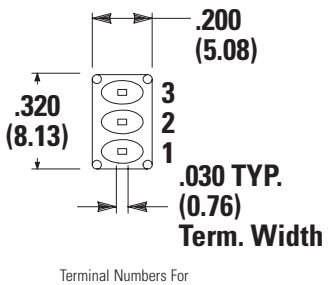
Contact Material
B: Gold
P: Gold, matte-tin
Q: Silver
S: Silver, matte-tin
G: Gold over silver
R: Gold over silver, matte-tin

Switch Function
SPDT

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						
SP	ET01	ON	NONE	ON	2-3	N/A	2-1	SPDT 2 (COMM) 1 3
	ET03	ON	OFF	ON	2-3	OPEN	2-1	
	ET05	MOM.	OFF	MOM.	2-3	OPEN	2-1	
	ET07	ON	OFF	MOM.	2-3	OPEN	2-1	
	ET08	ON	NONE	MOM.	2-3	N/A	2-1	
	ET02	OFF	NONE	ON	OPEN	N/A	3-1	SPST 1 3



ET02 Models: Omit terminal 2



Terminal Numbers For Reference Only

Notes:
Part number shown: ET01MD1CBE

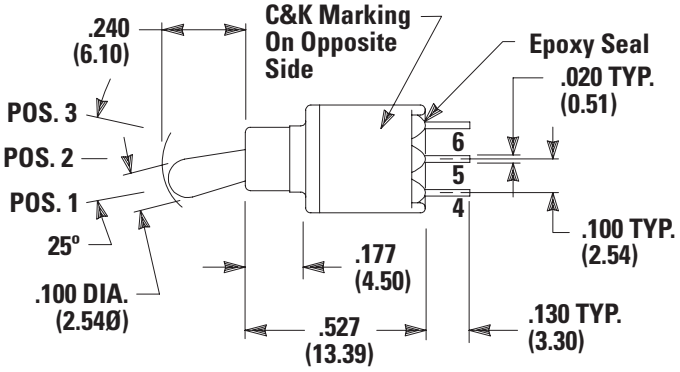
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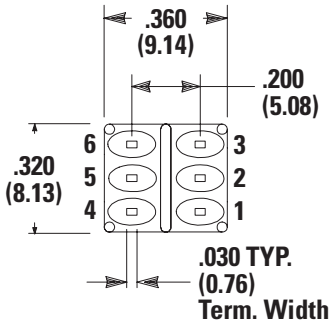
ET Series
Sealed Subminiature Toggle Switches

DPDT

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						
DP	ET21	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4	DPDT
	ET23	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	ET25	MOM.	OFF	MOM.	2-3,5-6	OPEN	2-1,5-4	
	ET28	ON	NONE	MOM.	2-3,5-6	N/A	2-1,5-4	



Part number shown: ET21MD1CBE

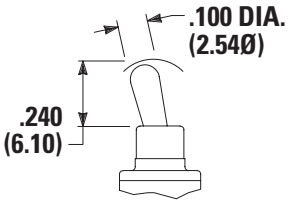


Terminal Numbers For
Reference Only

Notes:
MOM. = Momentary All models c UL us with all options when ordered with G, R, Q or S contact material.
2. Wiring for 3 way switch.

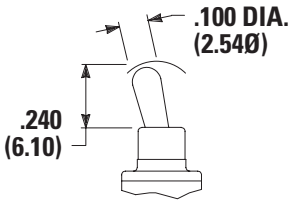
Actuator

M 0.240" High



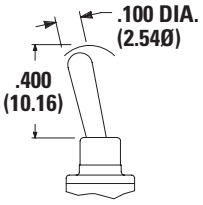
Standard with A, AV, V3 &
V31 terminations.

M3 Plastic, Antistatic 0.240" High



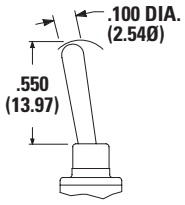
Material: Nylon 4/6 (UL 94V-0), black standard.
Static resistance: 9,000 V DC min. @ sea level,
actuator to terminals.

