

C&K EP Series Sealed Tiny Pushbutton Switches



A

Pushbutton

Features/Benefits

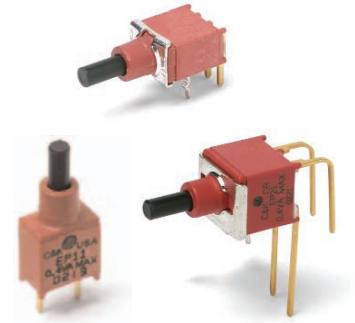
- Sealed against solder & cleaning processes
- Thru-hole and surface mount models
- Snap-fitting actuator accepts standard caps
- Tape & reel packaging available



Models Available

Typical Applications

- Telecommunications and networking equipment
- Computers and peripherals
- Instrumentation and controls



Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. See page A-7 for additional ratings.

ELECTRICAL LIFE: EP11, EP21 models: 60,000 make-and-break cycles at full load. EP12 models: 30,000 cycles.

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

INSULATION RESISTANCE: 10⁹ 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 standard in anti-static tape and reel packaging per EIA 481-3, see page A-8 for drawings and reel information. Tape and cover strip are conductive for use near statically sensitive components, consult Customer Service Center.

Materials

CASE & BUSHING: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0). SA surface mount: High temperature material, glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0).

PLUNGER: Thermoplastic polyester or glass filled nylon (UL 94V-0), with internal o-ring seal. SA surface mount: High temperature material, glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0).

SWITCH SUPPORT: Brass, tin plated.

CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. See page A-7 for additional contact materials.

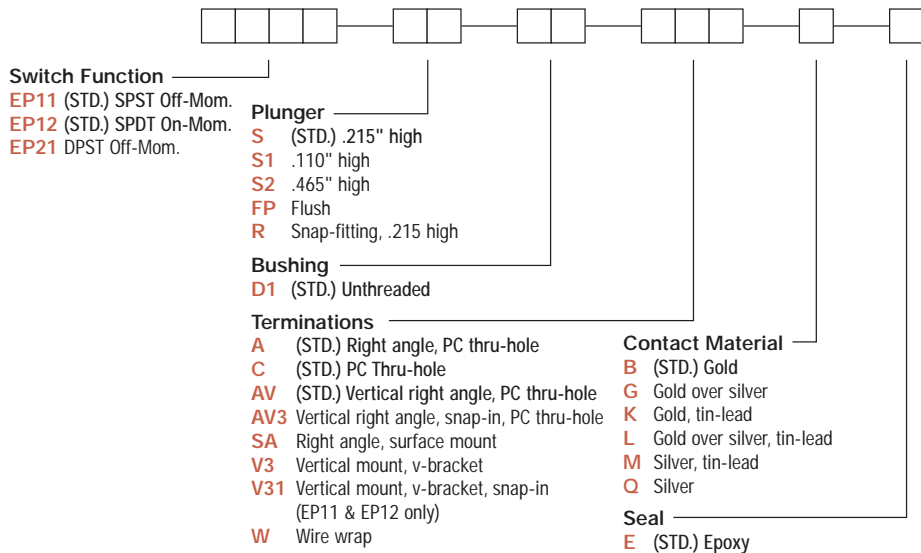
TERMINAL SEAL: Epoxy.

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

CAUTION: PC mounting layouts and pads as shown are designed to be compatible with the latest equipment and reflow techniques. Care should be taken in the design and location of PC lands to suit individual needs. Orientation relative to reflow direction may significantly impact solder joint integrity.

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 A-4 thru A-7. For additional options not shown in catalog, consult Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.



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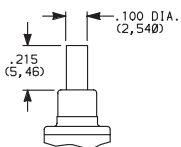
SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
		C&K marking on opposite side		C&K marking on opposite side		
SP	EP11 (STD.)	OFF	MOM.	OPEN	1-3	SPST
	EP12 (STD.)	ON	MOM.	2-1	2-3	SPDT
SPDT Dimensions: .215 (5,46) actuator height, .100 DIA. (2,540) actuator diameter, .177 (4,50) actuator width, .527 (13,39) body length, .130 TYP. (3,30) terminal spacing, .200 (5,08) terminal diameter, .320 (8,13) terminal height, .030 TYP. (0,76) terminal width. Epoxy seal and C&K marking on opposite side. Terminal Nos. For Reference Only. Part number shown: EP12SD1CBE.						
DP	EP21	OFF	MOM.	OPEN	1-3,4-6	DPST
DPST Dimensions: .215 (5,46) actuator height, .100 DIA. (2,540) actuator diameter, .177 (4,50) actuator width, .527 (13,39) body length, .130 TYP. (3,30) terminal spacing, .200 (5,08) terminal diameter, .360 (9,14) terminal height, .030 TYP. (0,76) terminal width. Epoxy seal and C&K marking on opposite side. Terminal Nos. For Reference Only. Part number shown: EP21SD1CBE.						

