

Model 2947B-2 Calibration capacitor

Features

- Allows simulation of a piezoelectric transducer charge output
- Precision 1000 pF shielded capacitor
- Used for charge amplifier calibration
- Converts voltage to charge
- Easy to use



Description

The Endevco® model 2947B-2 is a stable, precision, 1000 pF shielded capacitor designed specifically for calibrating charge sensing amplifiers. The voltage output from a signal generator is readily converted to a charge signal by connecting a capacitor in series between the generator and charge amplifier.

The transfer function is: $Q = EC$

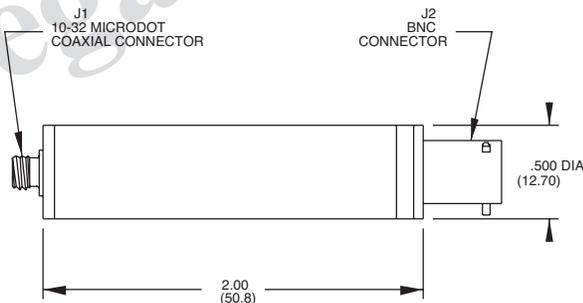
Where:

Q = Charge, in picocoulombs (pC)

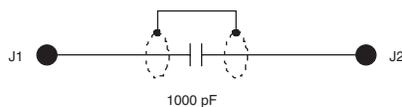
E = Voltage, in volts (V)

C = Capacitance, in picofarads (pF)

Since the capacitor is exactly 1000 pF, the transfer function simplifies to $Q \text{ (pC)} = E \text{ (mV)}$. The charge must be expressed in units of pC pk if the voltage is expressed in peak units. Similarly, voltage rms converts to pC rms.



STANDARD TOLERANCE
INCHES (MILLIMETERS)
.XX = +/- .03 (X = +/- .8)
.XXX = +/- .010 (XX = +/- .25)



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Specifications

Inputs

Type Input is a signal from a voltage source

Outputs

Type Output is a charge signal designed to go to a charge sensing amplifier

Electrical

Capacitance

Typical 1000 pF $\pm 1\%$

Marked Actual capacitance measured at 75°F (24°C)

Voltage

100 VDC, or VAC pk, maximum

Environmental

Temperature range 32°F to 122°F (0°C to 50°C)

Temperature coefficient $\pm 0.003\%/^{\circ}\text{C}$, typical

Humidity Epoxy sealed, 95% R.H. maximum

Physical

Dimensions 1/2" d x 2" l (13 mm x 51 mm)

Connector

J1 Coaxial receptacle, 10-32 NF-2A threads, mates with
Endevco model 3090C cable assembly

J2 BNC type coaxial receptacle

Calibration data supplied

Capacitance, in pF, measured at 75°F (24°C) is marked on each unit. Estimated uncertainty of the measurement is ± 1 pF

Notes:

1. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.