S 0.400" High



Standard with C or
W terminations.

S1 0.550" High



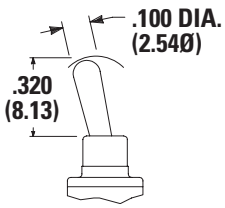
Notes: All actuators have chrome finish (except M3).

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ET Series
Sealed Subminiature Toggle Switches

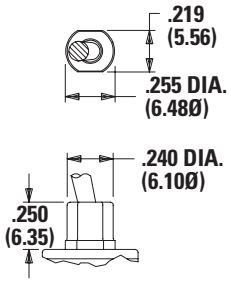
L 0.320" High



Option Code	L3 Actuator Color
(None)	Black (M3 only)
1	White (M3 only)

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

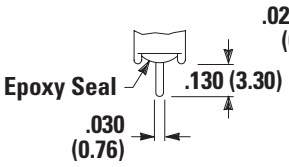
Bushing
D1 0.177" High, Unthreaded



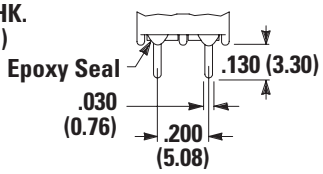
Terminations

C PC Thru-hole

SP

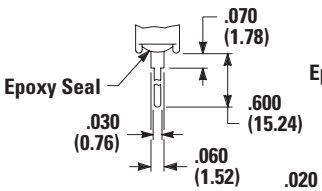


DP

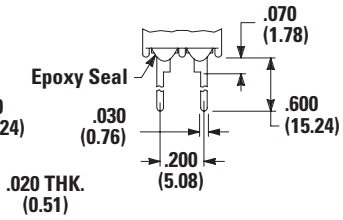


W Wire Wrap

SP



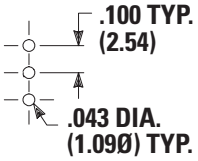
DP



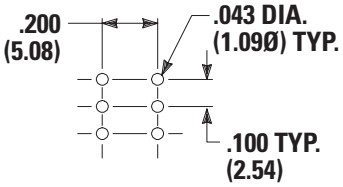
PC Mounting

SP

ET02 – omit center hole.



DP

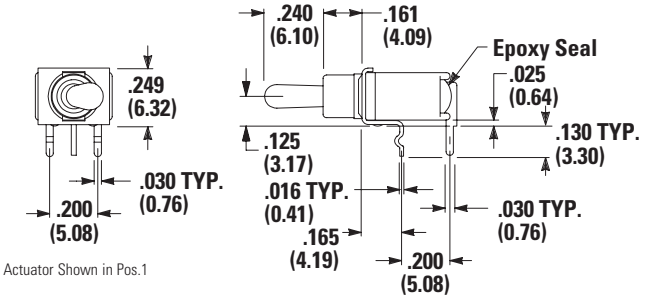


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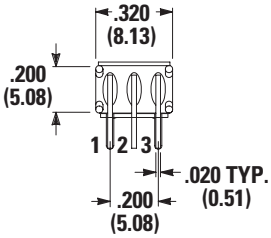
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ET Series
Sealed Subminiature Toggle Switches

A Right Angle, PC Thru-hole
ET01MD1ABE Horizontal Actuation SPDT

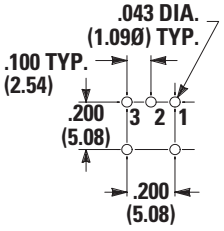


Actuator Shown in Pos.1

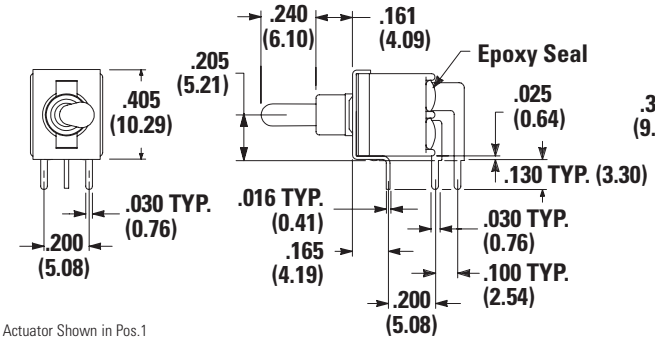


Not available with ET02 model.

