

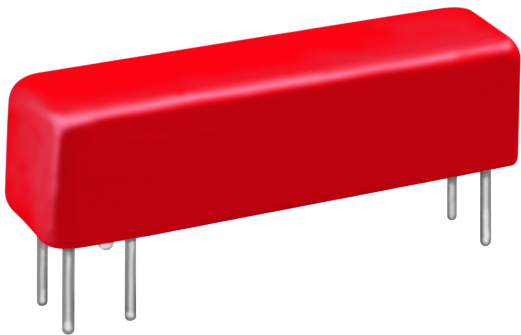
# 2200 SERIES REED RELAYS

## 2200 Series Reed Relays

Ideally suited to the needs of Automated Test Equipment and RF requirements. The specification tables allow you to select the appropriate relay for your particular application. If your requirements differ, please consult your local representative or Coto's Factory.

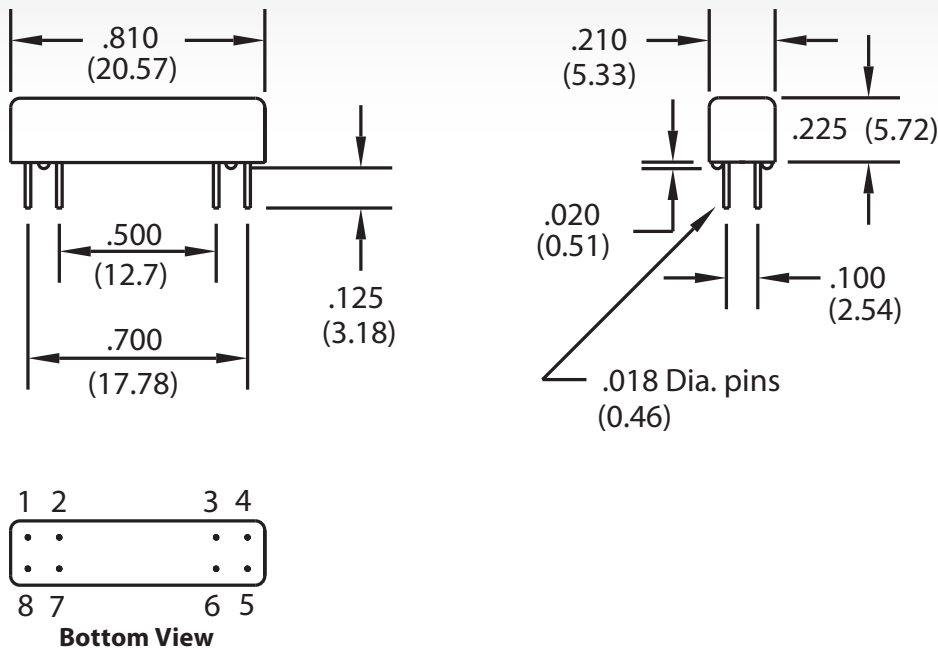
## 2200 Series Features

- ▶ Very small footprint (0.17 in<sup>2</sup>), high reliability reed relays
- ▶ High Insulation Resistance - 10<sup>12</sup> Ω available with model 2204
- ▶ High speed switching compared to electromechanical relays
- ▶ Hermetically sealed contacts for long life
- ▶ Epoxy coated steel shell provides magnetic shielding
- ▶ Optional Electrostatic Shield for reducing capacitive coupling
- ▶ Optional Coaxial Shield for 50Ω impedance and switching of fast rise time digital pulses offered on Form A
- ▶ Relay models 2200-2301, 2200-2302 are ATE industry standards
- ▶ Specifically engineered for OEM designs and maintenance of existing production fixtures
- ▶ RoHS compliant



## DIMENSIONS

*in Inches (Millimeters)*



### NOTE

- ▶ Model #'s 2200-2301 & 2200-2302 represent complete part numbers.

## Ordering Information

| Part Number  | XXXX-XX-XX1   | Shielding Options <sup>2</sup>              |
|--------------|---|---|
| Model Number |   |   |
| 2204         |   | 0=No Shielding                              |
| 2211         |   | 1=Electrostatic Shield (N/A on Model #2211) |
|              | Coil Voltage  | 2=Coaxial Shield (N/A on Model #2211)       |
|              | 05=5 volts  |   |
|              | 12=12 volts   |   |
|              | Coil Options  |   |
|              | 3=use for Model #2204 (12 volt coil) and Model #2211 (5 & 12 volt coil) |   |
|              | 4=use for Model #2204 (5 volt coil)                                     |   |