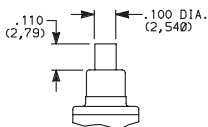
MOM. = Momentary
 All models with all options when ordered with G, L, M or Q contact material.

ACTUATOR

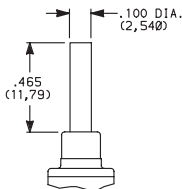
S (STD.) .215" HIGH



S1 .110" HIGH

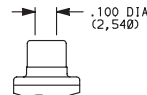


S2 .465" HIGH



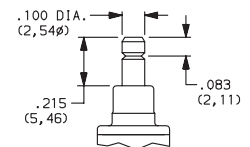
S1 & S2 actuators are not available with EP12 & EP21 models.

FP FLUSH PLUNGER



FP & R actuators are not available with EP21 model.

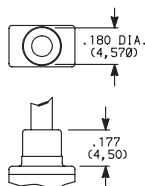
R SNAP-FITTING



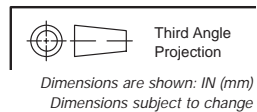
NOTE: Caps available for plunger options, see page A-8.

BUSHING

D1 (STD.) UNTHREADED



NOTE: Internal actuator o-ring standard.



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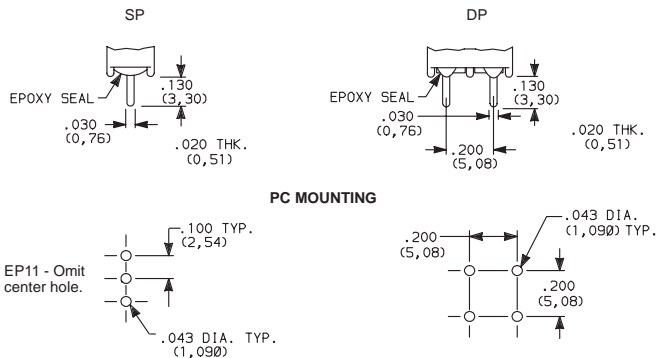
TERMINATIONS



