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[ET01MD1SAKE\(T&R\)](#)

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sales@integrated-circuit.com

C&K ET Series Sealed Subminiature Toggle Switches

Features/Benefits

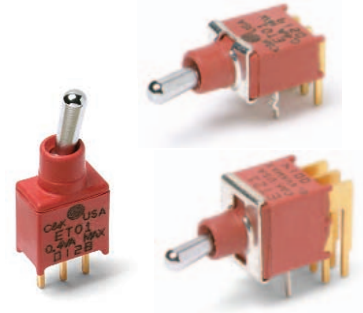
- Sealed against solder and cleaning process contaminants
- ESD protection available
- Thru-hole and surface mount models
- Compact size and small footprint save PCB space



Models Available

Typical Applications

- Hand-held telecommunications
- Instrumentation
- Medical equipment



Specifications

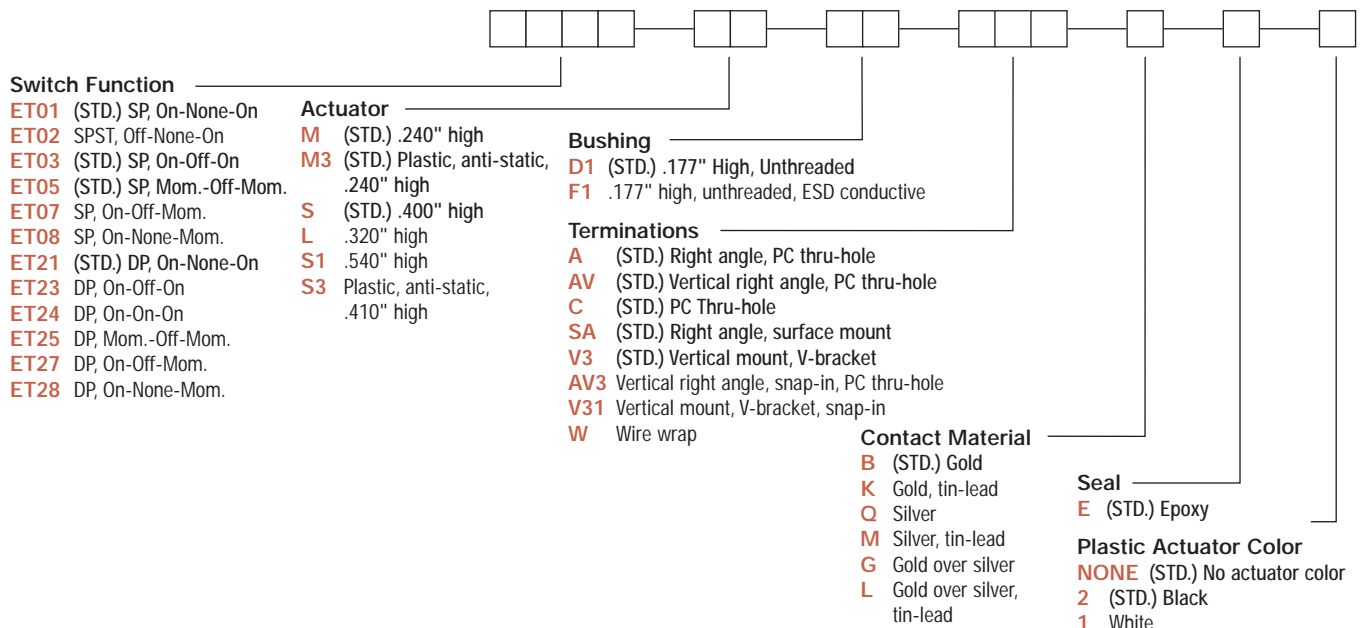
CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. See page F-32 for additional ratings.
ELECTRICAL LIFE: ETX1 models: 60,000 make-and-break cycles at full load. All other models: 30,000 cycles.
CONTACT RESISTANCE: Below 20 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.
INSULATION RESISTANCE: 10⁹ Ω min.
ELECTROSTATIC DISCHARGE (ESD) RESISTANT OPTION: M3 & S3 insulating actuator only: 9,000 V DC min. @ sea level, actuator to terminals. F1 conductive bushing only: Dissipates up to 20,000 V DC from actuator to ground. M3 & S3 actuator and F1 bushing options are not recommended for use together.
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, see page F-32 for drawings and reel information.

