

C&K EP Series Sealed Tiny Pushbutton Switches

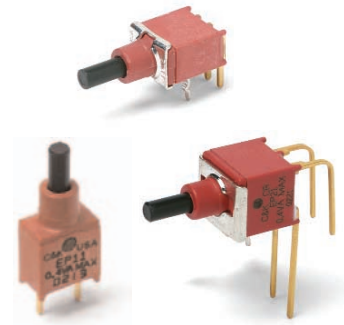
Features/Benefits

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



Typical Applications

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



A

Pushbutton

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.

Switch Function EP11 (STD.) SPST Off-Mom. EP12 (STD.) SPDT On-Mom. EP21 DPST Off-Mom.	Plunger S (STD.) .215" high S1 .110" high S2 .465" high FP Flush R Snap-fitting, .215 high	Bushing D1 (STD.) Unthreaded	Terminations A (STD.) Right angle, PC thru-hole C (STD.) PC Thru-hole AV (STD.) Vertical right angle, PC thru-hole AV3 Vertical right angle, snap-in, PC thru-hole SA Right angle, surface mount V3 Vertical mount, v-bracket V31 Vertical mount, v-bracket, snap-in (EP11 & EP12 only) W Wire wrap	Contact Material B (STD.) Gold G Gold over silver K Gold, tin-lead L Gold over silver, tin-lead M Silver, tin-lead Q Silver	Seal E (STD.) Epoxy
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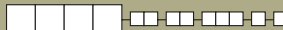
C&K EP Series Sealed Tiny Pushbutton Switches



A

Pushbutton

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 Part number shown: EP12SD1CBE						
DP	EP21	OFF	MOM.	OPEN	1-3,4-6	DPST
DPST Part number shown: EP21SD1CBE						

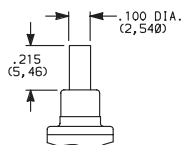
MOM. = Momentary

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

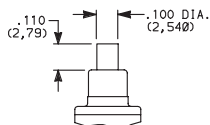
ACTUATOR



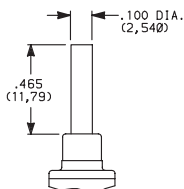
S (STD.) .215" HIGH



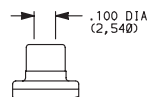
S1 .110" HIGH



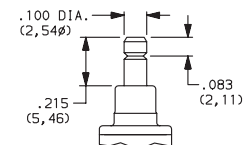
S2 .465" HIGH



FP FLUSH PLUNGER



R SNAP-FITTING



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

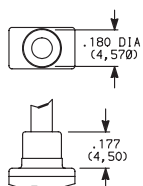
FP & R actuators are not available with EP21 model.

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

BUSHING



D1 (STD.) UNTHREADED



NOTE: Internal actuator o-ring standard.



Cannon



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

www.ittcannon.com

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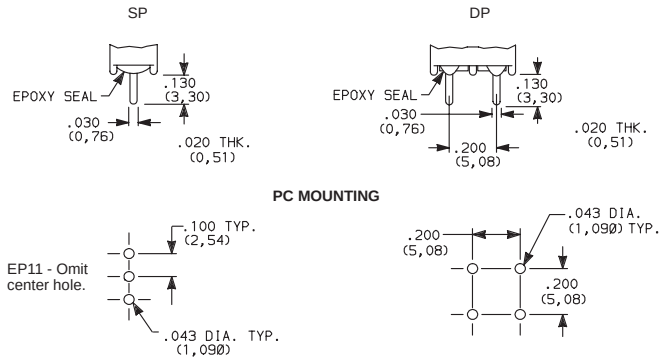
TERMINATIONS



