

Features

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



PEC11S Series - 12 mm SMD Incremental Encoder

Electrical Characteristics

Output	2-bit gray code
Closed Circuit Resistance	3 ohms maximum
Contact Rating	1 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	-40 °C to +70 °C (-40 °F to +158 °F)
Storage Temperature Range	-40 °C to +85 °C (-40 °F to +185 °F)
Humidity	MIL-STD-202, Method 103B, Condition B
Vibration	30 G
Contact Bounce	10~55~10 Hz / 1 min. / Amplitude 1.5 mm
Shock	100 G
Rotational Life	15,000 cycles minimum
Switch Life	20,000 cycles minimum
IP Rating	IP 40

Mechanical Characteristics

Mechanical Angle	360 ° continuous
Torque	
Running	100 ±70 gf.cm (1.36 ±0.1 oz.-in.)
Shaft Push-Pull Strength	5 kg max.
Weight	5 gm (0.17 oz.) 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	0.5 +0.4/-0.3 mm
Switch Actuation Force	350 ± 100 gf (4.9 ± 1.4 oz.-in.) See How to Order
Contact Resistance	100 mΩ max.

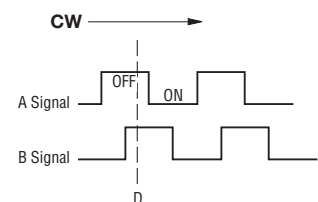
How To Order

PEC11S - 9 2 20 F - S 0015

Model	PEC11S
Terminal Configuration	9 = Surface Mount Gull-wing Style
Detent Option	2 = 2 Detents per Pulse
Shaft Length* (see Product Dimensions)	20 = 20.0 mm
9 = 9.5 mm	
13 = 13.5 mm	
15 = 15.0 mm	
20 = 20.0 mm	
Shaft Style	F = Flatted, Metal
K = Knurled, Metal	
Switch Configuration (SPST)	S = 350 ± 100 gf; 0.5 ± 0.5 mm
H = 400 ± 200 gf; 1.5 ± 0.5 mm	
N = No Switch	
Resolution	0015 = 15 Pulses per 360 ° Rotation

*No switch versions - available with 9.5 and 15 mm shaft lengths.
Switch versions - available with 9.5, 13.5 and 20 mm shaft lengths.

Quadrature Output Table



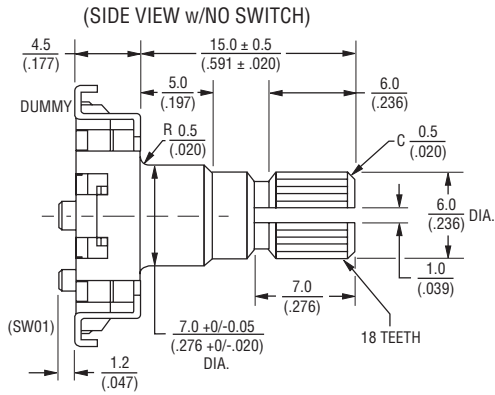
*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

PEC11S Series - 12 mm SMD Incremental Encoder

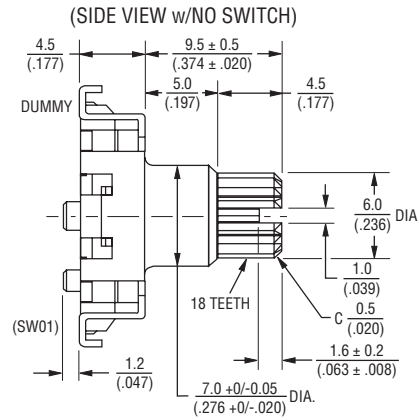
BOURNS®

Product Dimensions

PEC11S-xx15K-Nxxxx

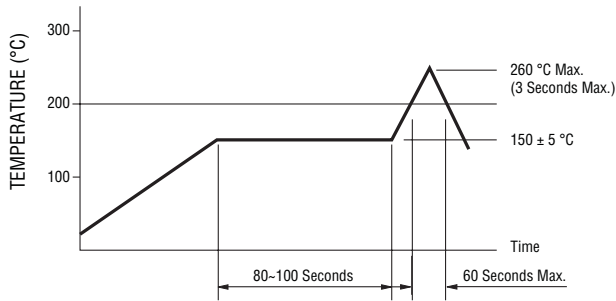


PEC11S-xx9K-Nxxxx

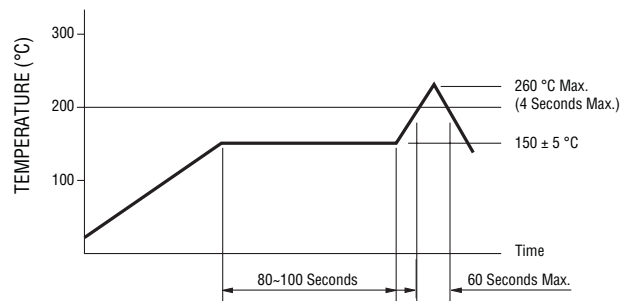


DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Solder Profiles



Processing Method: Reflow soldering with **infrared heat** (only once).



Processing Method: Reflow soldering with **forced air convection** (only once).