Materials

CASE & BUSHING: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0). SA surface mount: High temperature material, glass filled 4/6 nylon, flame retardant, heat stabilized (UL 94V-0). F1 conductive bushing option is impregnated with carbon fibers.
ACTUATOR: M3 & S3 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.
CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See F-32 for additional contact materials.
TERMINAL SEAL: Epoxy.
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-28 thru F-32. 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.



F

Toggle

C&K ET Series Sealed Subminiature Toggle Switches

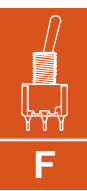
SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
SP	ET01 (STD.)	ON	NONE	ON	2-3	N/A	2-1	
	ET03 (STD.)	ON	OFF	ON	2-3	OPEN	2-1	
	ET05 (STD.)	MOM.	OFF	MOM.				
	ET07	ON	OFF	MOM.				
	ET08	ON	NONE	MOM.	2-3	N/A	2-1	
	ET02	OFF	NONE	ON	OPEN	N/A	3-1	
<p>SPDT</p> <p>Part number shown: ET01MD1CBE ET02 Models: Omit terminal 2</p>								
DP	ET21 (STD.)	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4	
	ET23	ON	OFF	ON	2-3,5-6	OPEN	2-1,5-4	
	ET25	MOM.	OFF	MOM.				
	ET27	ON	OFF	MOM.				
	ET28	ON	NONE	MOM.	2-3,5-6	N/A	2-1,5-4	
	ET24**	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4	
<p>DPDT</p> <p>Part number shown: ET21MD1CBE</p>								

MOM. = Momentary

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

All models with all options (except M3 actuator) when ordered with G, L, M or Q contact material.



Toggle



Third Angle Projection
Dimensions are shown: IN (mm)
Dimensions subject to change

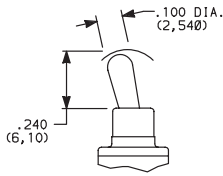
C&K ET Series Sealed Subminiature Toggle Switches

ACTUATOR

ACTUATOR COLOR

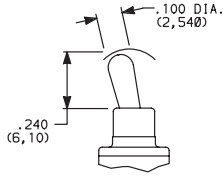


M (STD.) .240" HIGH



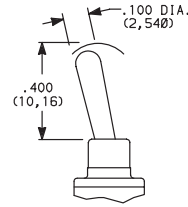
Standard with A, AV, V3 & V31 terminations.

M3 (STD.) PLASTIC, ANTISTATIC, .240" HIGH



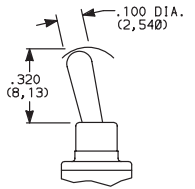
Material: Nylon 4/6 (UL 94V-0), black standard. Static resistance: 9,000 V DC min. @ sea level, actuator to terminals. Not available with F1 conductive bushing option. Not UL approved.

S (STD.) .400" HIGH

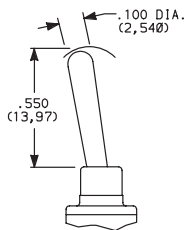


Standard with C or W terminations.

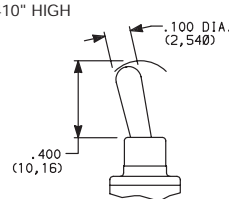
L .320" HIGH



S1 .540" HIGH



S3 PLASTIC, ANTISTATIC, .410" HIGH



Material: Nylon 4/6 (UL 94V-0), black standard. Static resistance: 9,000 V DC min. @ sea level, actuator to terminals. Not available with F1 conductive bushing option. Not UL approved.

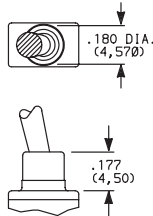
NOTE: All actuators have chrome finish (except M3 & S3).