| MODEL NUMBER   |                 |   | 2204             |  | 2211             |  | 2200-2301                        |  | 2200-2302                  |  |
|--|-----------------|---|------------------|--|------------------|--|----------------------------------|--|----------------------------|--|
| Parameters   | Test Conditions | Units   | 1 Form A         |  | 1 Form C         |  | 1 Form A<br>Electrostatic Shield |  | 1 Form A<br>Coaxial Shield |  |
| COIL SPECS.  |                 |   |                  |  |                  |  |                                  |  |                            |  |
| Nom. Coil Voltage  |                 | VDC   | 5 12             |  | 5 12             |  | 5                                |  | 5                          |  |
| Coil Resistance  |                 | +/- 10%, 25° C<br>Ω                                     | 370 1500         |  | 230 1500         |  | 150                              |  | 150                        |  |
| Operate Voltage  |                 | Must Operate by<br>VDC - Max.                           | 3.8 9.0          |  | 3.8 9.0          |  | 3.6                              |  | 3.6                        |  |
| Release Voltage  |                 | Must Release by<br>VDC - Min.                           | 0.4 1.0          |  | 0.4 1.0          |  | 0.5                              |  | 0.5                        |  |
| CONTACT RATINGS  |                 |   |                  |  |                  |  |                                  |  |                            |  |
| Switching Voltage  |                 | Max DC/Peak AC Resist.<br>Volts                         | 200              |  | 100              |  | 150                              |  | 150                        |  |
| Switching Current  |                 | Max DC/Peak AC Resist.<br>Amps                          | 0.5              |  | 0.25             |  | 0.5                              |  | 0.5                        |  |
| Carry Current  |                 | Max DC/Peak AC Resist.<br>Amps                          | 1.0              |  | 0.5              |  | 1.0                              |  | 1.0                        |  |
| Contact Rating   |                 | Max DC/Peak AC Resist.<br>Watts                         | 10               |  | 3                |  | 10                               |  | 10                         |  |
| Life Expectancy-Typical <sup>1</sup>   |                 | Signal Level 1.0V, 10mA<br>x 10 <sup>6</sup> Ops.       | 500              |  | 100              |  | 500                              |  | 500                        |  |
| Rated Loads  |                 | x 10 <sup>6</sup> Ops.                                  | 5                |  | 5                |  | 5                                |  | 5                          |  |
| Static Contact Resistance (max. init.)   |                 | 50mV, 10mA<br>Ω   | 0.100            |  | 0.150            |  | 0.150                            |  | 0.150                      |  |
| Dynamic Contact Resistance (max. init.)  |                 | 0.5V, 50mA<br>at 100 Hz, 1.5 msec<br>Ω                  | 0.200            |  | 0.200            |  | 0.200                            |  | 0.200                      |  |
| RELAY SPECIFICATIONS   |                 |   |                  |  |                  |  |                                  |  |                            |  |
| Insulation Resistance (minimum)  |                 | Between all Isolated Pins<br>at 100V, 25°C, 40% RH<br>Ω | 10 <sup>12</sup> |  | 10 <sup>11</sup> |  | 10 <sup>11</sup>                 |  | 10 <sup>11</sup>           |  |
| Capacitance - Typical<br>Across Open Contacts  |                 | Shield Floating<br>pF                                   | 0.9              |  | 0.9              |  | 0.9                              |  | 0.9                        |  |
|  |                 | Shield Guarding<br>pF                                   | 0.2              |  | N/A              |  | 0.2                              |  | 0.2                        |  |
| Dielectric Strength (minimum)  |                 | Between Contacts<br>VDC/peak AC                         | 250              |  | 200              |  | 250                              |  | 250                        |  |
|  |                 | Contacts to Coil<br>VDC/peak AC                         | 250              |  | N/A              |  | 250                              |  | 250                        |  |
|  |                 | Contacts/Shield to Coil<br>VDC/peak AC                  | 1500             |  | 1500             |  | 1500                             |  | 1500                       |  |
| Operate Time - including bounce  |                 | At Nominal Coil Voltage,<br>30 Hz Square Wave<br>msec.  | 0.5 (typ.)       |  | 1.0 (typ.)       |  | 0.55 (max.)                      |  | 0.55 (max.)                |  |
| Release Time - Typical   |                 | msec.   | 0.1              |  | 2.0              |  | 0.1                              |  | 0.1                        |  |
| Top View:<br>Dot stamped on top of relay refers to pin #1 location<br>Grid = .1"x.1" (2.54mm x 2.54mm) |                 |   |                  |  |                  |  |                                  |  |                            |  |

#### Notes:

<sup>1</sup> Consult factory for life expectancy at other switching loads.

<sup>2</sup> Model 2204, pin #7 is tied to optional electrostatic shield, pins #6 & #7 are tied to optional coaxial shield.

#### Environmental Ratings:

*Storage Temp:* -35°C to +100°C; *Operating Temp:* -20°C to +85°C; *Solder Temp:* 270°C max; 10 sec. max

All electrical parameters measured at 25°C unless otherwise specified.

*Vibration:* 20 G's to 2000 Hz; *Shock:* 50 G's