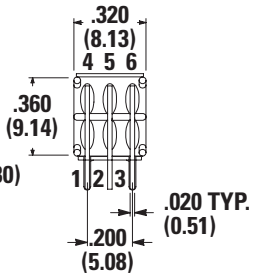
PC Mounting



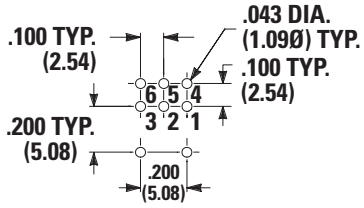
A Right Angle, PC Thru-hole
ET21MD1ABE Horizontal Actuation SPDT



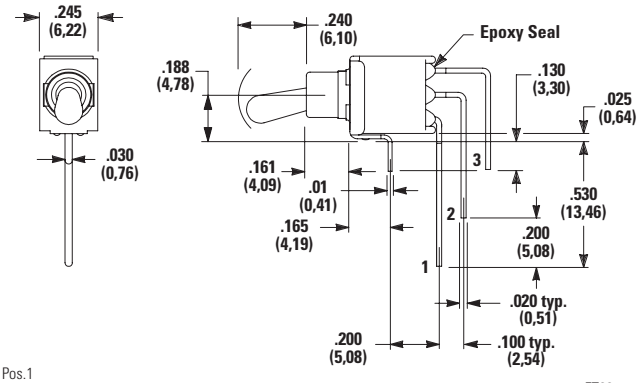
Actuator Shown in Pos.1



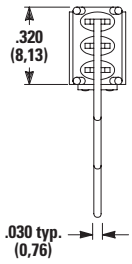
PC Mounting



AV Vertical Right Angle, PC Thru-hole
ET01MD1AVBE Vertical Actuation SPDT

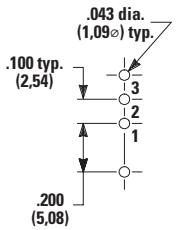


Actuator Shown in Pos.1



ET02 - omit terminal 2.

PC Mounting



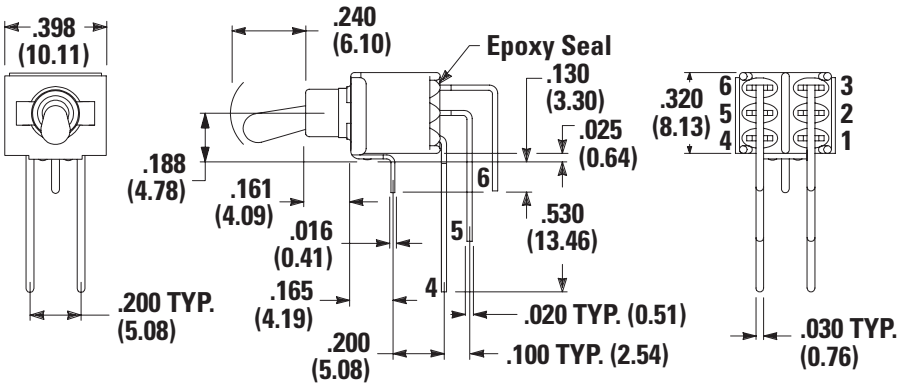
Notes: Terminal bend radii and lead-in manufacturing option.

