

9800 Series/Surface Mount Reed Relays



SURFACE MOUNT REED RELAYS

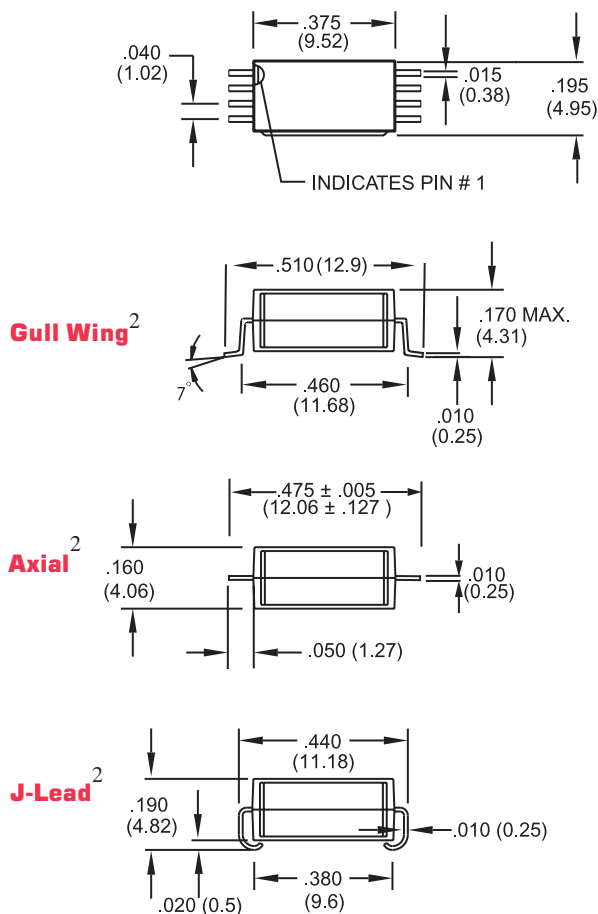
Ideally suited to the needs of Automated Test Equipment, Instrumentation and Telecommunications requirements, Coto's 9800 Series is an ultra-miniature Surface Mount Reed Relay that combines small size with exceptional RF performance. The 9814 extends life at ATE loads 3X or more utilizing Coto's proprietary switch technology. The external Magnetic Shield reduces interaction between parts in high density boards. The 9852 adds a form C capability. Small size plus added features allow for high density packing, and make these relays ideal for designs such as high speed, high pin count VLSI testers where speed, size and performance are all needed.

SERIES FEATURES

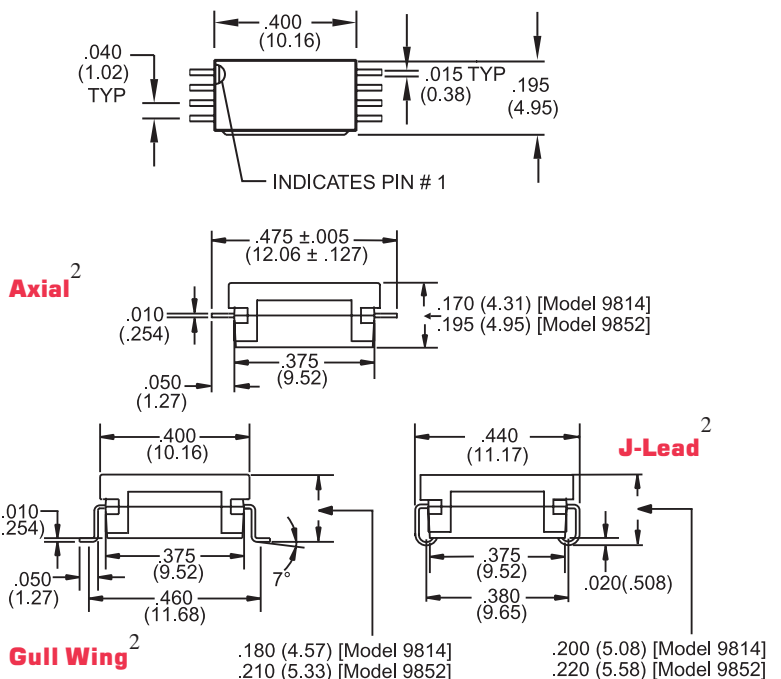
- ◆ Available in Axial, Gull wing and "J" lead configurations
- ◆ Tape and Reel packaging available
- ◆ High reliability, hermetically sealed contacts for long life
- ◆ High Insulation Resistance - $10^{12} \Omega$ minimum (Form A)
- ◆ Coaxial shield for 50 Ω impedance
- ◆ 6.5 GHz bandwidth for RF and Pulse switching (fast rise time pulses)
- ◆ External Magnetic Shield

Model 9802

Dimensions in Inches (Millimeters)



