

# GP Series Sealed Ultraminiature Pushbutton Switches



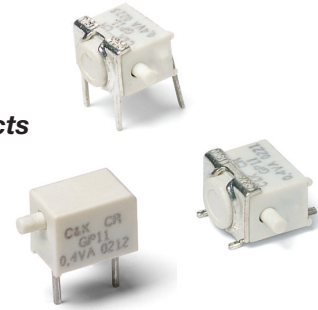
A  
Pushbutton

## Features/Benefits

- Ultraminiature design saves space
- Process compatible, withstands most soldering and washing processes
- Thru-hole and surface mount models available
- Sealed construction—internal o-ring and epoxy base
- RoHS compliant

## Typical Applications

- Telecommunications and network equipment
- Computers and peripheral products
- Instrumentation
- Medical Applications



## Specifications

CONTACT RATING: 0.4 VA max. @ 20 V AC or DC max.

MECHANICAL & ELECTRICAL LIFE: 40,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 50 mΩ typ. initial @ 2-4 V DC, 100 mA.

INSULATION RESISTANCE: 10<sup>9</sup>Ω min.

DIELECTRIC STRENGTH: 500 Vrms min. @ sea level.

OPERATING TEMPERATURE: -40°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-80 for drawings and reel information. Thru-Hole parts are shipped in trays.

All models are RoHS compliant and compliant.

## Materials

HOUSING & BASE: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0).

ACTUATOR: Glass filled nylon 4/6, flame retardant (UL 94V-0) with standard internal o-ring seal.

SWITCH SUPPORT: Brass, tin plated.

MOVABLE CONTACT: Copper alloy, with gold plate over nickel plate.

STATIONARY CONTACTS Copper alloy, with gold plate over nickel plate.

TERMINALS: Copper alloy, with gold flash over nickel plate.

TERMINAL SEAL: Epoxy/Urethane. All terminals insert molded.

**NOTE:** Any models supplied with B contact material are RoHS compliant and compatible.

**NOTE:** Materials listed above are general specifications. Specifications available for 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.

## How To Order

Part number list is shown below. For individual part details, please refer to the following pages.

Part Number (Part Description)	Product Details
GP11MCBE	SPST Mom. PC Thru-hole, without support bracket
GP12MCBE	SPDT Mom. PC Thru-hole, without support bracket
GP11MABE	SPST Mom. PC Thru-hole, with vertical support bracket
GP12MABE	SPDT Mom. PC Thru-hole, with vertical support bracket
GP11MSABE	SPST Mom. SMT, with vertical support bracket
GP12MSABE	SPDT Mom. SMT, with vertical support bracket
GP11MSA1BE	SPST Mom. SMT, Half-Pitch, with vertical support bracket
GP12MSA1BE	SPDT Mom. SMT, Half-Pitch, with vertical support bracket
GP12MSCBE	SPDT Mom. SMT, without support bracket
GP11MSV1BE	SPST Mom. SMT, with horizontal support bracket
GP12MSV1BE	SPDT Mom. SMT, with horizontal support bracket

MOM. = Momentary



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



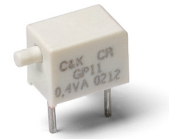
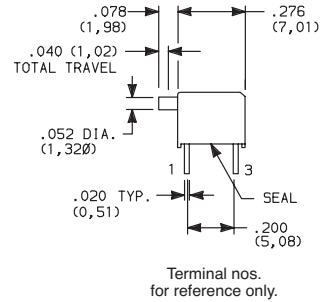
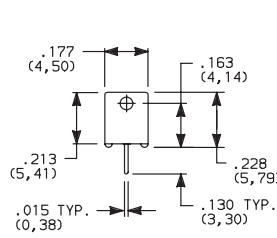
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Pushbutton

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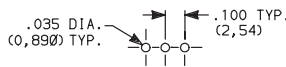
PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS. 1	POS. 2	
<b>GP11MCBE</b>	OFF	MOM.	
Conn. Terms.	OPEN	1-3	SPST
<b>GP12MCBE</b>	ON	MOM.	
Conn. Terms	2-1	2-3	SPDT

MOM. = Momentary

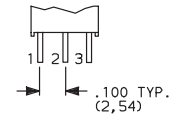


GP11MCBE  
SPST

PC MOUNTING

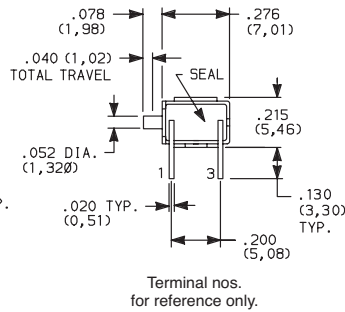
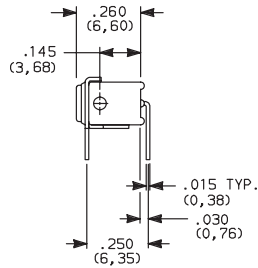


GP11- omit center hole.