A

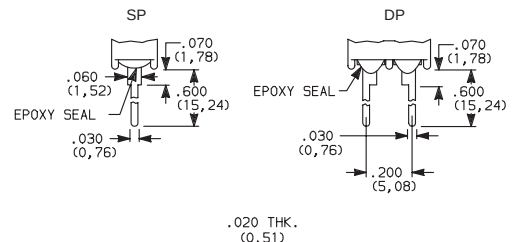
Pushbutton

C (STD.) PC THRU-HOLE



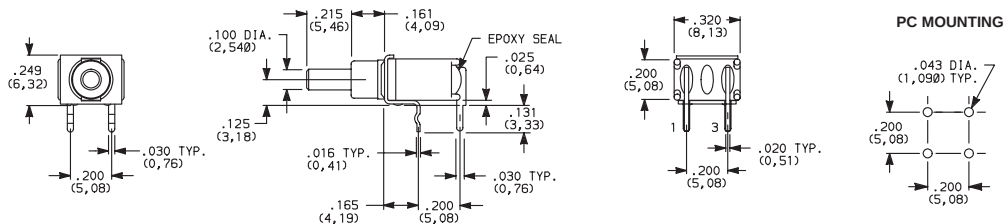
SP and DP

W WIRE WRAP



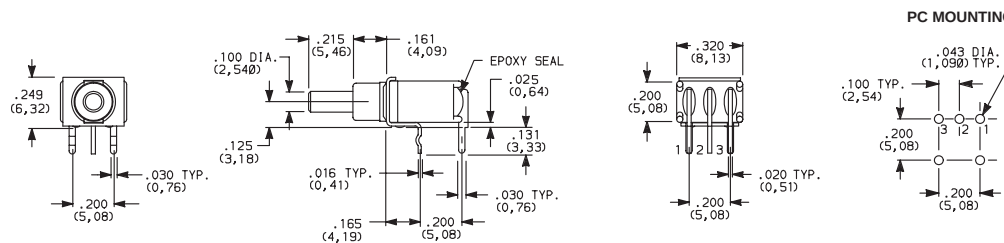
SP and DP

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



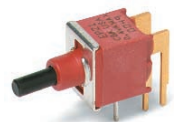
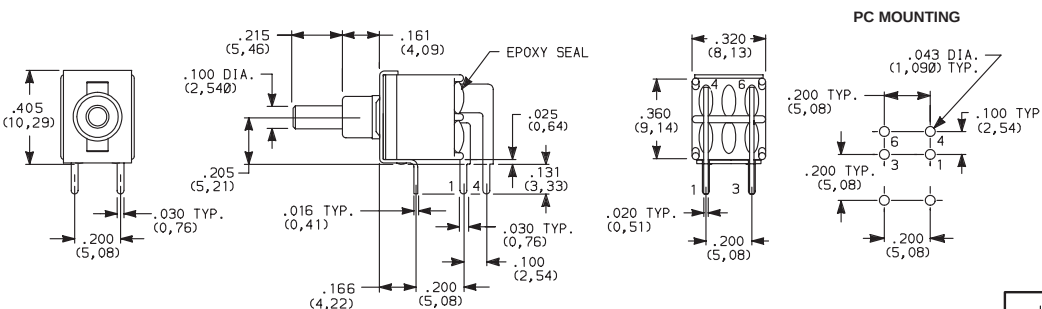
EP11SD1ABE
SPST

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



EP12SD1ABE
SPDT

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



EP21SD1ABE
DPST



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

C&K EP Series Sealed Tiny Pushbutton Switches



A

Pushbutton

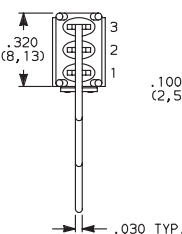
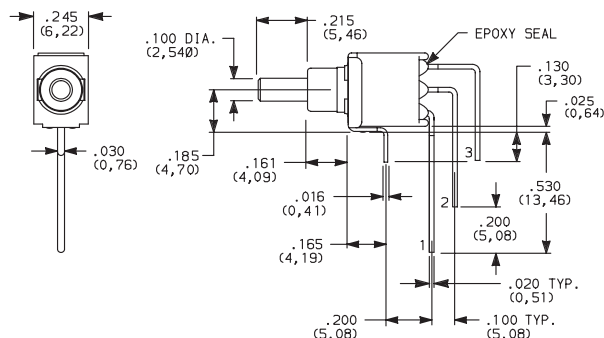
TERMINATIONS



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

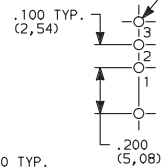


EP12SD1AVBE
SPDT



EP11 Models:
omit terminal 2.