Models 9814 & 9852



Ordering Information

| Part Number | 9XXX-XX-XX | Lead Style |
|--------------|-----------------------|----------------|
| Model Number | 9802 9814 9852 | 00 = Gull Wing |
| Coil Voltage | 03 = 3.3 volts (9814) | 10 = Axial |
| | 05 = 5 volts | 20 = J-Lead |

9800 Series/Surface Mount Reed Relays

| Model Number | | | 9802 | 9814 | 9852 ⁴ |
|--|--|------------------------|--------------------------|--------------------------|--------------------------|
| Parameters | Test Conditions | Units | 1 Form A 50 Ω Coaxial | 1 Form A 50 Ω Coaxial | 1 Form C 50 Ω Coaxial |
| COIL SPECIFICATIONS | | | | | |
| Nom. Coil Voltage | | VDC | 5 | 3.3 5 | 5 |
| Max. Coil Voltage | | VDC | 6 | 4 6 | 6 |
| Coil Resistance | +/- 10%, 25° C | Ω | 150 | 70 150 | 110 |
| Operate Voltage | Must Operate by | VDC - Max. | 3.8 | 2.5 3.8 | 3.8 |
| Release Voltage | Must Release by | VDC - Min. | 0.4 | 0.4 0.4 | 0.4 |
| CONTACT RATINGS | | | | | |
| Switching Voltage | Max DC/Peak AC Resist. | Volts | 100 | 100 | 30 |
| Switching Current | Max DC/Peak AC Resist. | Amps | 0.25 | 0.25 | 0.1 |
| Carry Current | Max DC/Peak AC Resist. | Amps | 0.5 | 0.5 | 0.2 |
| Contact Rating | Max DC/Peak AC Resist. | Watts | 3 | 3 | 3 |
| Life Expectancy-Typical ¹ | Signal Level 1.0V,10mA | x 10 ⁶ Ops. | 250 | 1000 | 100N/C |
| Static Contact Resistance (max. init.) | 50mV, 10mA | Ω | 0.125 | 0.125 | 0.150 |
| Dynamic Contact Resistance (max. init.) | 0.5V, 50mA at 100 Hz, 1.5 msec | Ω | 0.150 | 0.150 | 0.150 |
| RELAY SPECIFICATIONS | | | | | |
| Insulation Resistance (minimum) | Between all Isolated Pins at 100V, 25°C, 40% RH | Ω | x 10 ¹² | 10 ¹² | 10 ⁹ |
| Capacitance - Typical Across Open Contacts | No Shield | pF | - | - | - |
| | Shield Floating | pF | - | - | - |
| | Shield Guarding | pF | 0.2 | 0.2 | 1.0 |
| Open Contact to Coil | No Shield | pF | - | - | - |
| | Shield Floating | pF | - | - | - |
| | Shield Guarding | pF | 0.5 | 0.5 | 1.0 |
| Closed Contact to Coil | Shield Guarding | pF | 0.5 | 0.5 | 0.5 |
| Contact to Shield | Contacts Open, Shield Floating | pF | - | - | - |
| Dielectric Strength (minimum) | Between Contacts | VDC/peak AC | 200 | 200 | 200 |
| | Contacts to Shield | VDC/peak AC | 1500 | 1500 | 1000 |
| | Contacts/Shield to Coil | VDC/peak AC | 1500 | 1500 | 1000 |
| Operate Time - including bounce - Typical / Max | At Nominal Coil Voltage, 30 Hz Square Wave | msec. | 0.25 | 0.25 | 1.0 |
| Release Time - Typical / Min | Zener-Diode Suppression ³ | msec. | 0.05 | 0.05 | 1.0 |

Top View: Dot stamped on top of relay refers to pin #1 location

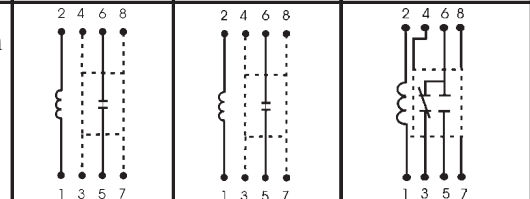
Notes:

¹ Consult factory for life expectancy at other switching loads. Contact resistance 2.0Ω defines end of life.

² Surface mount component processing temperature: 500°F / 260°C max for 1 minute dwell time. Temperature measured on leads where lead exits molded package.

³ Consists of 56V Zener diode and 1N4148 diode in series, connected in parallel with coil.

⁴ Custom Coil Designs are available. Contact Coto.



Environmental Ratings

Storage Temp: -35°C to +100°C; Operating Temp: -20°C to +85°C
The operate and release voltage and the coil resistance are specified at 25°C. These values vary by approximately 0.4%/°C as the ambient temperature varies.
Vibration: 20 G's to 2000 Hz; Shock: 50 G's

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