A

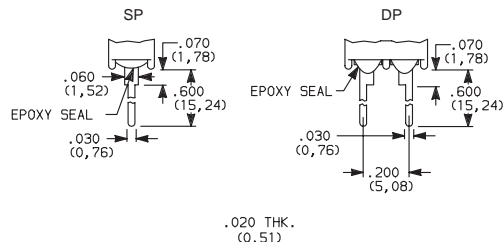
Pushbutton

C (STD.) PC THRU-HOLE



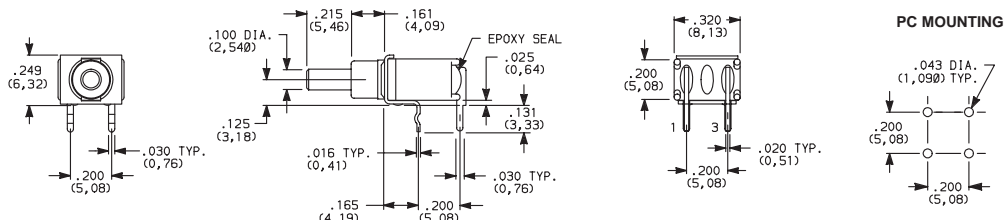
SP and DP

W WIRE WRAP



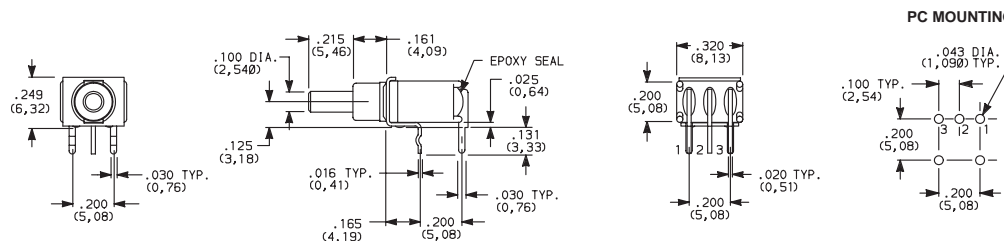
SP and DP

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



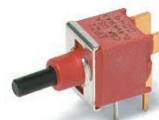
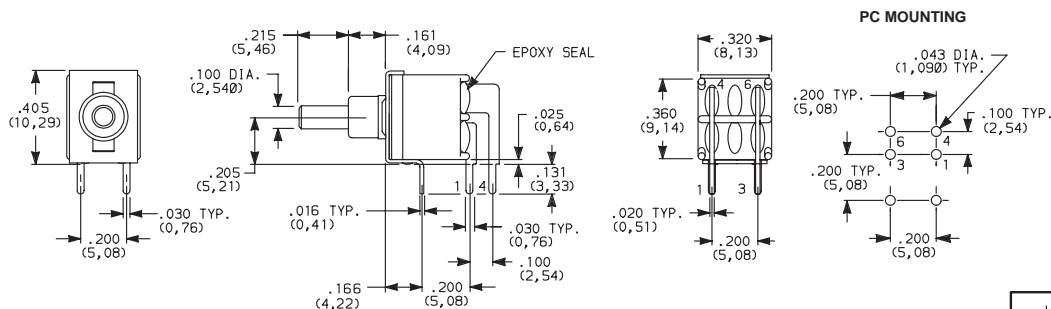
EP11SD1ABE
SPST

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



EP12SD1ABE
SPDT

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



EP21SD1ABE
DPST

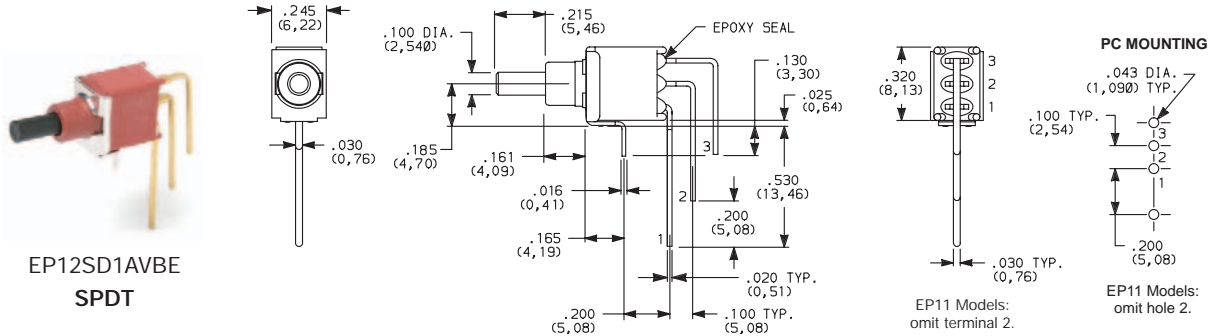


Third Angle
Projection
Dimensions are shown: IN (mm)
Dimensions subject to change

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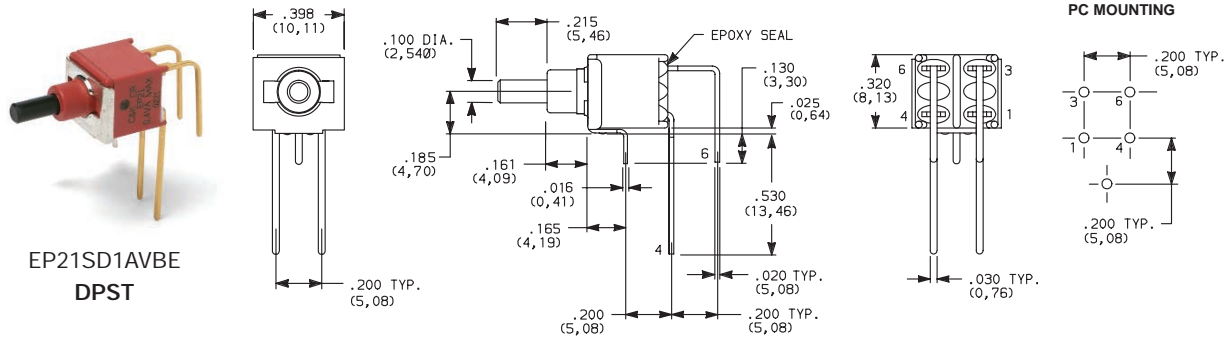
TERMINATIONS

