

Features

- Compact design
- High reliability
- Surface mount
- Pin hole mount
- RoHS compliant*

Applications

- Mouse wheels
- Smart home appliances
- Smart wearable devices

PEC05 Series – 5 mm Incremental Micro Encoder

Electrical Characteristics

Output.....	2-bit quadrature code
Contact Rating.....	10 mA @ 5 VDC
Insulation Resistance.....	50 MΩ min. @ 110 VDC
Dielectric Strength	
Sea Level.....	50 VAC 1 min.
Electrical Travel.....	Continuous
Sliding Bounce.....	1 ms max.
Resolution.....	12 pulses in 360 ° rotation

Environmental Characteristics

Operating Temperature Range.....	-20 °C to +70 °C
Storage Temperature Range.....	-35 °C to +85 °C
Soldering Condition	
Wave Soldering.....	260 °C for 3 s
Manual Soldering.....	300 °C for 3 s
IP Rating.....	IP 40

Mechanical Characteristics

Mechanical Angle.....	360 ° continuous
Detent Torque.....	10 to 50 gf.cm
Rotational Life.....	50,000 cycles
Speed Without Electrical Load.....	600 to 1000/h

Product Characteristics

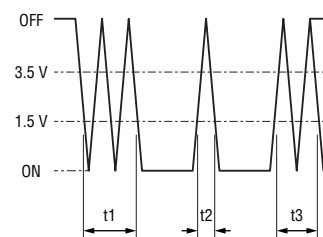
Weight.....	0.10 grams
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Additional Information

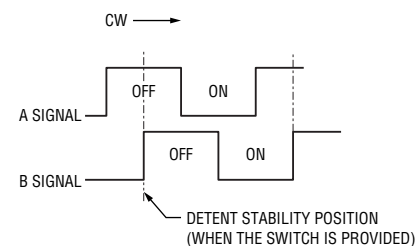
Click these links for more information:



Switch Circuit

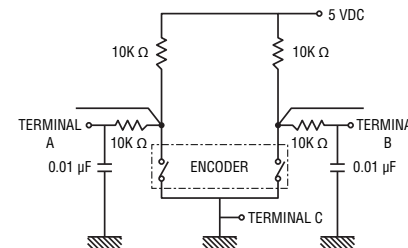


Quadrature Output Table



*DETENT POSITION CANNOT BE SPECIFIED FOR B SIGNAL

Suggested Filter Circuit



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CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.

See www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

**Excluding FDA Class III devices and generally equivalent classification outside of the United States.

***Devices are tested using standard noise reduction filters. For optimum performance, designers should use noise reduction filters in their circuits.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

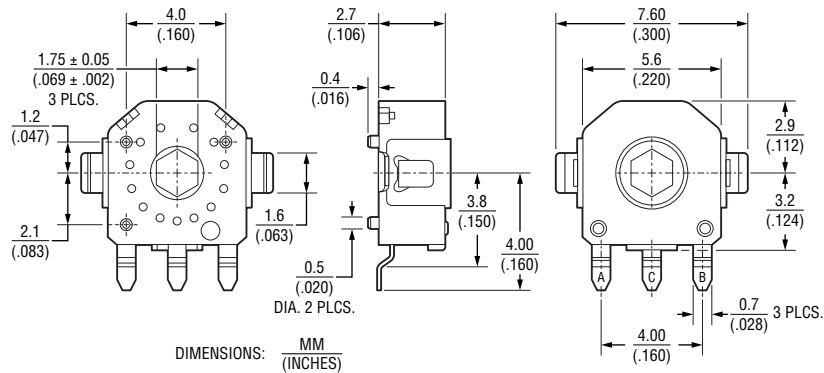
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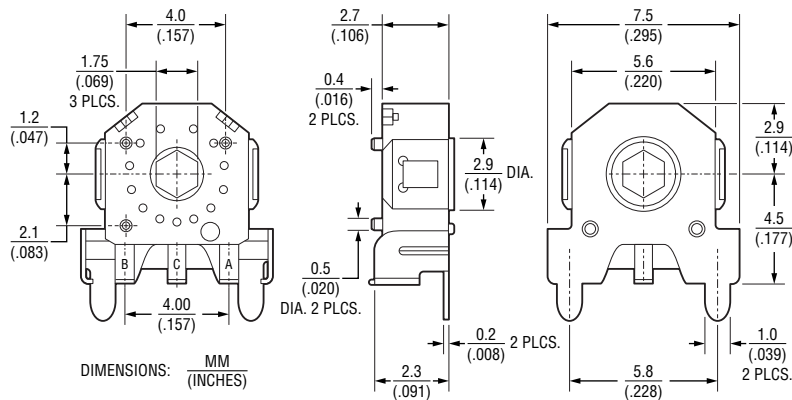
Product Dimensions