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ET Series
Sealed Subminiature Toggle Switches

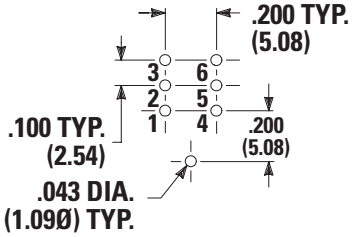
AV Vertical Right Angle, PC Thru-hole
ET21MD1AVBE Vertical Actuation DPDT



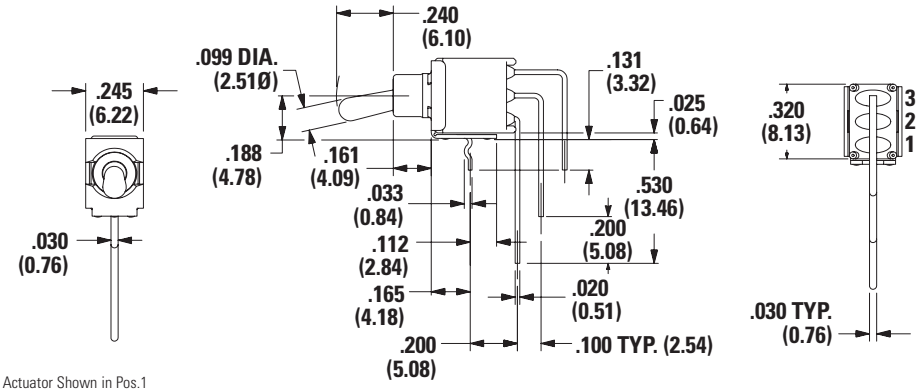
Actuator Shown in Pos.1

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

PC Mounting

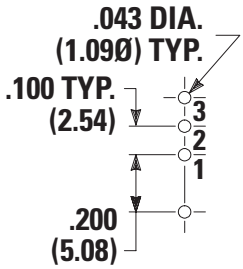


AV3 Vertical Right Angle, Snap-in, PC Thru-hole
ET01SD1AV2BE Vertical Actuation SPDT

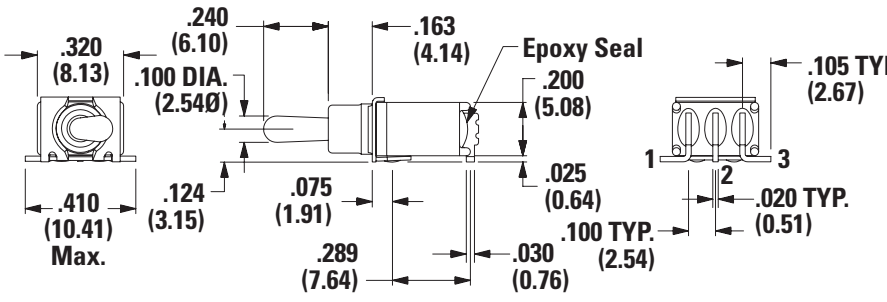


Actuator Shown in Pos.1

PC Mounting



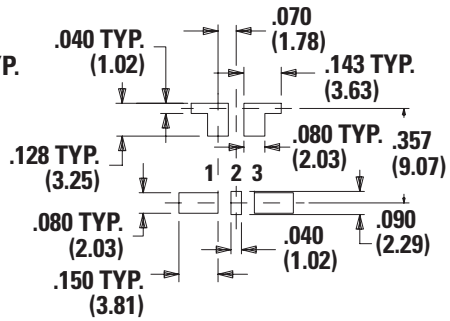
SA Right Angle, Surface Mount
ET01M3D1SAPE Horizontal Actuation SPDT Only



Actuator Shown in Pos.1

Notes: Not available with S and S1 actuators. Standard with tape & reel packaging.