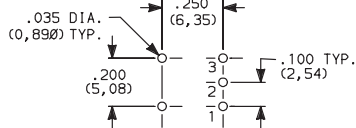


GP12 Model

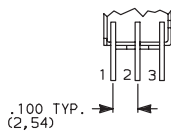
GP11MABE  
SPST



PC MOUNTING



GP11- omit hole 2.



GP12 Model

PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS. 1	POS. 2	
<b>GP11MABE</b>	OFF	MOM.	
Conn. Terms.	OPEN	1-3	SPST
<b>GP12MABE</b>	ON	MOM.	
Conn. Terms.	2-1	2-3	SPDT

MOM. = Momentary



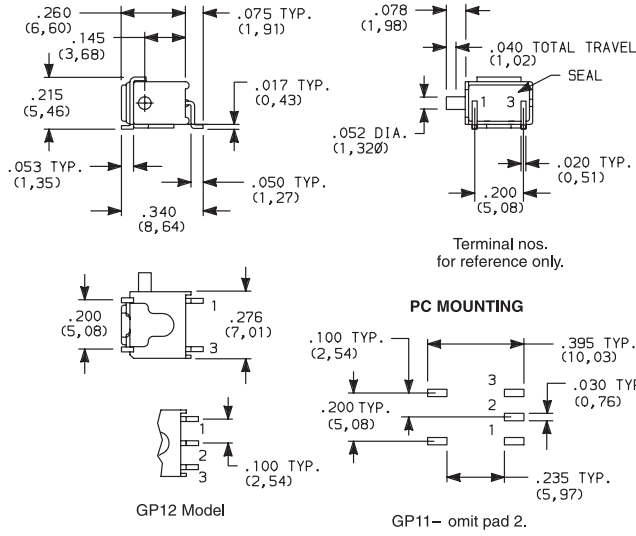
# GP Series Sealed Ultraminiature Pushbutton Switches

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Pushbutton



**GP11MSABE**  
SPST

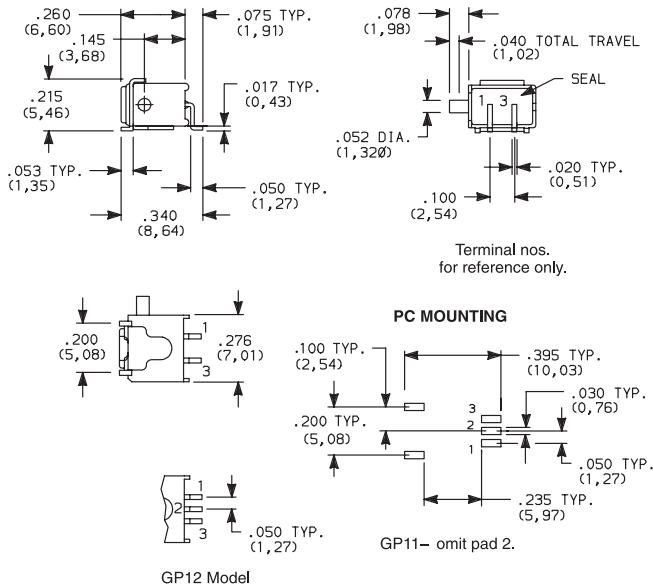


PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS.1	POS. 2	
<b>GP11MSABE</b>	OFF	MOM.	 SPST
Conn. Terms	OPEN	1-3	
<b>GP12MSABE</b>	ON	MOM.	 SPDT
Conn. Terms	2-1	2-3	

MOM. = Momentary

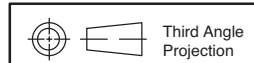


**GP11MSA1BE**  
SPST



PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS.1	POS. 2	
<b>GP11MSA1BE</b>	OFF	MOM.	 SPST
Conn. Terms.	OPEN	1-3	
<b>GP12MSA1BE</b>	ON	MOM.	 SPDT
Conn. Terms	2-1	2-3	

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# GP Series Sealed Ultraminiature Pushbutton Switches

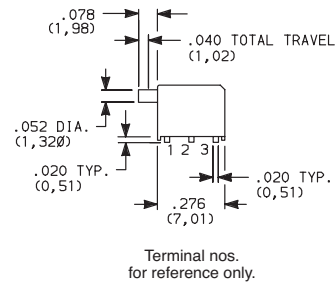
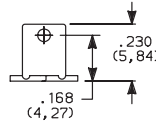


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Pushbutton

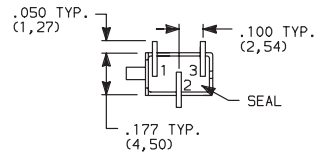
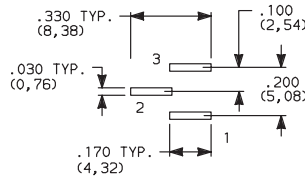
PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS. 1	POS. 2	
<b>GP12MSCBE</b>	ON	MOM.	 NC 1    2 (COMM)    3 NO SPDT
Conn. Terms	2-1	2-3	

MOM. = Momentary

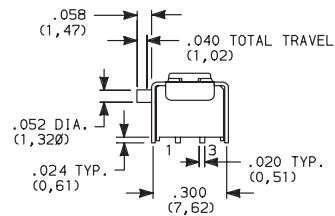
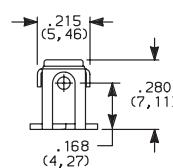


**GP12MSCBE**  
SPDT

**PC MOUNTING**



**NOTE:** Recommended for infrequent use applications only  
For increased switch mounting strength, order, SV1 termination style with support bracket (see below).