PEC052 Vertical PC Board Surface Mount



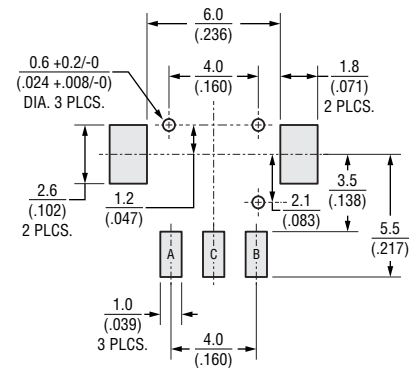
Product Dimensions

PEC053 Horizontal PC Board Mounting Hole



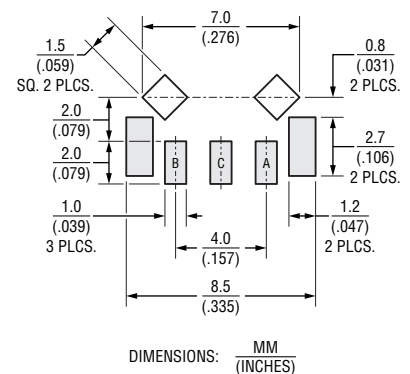
Recommended PCB Layout

PEC052 Vertical PC Board Surface Mount



Recommended PCB Layout

PEC053 Horizontal PC Board Mounting Hole



Unspecified Dimensional Tolerances

<10 mm	± 0.3 ($\pm .012$)
10 - 100 mm	± 0.5 ($\pm .020$)
>100 mm	± 0.8 ($\pm .031$)
Angles	$\pm 5^\circ$

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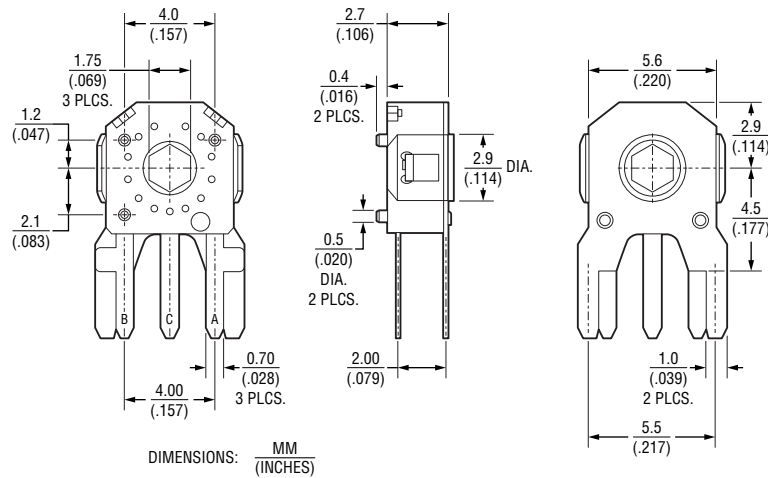
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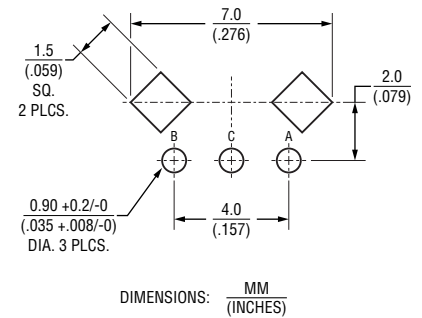
Product Dimensions