PC MOUNTING



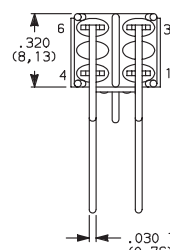
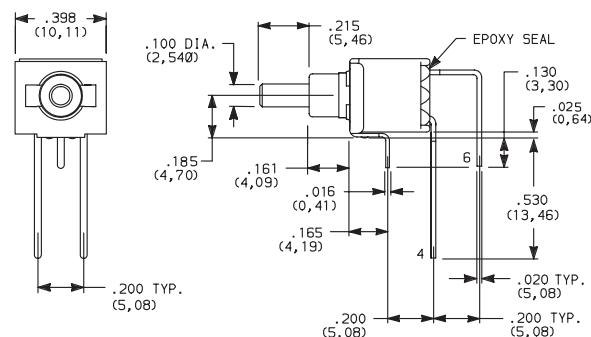
EP11 Models:
omit hole 2.

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

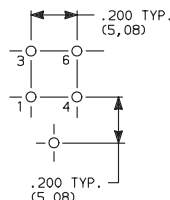
AV (STD.) VERTICAL RIGHT ANGLE, THRU-HOLE



EP21SD1AVBE
DPST

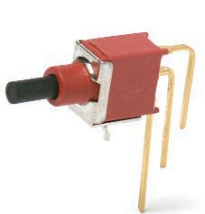


PC MOUNTING

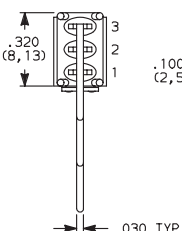
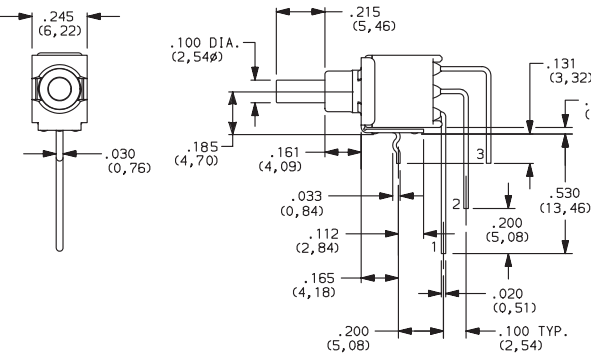


NOTE: Terminal bend radii and lead-in manufacturing option.

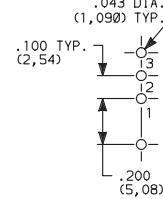
AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



EP12SD1AV3BE
SPST



PC MOUNTING



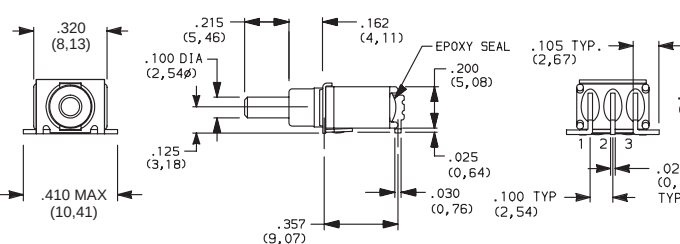
EP11 Models:
omit hole 2.

SA RIGHT ANGLE, SURFACE MOUNT

SMT

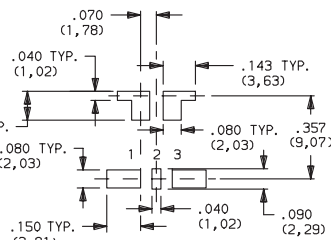


EP12SD1SAKE
SPDT



EP11 Models:
omit terminal 2.

PC MOUNTING



EP11 Models:
omit pad 2.

Available with K material only.
Not Available on DPST models

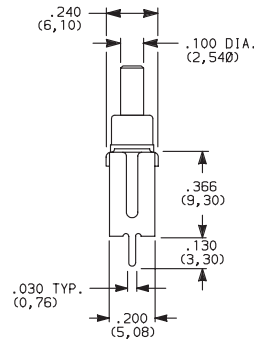
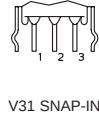
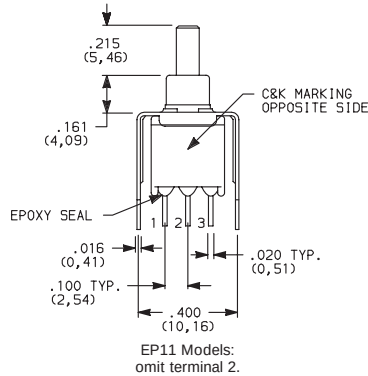
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TERMINATIONS

