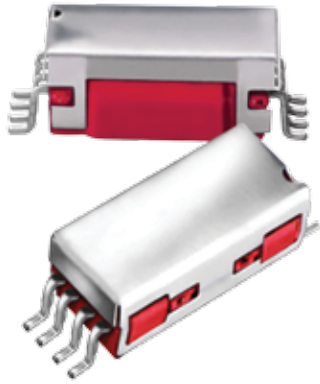


# 9814 & 9852 SURFACE MOUNT REED RELAYS



## 9814 & 9852 Series Surface Mount Reed Relays

Ideally suited to the needs of Automated Test Equipment, Instrumentation and Telecommunications requirements, Coto's 9814 & 9852 Series is a 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 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 high speed, small size and high performance are all needed.

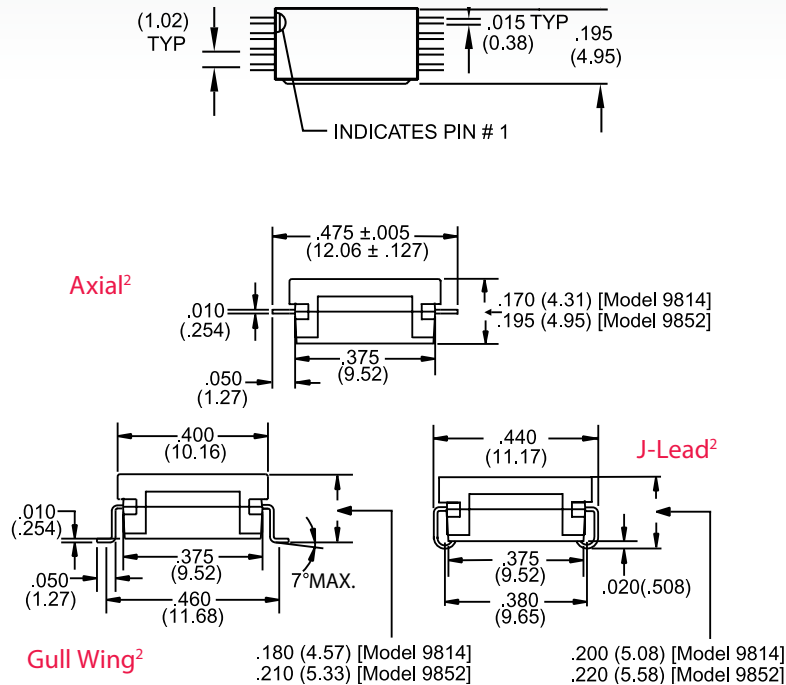
## 9814 & 9852 Series Features

- ▶ 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  $\Omega$  impedance
- ▶ 6.5 GHz bandwidth for RF and Pulse switching (fast rise time pulses)
- ▶ External Magnetic Shield
- ▶ RoHS compliant

## DIMENSIONS

*in Inches (Millimeters)*

### Models 9814 & 9852



### NOTE

- ▶ For RF Graph Performance, see "RF Graphs" section of the *Reed Relay Technical & Application Information*

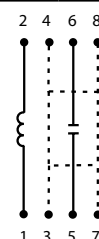
## Ordering Information

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

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

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



### Notes:

- <sup>1</sup> Consult factory for life expectancy at other switching loads. Contact resistance 2.0Ω defines end of life.
- <sup>2</sup> Surface mount component processing temperature: 500°F / 260°C max for 1 minute dwell time. Temperature measured on leads where lead exits molded package.

### Environmental Ratings:

*Storage Temp:* -35°C to +100°C; *Operating Temp:* -20°C to +85°C  
All electrical parameters measured at 25°C unless otherwise specified.  
*Vibration:* 20 G's to 2000 Hz; *Shock:* 50 G's

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