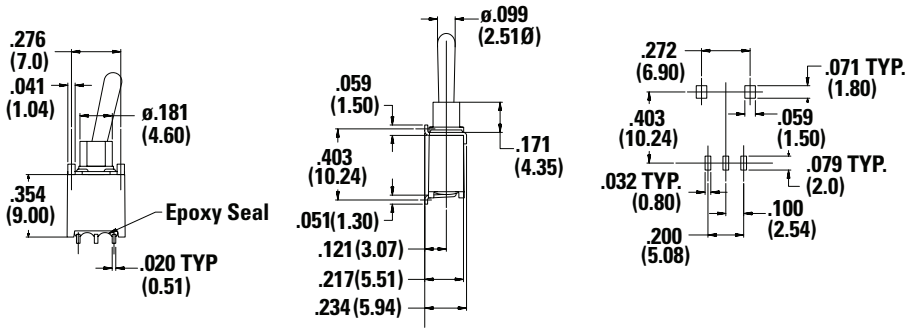
PC Mounting



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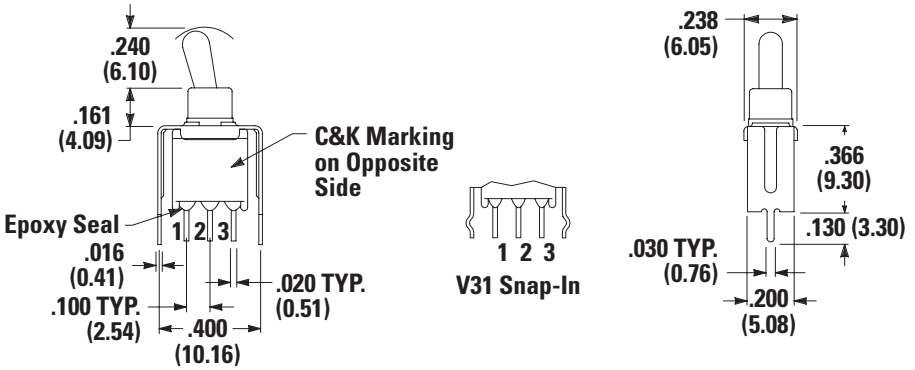
Downloaded from Arrow.com.

SA1 Right Angle, Surface Mount
ET01M3D1SA1BE Horizontal Actuation SPDT Only

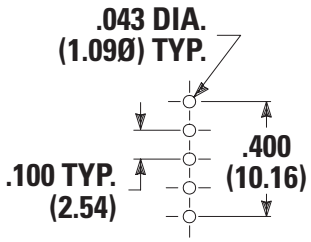


Notes: Not available in ET02 . Actuators M and M3, bushing D1, contact material B. Standard with tape and reel packaging.

V3 Vertical Mount, V-Bracket
V31 Vertical Mount, V-Bracket, Snap-in
ET01MD1V3BE SPDT

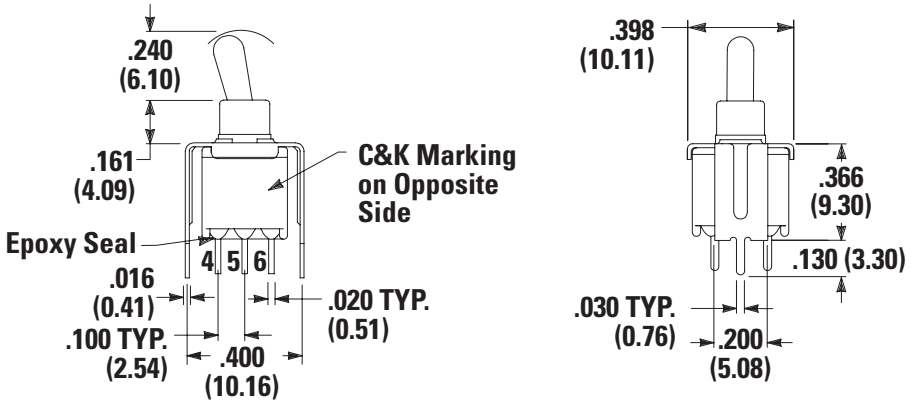


PC Mounting

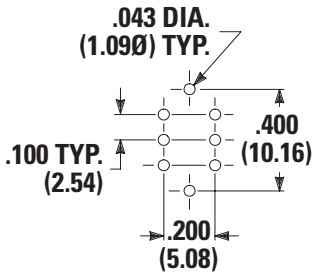


Actuator Shown in Pos.1
ET02 Models: Omit terminal 2

V3 Vertical Mount, V-Bracket
ET21MD1V3BE DPDT



PC Mounting



Actuator Shown in Pos.1

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ET Series
Sealed Subminiature Toggle Switches

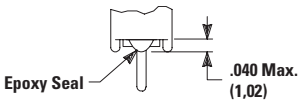
Contact Material

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	ETX1 models: 3 amps @ 120 V AC OR 28 V DC All other models: 2 amps @ 120 V AC OR 28 V DC
S		Matte-Tin[6]		
G	Gold over Silver [2,3]	Gold[3]	Low Level / Dry Level Circuit or Power	ETX1 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]		

Notes: 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 Contacts & All Terminals: Copper alloy, silver plated.
6. Terminals: Copper alloy, with matte tin alloy nickel plate.