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



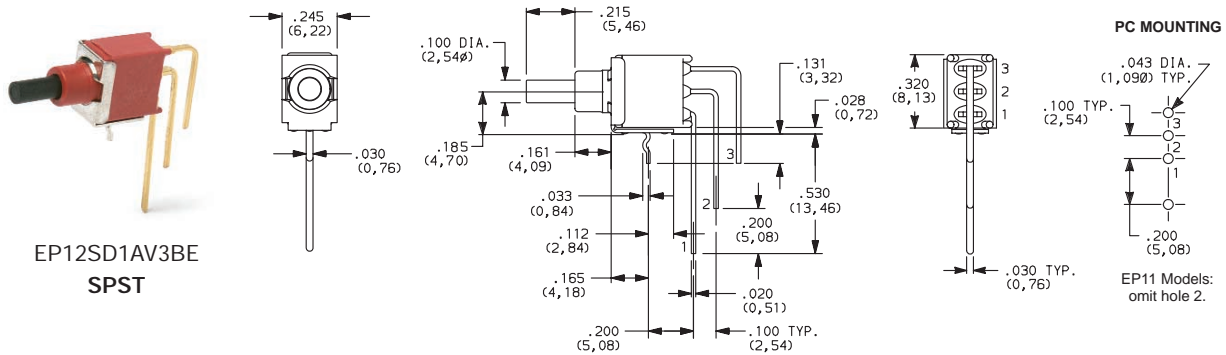
NOTE: Terminal bend radii and lead-in manufacturing option.

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

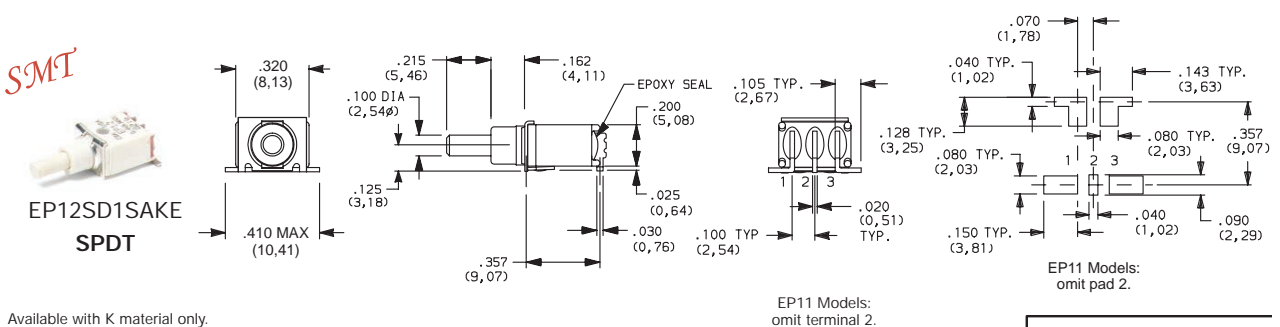


NOTE: Terminal bend radii and lead-in manufacturing option.

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



SA RIGHT ANGLE, SURFACE MOUNT



Available with K material only.
Not Available on DPST models



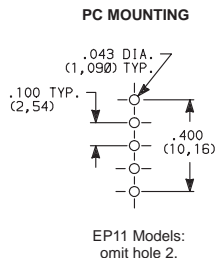
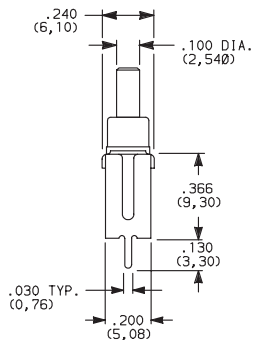
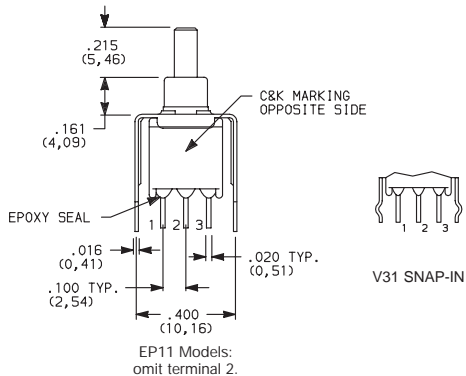
Dimensions are shown: IN (mm)
Dimensions subject to change

