Pickering Series 111

Pico-SIL/SIP Reed Relays
Including coaxial types for up to 1.5GHz
Stacks on 0.15 x 0.40 inches pitch giving very high packing density

Features

- **SoftCenter®** construction (see adjacent diagram)
- Highest quality instrumentation grade switches
- Mu-metal magnetic screening
- Two package styles - Mu-metal package or Plastic package with internal mu-metal magnetic screen
- They take up the minimum of board area, conserving board space
- Insulation resistance greater than $10^{12}$ Ω
- 3 or 5 Volt coils with or without internal diode
- 100% tested for dynamic contact resistance for guaranteed performance

The Pickering Series 111 is a range of magnetically screened single-in-line reed relays that stack on 0.15 inches by 0.4 inches pitch. They have an identical footprint to the Series 110 and 112 but the height is reduced to only 0.26 inches (6.6mm). The switch rating of 5 Watts is adequate for most instrumentation applications. If a higher power rating is required, please look at our Series 110 or 112 which have a higher power rating and an identical pin-out. The range also includes the type 111RF, a 50 ohms coaxial device suitable for use up to 1.5GHz.

These relays require around one third the board area of the more usual 0.2 x 0.8 inch devices and are ideal for high density applications.

Two package styles are available:

The type 111 is encapsulated in a mu-metal can. The coaxial version, type 111RF, is also available in this package style.

The type 111P is encapsulated in a plastic package and features an internal mu-metal screen. An internal diode is an option in both types.

Magnetic screening is essential to avoid magnetic interaction problems. Interaction is usually measured as a percentage increase in the voltage required to operate a relay when two additional relays, stacked one each side, are themselves operated. An unscreened device mounted on this pitch would have an interaction figure of around 40%. Relays of this size would therefore be totally unsuitable for applications where dense packing is required. Pickering Series 111 have an interaction figure of around 1 percent.

Typical Pickering **SoftCenter®** Construction

Magnetic screening is essential to avoid magnetic interaction problems. Interaction is usually measured as a percentage increase in the voltage required to operate a relay when two additional relays, stacked one each side, are themselves operated. An unscreened device mounted on this pitch would have an interaction figure of around 40%. Relays of this size would therefore be totally unsuitable for applications where dense packing is required. Pickering Series 111 have an interaction figure of around 1 percent.

![Diagram of Pico-SIL/SIP Reed Relays](image)

**Key:**
- **Unscreened**
- **Internal mu-metal screen**
- **Complete mu-metal can**

**Percentage Interaction (change in operate voltage):**
- 0% for Pickering relays
- 108% for Other unscreened 0.2 inch relays
- 104% for 100P
- 111% for 105
- 107% for 100

**Package Width (inches):**
- 0.1
- 0.2
- 0.3
- 0.4
**Pin Configuration and Dimensional Data**

Dimensions in inches (Millimeters in brackets)

### Type 111

Mu-metal package

![Type 111 Pin Configuration](image1)

- **Pin 1**
  - 0.02 (0.5)
  - 0.145 (3.7)
- **Pin 2**
  - 0.02 (0.5)
  - 0.39 (10.0)
- **Pin 3**
  - 0.02 (0.5)
  - 0.125 (3.2)
- **Pin 4**
  - 0.02 (0.5)
  - 0.125 (3.2)
- **Pin 5**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 6**
  - 0.02 (0.5)
  - 0.02 (0.5)

Plastic package with internal mu-metal screen

![Type 111 Pin Configuration](image2)

- **Pin 1**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 2**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 3**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 4**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 5**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 6**
  - 0.02 (0.5)
  - 0.02 (0.5)

### Type 111P

Mu-metal package

![Type 111P Pin Configuration](image3)

- **Pin 1**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 2**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 3**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 4**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 5**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 6**
  - 0.02 (0.5)
  - 0.02 (0.5)

Plastic package with internal mu-metal screen

![Type 111P Pin Configuration](image4)

- **Pin 1**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 2**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 3**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 4**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 5**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 6**
  - 0.02 (0.5)
  - 0.02 (0.5)

### Type 111RF

Mu-metal package

![Type 111RF Pin Configuration](image5)

- **Pin 1**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 2**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 3**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 4**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 5**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 6**
  - 0.02 (0.5)
  - 0.02 (0.5)

Plastic package with internal mu-metal screen

![Type 111RF Pin Configuration](image6)

- **Pin 1**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 2**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 3**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 4**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 5**
  - 0.02 (0.5)
  - 0.02 (0.5)
- **Pin 6**
  - 0.02 (0.5)
  - 0.02 (0.5)

### Order Code

**Series**
- 111
- 1
- 1
- A
- 5
- /1
- D

**Number of reeds**
- 1

**Switch form**
- Form A

**Coil voltage**
- 500 V

**Switch number**
- (Only Type 1 available)

**Diode if fitted**
- (Omit if not required)

**Help**
If you need any technical advice or other help, for example, any special tests that you would like carried out, please do not hesitate to contact our Technical Sales Department. We will always be pleased to discuss Pickering relays with you.

email: techsales@pickeringrelay.com

Please ask us for a FREE evaluation sample.

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