Notes: Any models supplied with Q, B, G, P or R contact material are RoHS compliant.
All models c UL us with all options (except M3 actuator) when ordered with G, L, R, or Q contact material.

Seal



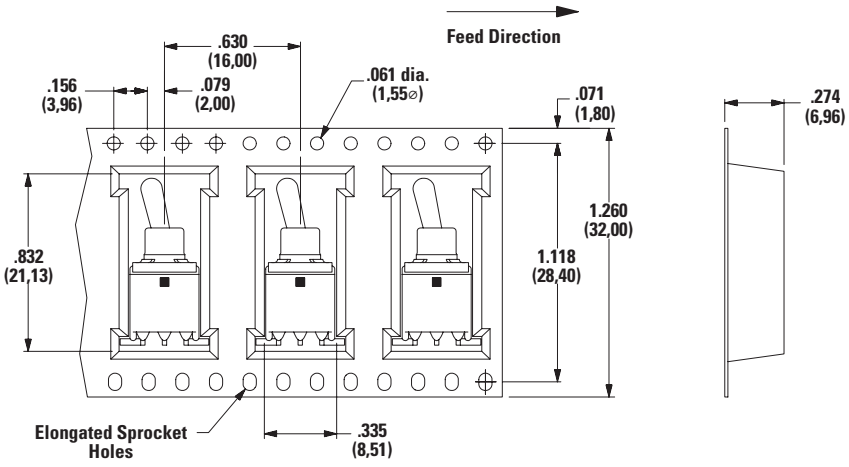
Available Hardware

Cap



Part No.
706201000 White
706202000 Black
706203000 Red
Material: Vinyl
Finish: Matte

Tape & Reel



For part number ET01M3D1SAPE

Reel Information

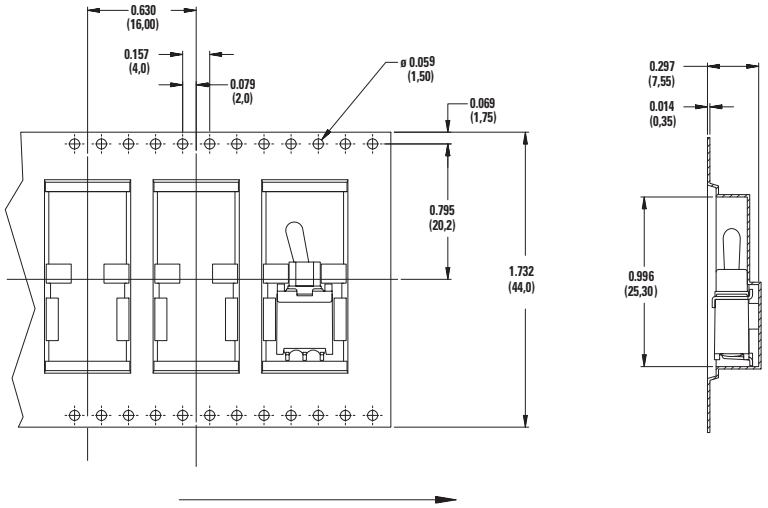
Outside Diameter	13.00 (330.0)
Pilot Hole	0.512 (13.0)
Quanitity Per Reel	600

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ET Series
Sealed Subminiature Toggle Switches

Tape & Reel



For part number ET01M3D1SA1BE

Reel Information

Outside Diameter	13.00 (330.0)
Pilot Hole	0.795 (20.20)
Quanitity Per Reel	500

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