OPTION CODE	PLASTIC ACTUATOR COLOR
(NONE)	(STD.) BLACK (M3 & S3 only)
1	WHITE (M3 & S3 only)

BUSHING

D1 (STD.) .177" HIGH, UNTHREADED

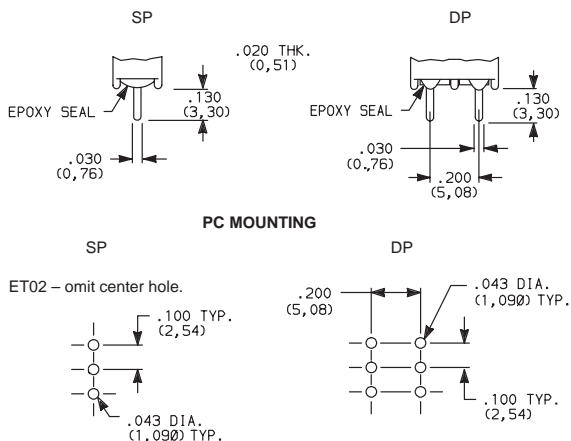
F1 ESD, CONDUCTIVE BUSHING UNTHREADED, .177" HIGH



NOTE: 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 all metal actuator options and A, AV, AV3, V3 and V31 termination options only. Internal actuator o-ring seal standard.

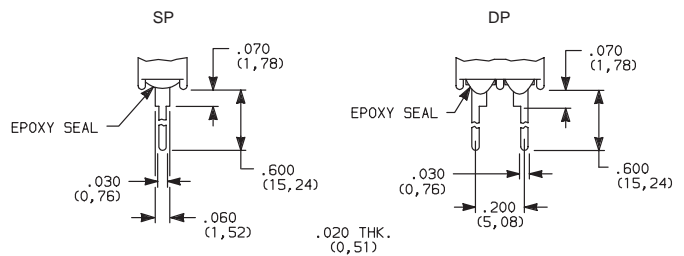
TERMINATIONS

C (STD.) PC THRU-HOLE



SP and DP

W WIRE WRAP



SP and DP

Not available with F1 conductive bushing.



Third Angle Projection
Dimensions are shown: IN (mm)
Dimensions subject to change

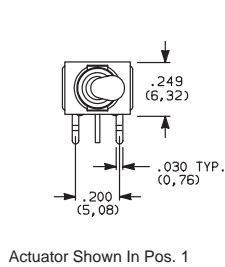
C&K ET Series Sealed Subminiature Toggle Switches

TERMINATIONS

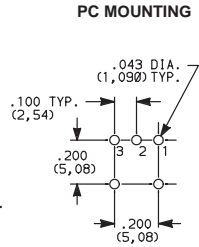
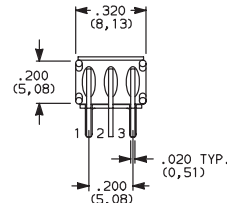
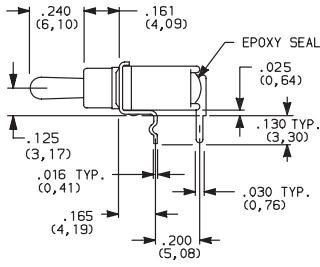
A (STD.) RIGHT ANGLE, PC THRU-HOLE



ET01MD1ABE
Horizontal Actuation
SPDT

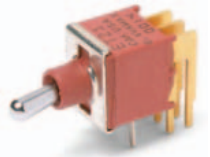


Actuator Shown In Pos. 1

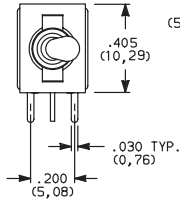


Not available with ET02 model.