PEC055 Horizontal PC Board Mounting Hole Pin



Recommended PCB Layout

PEC055 Horizontal PC Board Mounting Hole Pin



How To Order

PEC052 - 1 01 F - N 0012

Model Series	PEC05 = 12 mm Incremental Micro Encoder
Part Orientation	2 = Vertical Surface Mount 3 = Horizontal Mounting Hole 5 = Horizontal Mounting Hole Pin
Detent Option	1 = 12 Detents
Hexagonal Key Shaft	01 = 1.75 mm
Shaft Style	F = Plastic Key Shaft
Switch Configuration	N = No Switch
Resolution	0012 = 12 Pulses per 360 ° Rotation

Specifications are subject to change without notice.

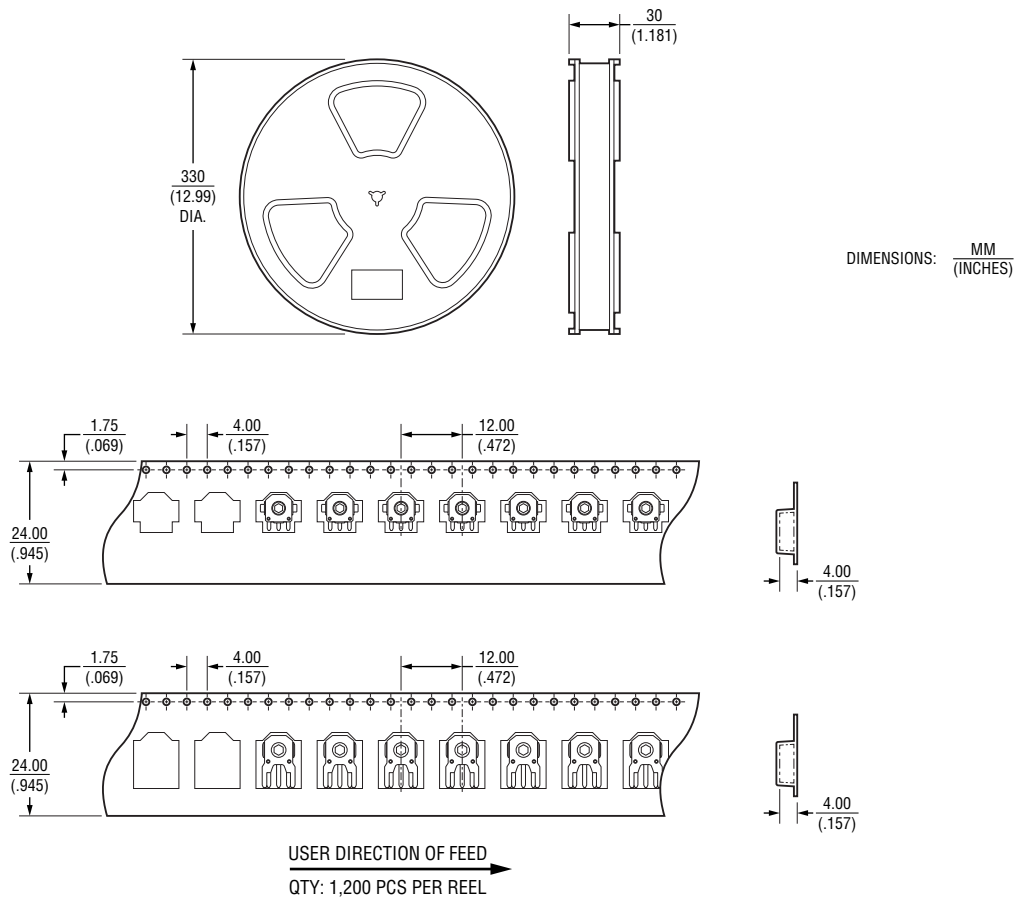
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PEC05 Series – 5 mm Incremental Micro Encoder

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Packaging Specifications



REV. 07/25

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