

Features

- Push switch option standard
- Compact, rugged design
- High reliability
- Metal bushing/shaft
- Surface mount version
- Long rotational life



PEC11J Series – 12 mm SMD Long Life Encoder

Electrical Characteristics

Output	2-bit quadrature code
Closed Circuit Resistance	3 ohms maximum
Contact Rating	10 mA @ 5 VDC
Insulation Resistance	100 megohms @ 250 VDC
Dielectric Withstanding Voltage - Sea Level.....	300 VAC minimum
Electrical Travel	Continuous
Contact Bounce (15 RPM).....	2.0 ms maximum
RPM (Operating)	60 maximum

Environmental Characteristics

Operating Temperature Range	-10 °C to +70 °C
Storage Temperature Range	-35 °C to +85 °C
Operating Humidity	25 % to 85 % R.H.
Rotational Life.....	100,000 cycles minimum
Switch Life	20,000 cycles minimum
IP Rating.....	IP 40
Moisture Sensitivity Level	1
ESD Classification (HBM).....	.N/A

Mechanical Characteristics

Mechanical Angle	360 ° continuous
Detent Torque	100 ±70 gf.cm
Shaft Push-Pull Strength	8 kg max.
Weight	5 gm maximum
Terminals	Printed circuit board surface mount terminals
Soldering Condition	
Reflow Soldering	Sn95.5/Ag2.8/Cu0.7 solder with no-clean flux (see Solder Profiles for recommended time and temperature)
Hand Soldering	Not recommended
Hardware	No hardware supplied with this encoder

Switch Characteristics

Switch Type	Contact Push ON Momentary SPST
Power Rating (Resistive Load)	10 mA at 5 V DC
Switch Travel	
S (Standard)	0.5 ± 0.3 mm
H (High)	1.5 ± 0.5 mm
Switch Actuation Force	See How to Order
Contact Resistance	100 mΩ max.

Packaging Characteristics

Pieces per Tray.....	75
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How To Order

	PEC11J - 9 2 20 F - S 0015
Model _____	
Terminal Configuration _____	
9 = Surface Mount Gull-wing Style	
Detent Option _____	
1 = 18 Detents (Exclusively for 9 Pulses)	
2 = 30 Detents (Exclusively for 15 Pulses)	
Shaft Length _____	
15 = 15.0 mm 20 = 20.0 mm 25 = 25.0 mm	
Shaft Style _____	
F = Flatted, Metal	
Switch Configuration (SPST) _____	
S = 350 ± 100 gf H = 400 ± 200 gf N = No Switch	
Resolution _____	
0009 = 9 Pulses per 360 ° Rotation 0015 = 15 Pulses per 360 ° Rotation	

Additional Information

Click these links for more information:

[PRODUCT SELECTOR](#) [TECHNICAL LIBRARY](#) [INVENTORY](#) [SAMPLES](#) [CONTACT](#)

WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

Applications

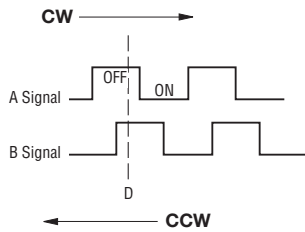
Level control, tuning and timer settings in:

- Professional audio equipment
- Professional lighting consoles
- Consumer white goods
- Test and measurement equipment
- Communications equipment
- Laboratory equipment

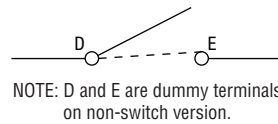
PEC11J Series – 12 mm SMD Long Life Encoder

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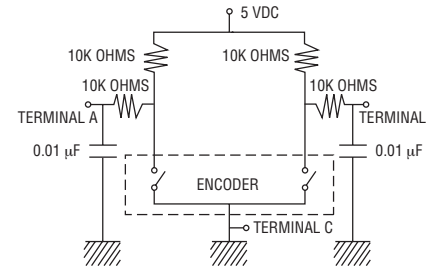
Quadrature Output Table