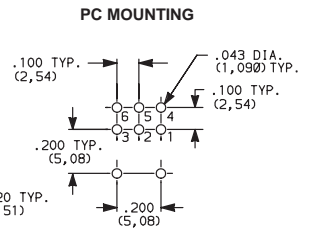
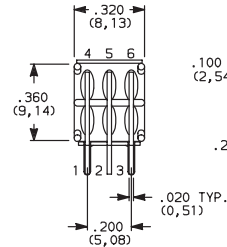
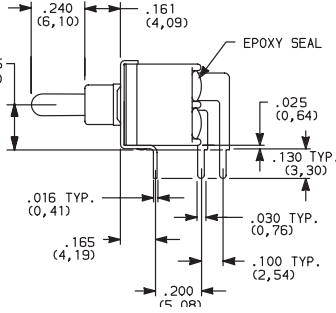
A (STD.) RIGHT ANGLE, PC THRU-HOLE



ET21MD1ABE
Horizontal Actuation
DPDT



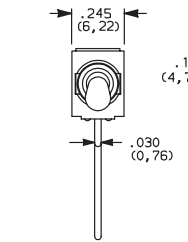
Actuator Shown In Pos. 1



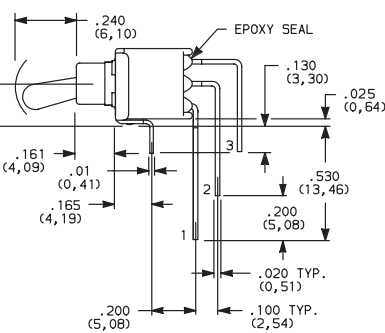
AV (STD.) VERTICAL RIGHT ANGLE, PC THRU-HOLE



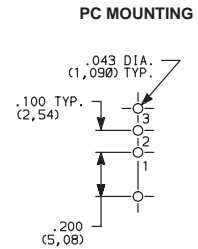
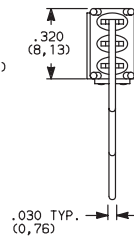
ET01MD1AVBE
Vertical Actuation
SPDT



Actuator Shown In Pos. 1



ET02 - omit terminal 2.

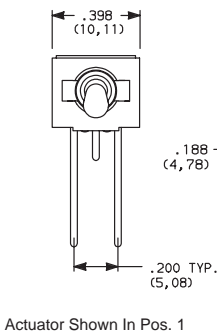


NOTE: Terminal bend radii and lead-in manufacturing option.

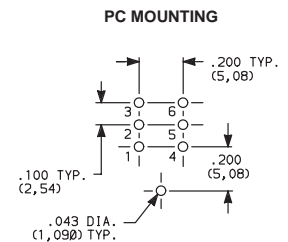
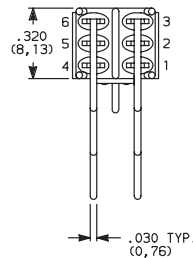
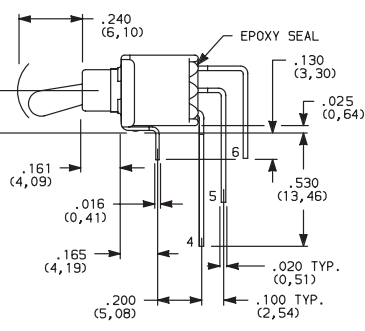
AV (STD.) VERTICAL RIGHT ANGLE, PC THRU-HOLE