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TERMINATIONS

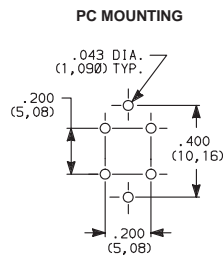
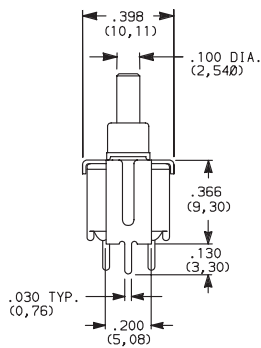
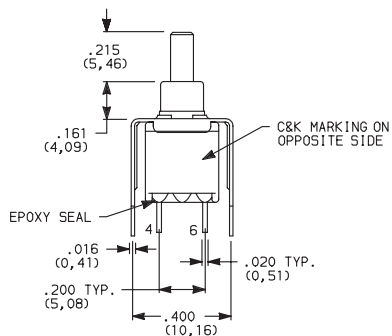
V3 VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



EP12SD1V3BE
SPDT

V3 VERTICAL MOUNT, V-BRACKET



EP21SD1V3BE
DPST

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	1 AMP @ 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	0.4 VA MAX @ 20 V AC OR DC MAX. OR 1 AMP @ 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.

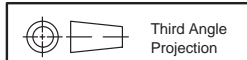
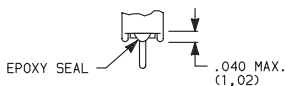
⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.

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

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

SEAL

E (STD.) EPOXY SEAL



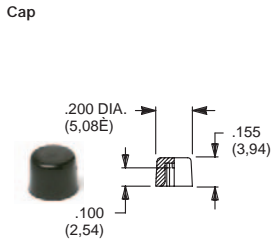
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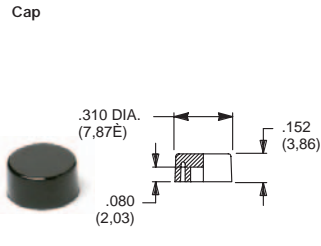


Pushbutton
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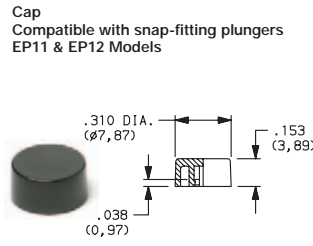
AVAILABLE HARDWARE



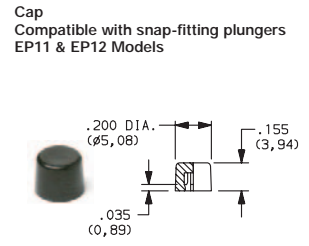
PART NO.
508101000 WHITE
508102000 BLACK
508103000 RED
 Material: Nylon
 Finish: Gloss
 Not for use on S1 plunger



PART NO.
465801000 WHITE
465802000 BLACK
465803000 RED
 Material: Nylon
 Finish: Gloss
 Not for use on S1 plunger



PART NO.
585A01000 WHITE
585A02000 BLACK
585A03000 RED
 Material: Nylon
 Finish: Gloss

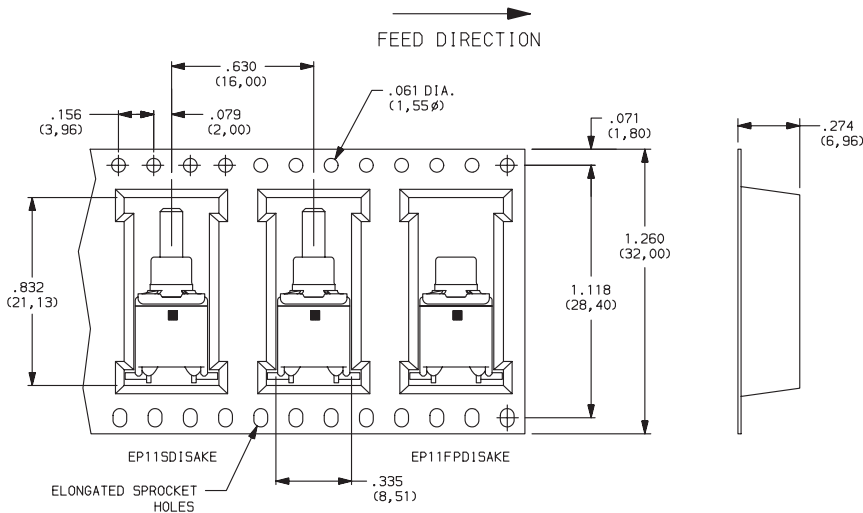


PART NO.
785A01000 WHITE
785A02000 BLACK
785A03000 RED
 Material: Nylon
 Finish: Gloss

NOTE: Other colors available, consult Customer Service Center.

TAPE & REEL

For part number EPXX-SA



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