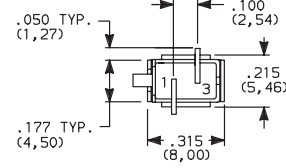
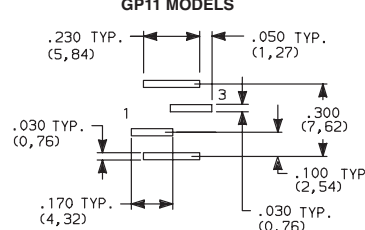


**GP11MSV1BE**  
SPST

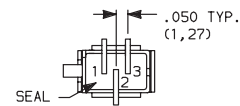
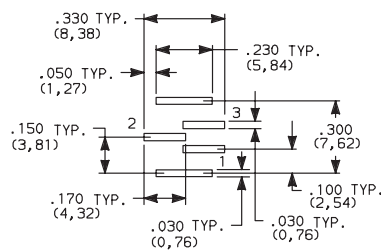
PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS. 1	POS. 2	
<b>GP11MSV1BE</b>	OFF	MOM.	 SPST
Conn. Terms.	OPEN	1-3	
<b>GP12MSV1BE</b>	ON	MOM.	 NC 1    2 (COMM)    3 NO SPDT
Conn. Terms.	2-1	2-3	

MOM. = Momentary

**PC MOUNTING GP11 MODELS**

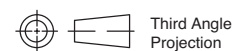


**PC MOUNTING GP12 Models**



GP12 Model

Terminal nos. for reference only.



Dimensions are shown: Inches (mm)  
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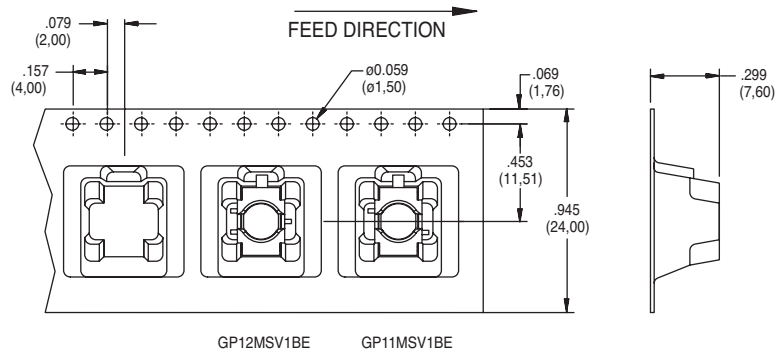
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## TAPE & REEL

Pushbutton

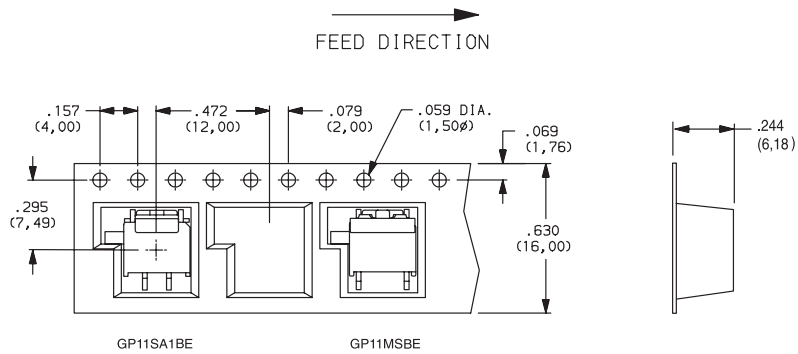
For part numbers GP11MSV1BE, GP12MSV1BE

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



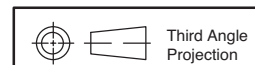
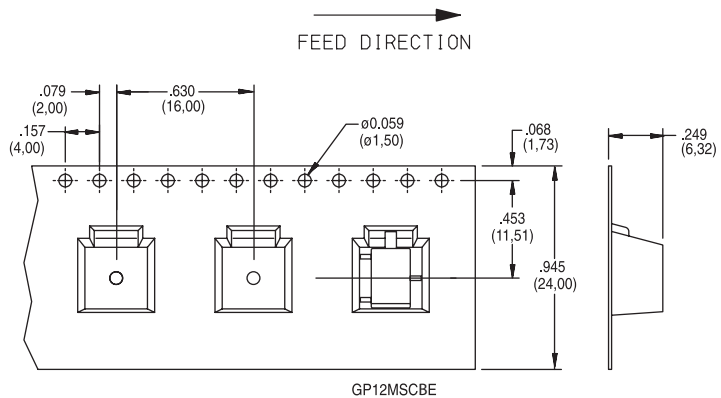
For part numbers GPXXSA1BE, GPXXMSABE

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



For part numbers GP12MSCBE

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



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