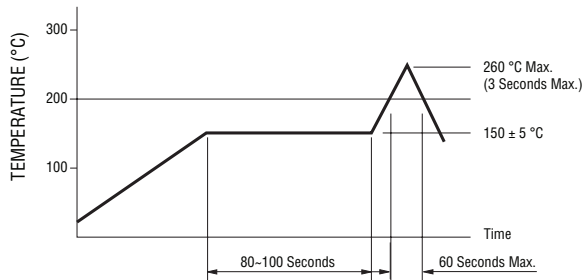
Switch Circuit



Suggested Filter Circuit



Solder Profile



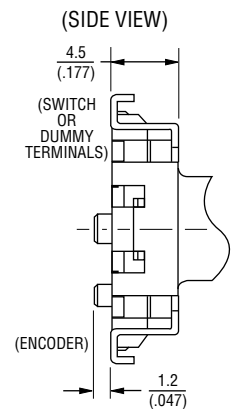
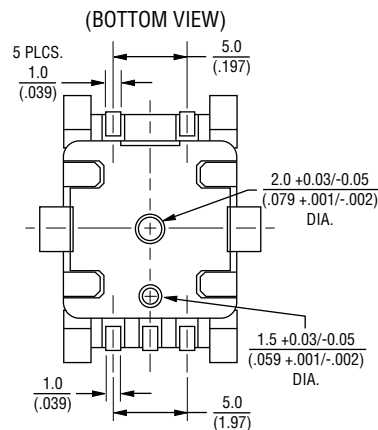
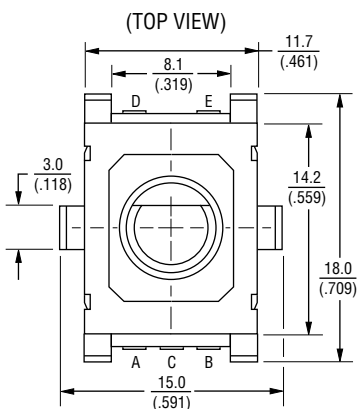
Processing Method: Reflow soldering with infrared heat or forced air convection (only once).

Notes:

1. No-clean solder paste is recommended.
2. Aqueous wash is not recommended.
3. Use of water soluble soldering flux should be avoided due to possible corrosion.
4. Multiple passes through the soldering process is not recommended.

Product Dimensions

Common Dimensions



TOLERANCES (UNLESS OTHERWISE NOTED): ≤ 10 $\leq (.394)$ = ± 0.3 $\pm (.012)$ > 10 $> (.394)$ = ± 0.5 $\pm (.020)$

DIMENSIONS: $\frac{MM}{(INCHES)}$

Specifications are subject to change without notice.

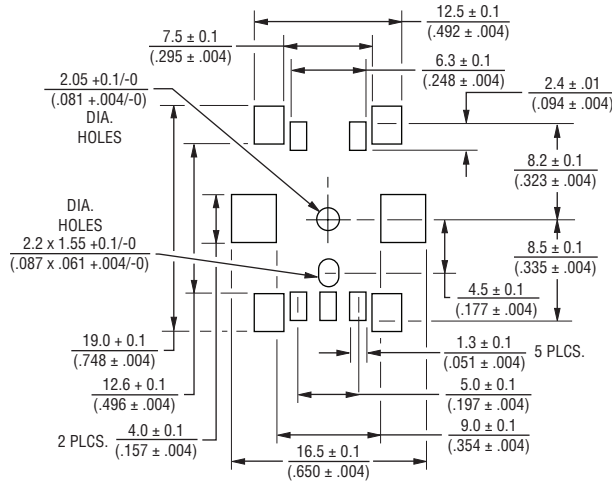
Users should verify actual device performance in their specific applications.

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Recommended PCB Layout

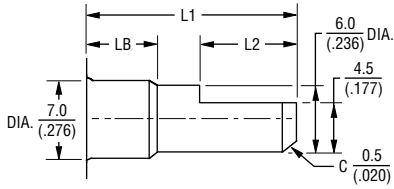


DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Product Dimensions - Shaft Styles

PEC11J without Switch

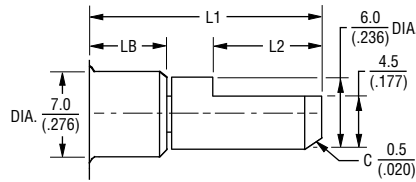
FLATTED SHAFT



L1	LB	L2
$\frac{15}{(.591)}$	$\frac{7}{(.276)}$	$\frac{5}{(.197)}$
$\frac{20}{(.787)}$	$\frac{10}{(.394)}$	$\frac{7}{(.276)}$
$\frac{25}{(.984)}$	$\frac{10}{(.394)}$	$\frac{10}{(.394)}$

PEC11J with 0.5 mm Switch Travel

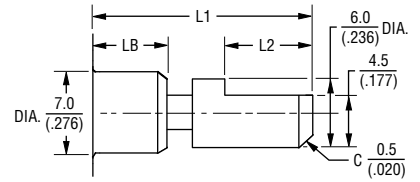
FLATTED SHAFT



L1	LB	L2
$\frac{15}{(.591)}$	$\frac{7}{(.276)}$	$\frac{5}{(.197)}$
$\frac{20}{(.787)}$	$\frac{10}{(.394)}$	$\frac{7}{(.276)}$
$\frac{25}{(.984)}$	$\frac{10}{(.394)}$	$\frac{10}{(.394)}$

PEC11J with 1.5 mm Switch Travel

FLATTED SHAFT



L1	LB	L2
$\frac{15}{(.591)}$	$\frac{7}{(.276)}$	$\frac{5}{(.197)}$
$\frac{20}{(.787)}$	$\frac{10}{(.394)}$	$\frac{7}{(.276)}$
$\frac{25}{(.984)}$	$\frac{10}{(.394)}$	$\frac{10}{(.394)}$