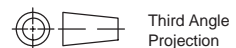
ET21MD1AVBE
Vertical Actuation
DPDT



Actuator Shown In Pos. 1



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



Third Angle
Projection

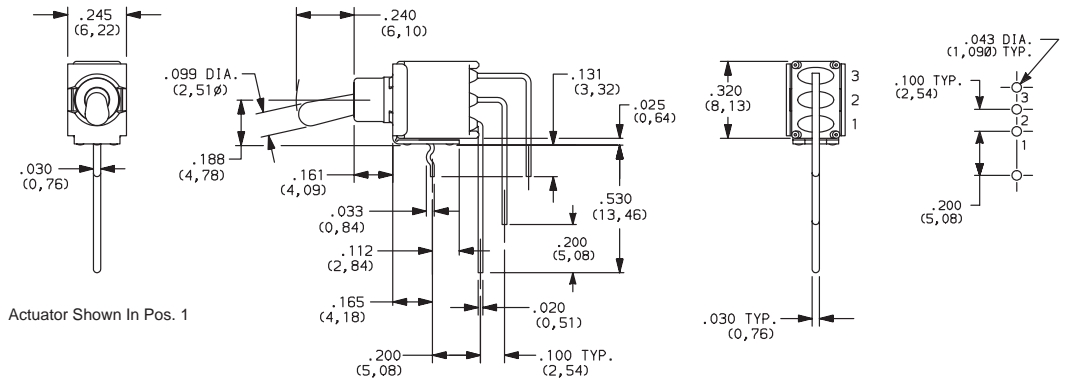
Dimensions are shown: IN (mm)
Dimensions subject to change

Toggle

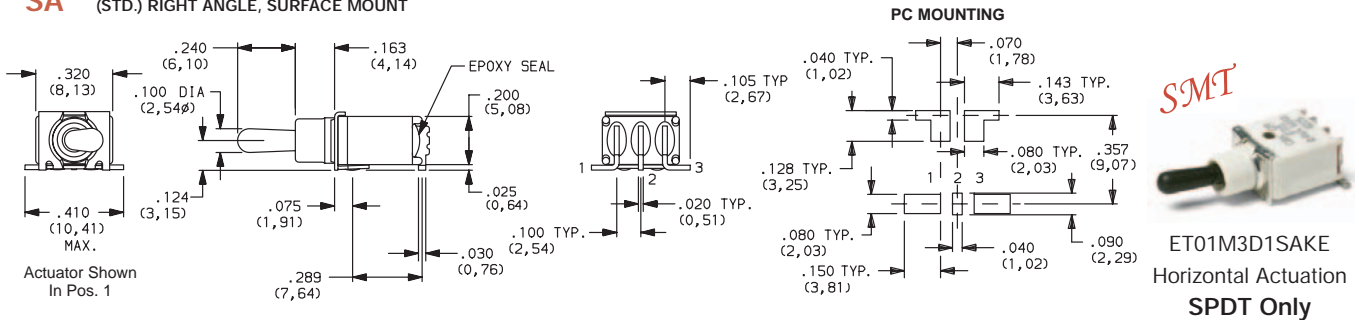
C&K ET Series Sealed Subminiature Toggle Switches