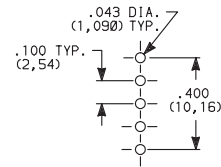


V3 VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING

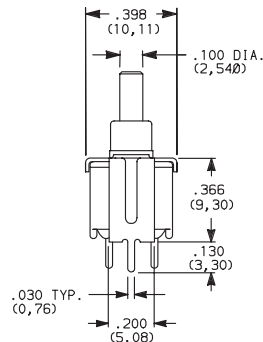
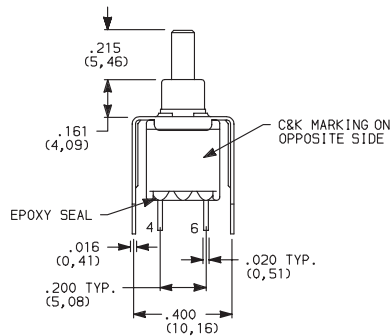


EP11 Models:
omit hole 2.

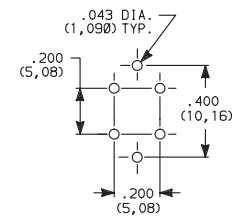


EP12SD1V3BE
SPDT

V3 VERTICAL MOUNT, V-BRACKET



PC MOUNTING



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.

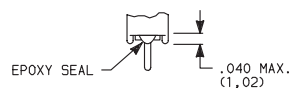
⁶ TERMINALS: Copper alloy, with tin-lead alloy over nickel plate.

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

SEAL



E (STD.) EPOXY SEAL



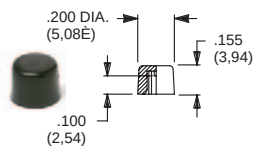
Third Angle
Projection

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

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AVAILABLE HARDWARE

Cap

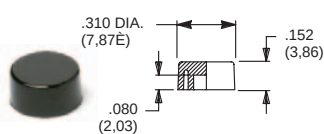


PART NO.

508101000 WHITE
508102000 BLACK
508103000 RED

Material: Nylon
 Finish: Gloss
 Not for use on S1 plunger

Cap

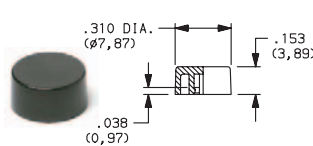


PART NO.

465801000 WHITE
465802000 BLACK
465803000 RED

Material: Nylon
 Finish: Gloss
 Not for use on S1 plunger

Cap
 Compatible with snap-fitting plungers
 EP11 & EP12 Models

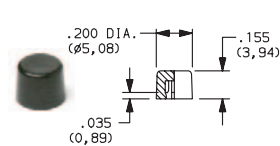


PART NO.

585A01000 WHITE
585A02000 BLACK
585A03000 RED

Material: Nylon
 Finish: Gloss

Cap
 Compatible with snap-fitting plungers
 EP11 & EP12 Models



PART NO.

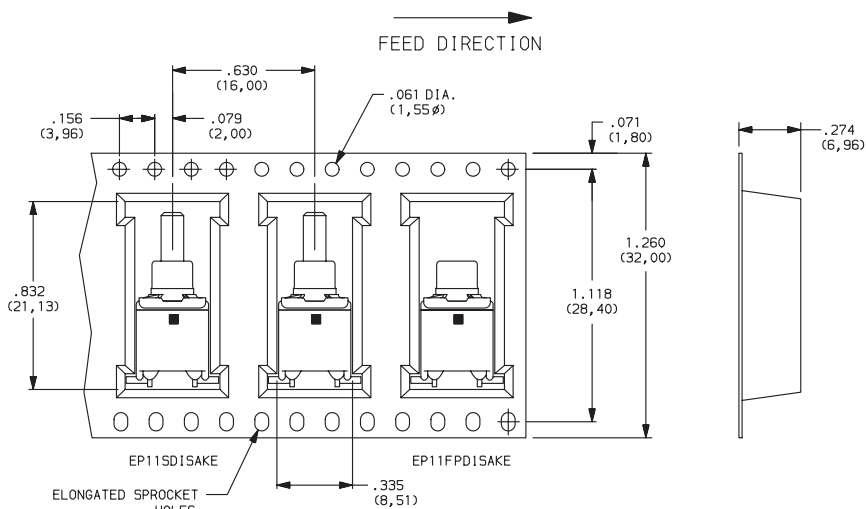
785A01000 WHITE
785A02000 BLACK
785A03000 RED

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