TERMINATIONS

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



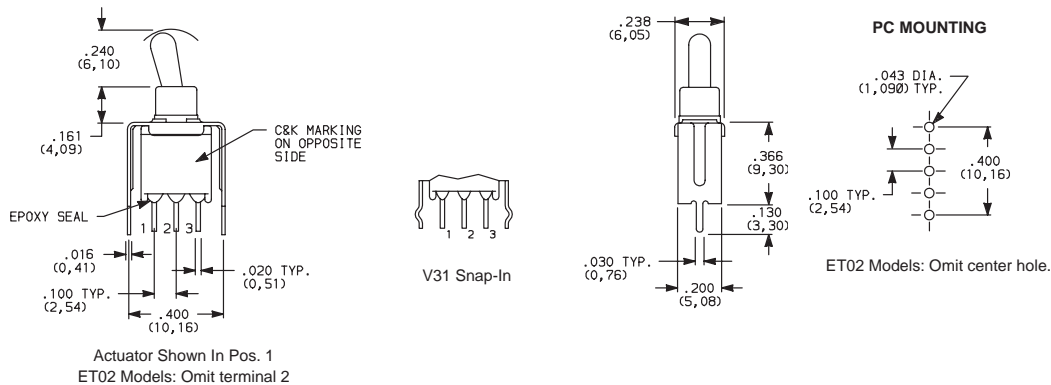
SA (STD.) RIGHT ANGLE, SURFACE MOUNT



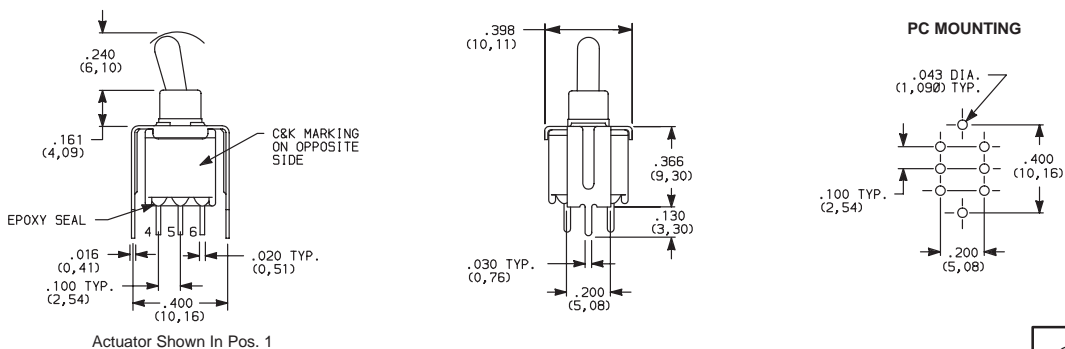
Not available with S and S1 actuators.
Standard with tape & reel packaging, See page NO TAG.

V3 (STD.) VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



V3 (STD.) VERTICAL MOUNT, V-BRACKET



Dimensions are shown: IN (mm)
Dimensions subject to change



F

Toggle

C&K ET Series Sealed Subminiature Toggle Switches

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B (STD.)	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
K		TIN-LEAD 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.
M		TIN-LEAD ⁶		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY 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.
L		TIN-LEAD ⁶		

CONTACT MATERIAL/APPLICATION RECOMMENDATIONS-SEE SECTION N.

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.

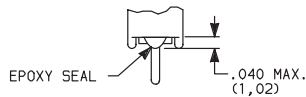
⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.

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

All models with all options (except M3 actuator) when ordered with G, L, M or Q contact material.

SEAL

E (STD.) EPOXY SEAL



AVAILABLE HARDWARE

Cap

PART NO.

- 706201000 WHITE
- 706202000 BLACK
- 706203000 RED

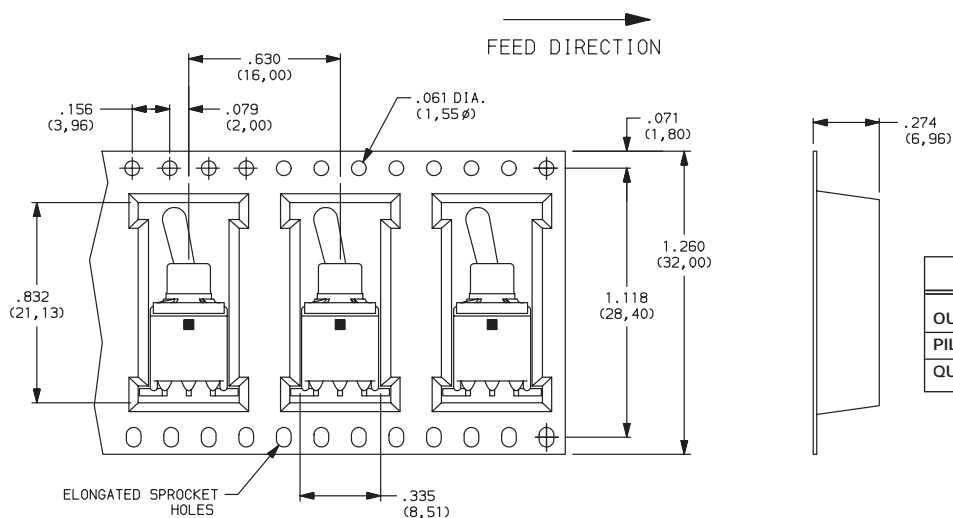
Material: Vinyl
Finish: Matte



NOTE: Other colors available, consult Customer Service Center.

TAPE & REEL

For part number ET01M3D1SAKE



REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	600

Toggle
F