

# 2300 SERIES MULTI-POLE REED RELAYS



## 2300 Series Multi-Pole Reed Relays

The Coto 2300 series is designed to offer the densest packaging available in a multi-pole reed relay. The size and footprint of the 2300 series complement the 2200 & 2900 series relays. The 1 Form C model is constructed with individual switch capsules for the normally open and magnetically biased normally closed contacts which are more reliable than the spring actuated 1 Form C reed switches. Custom pin-outs as well as custom designs are available to meet particular applications.

### 2300 Series Features

- ▶ Smallest Multi-pole Relay: 0.056 sq. inches/pole (3 pole relay)
- ▶ Up to 3 Form A or 2 Form C Contacts
- ▶ Hermetically Sealed Contacts
- ▶ Long Life / High Reliability
- ▶ Magnetically Shielding Steel Shell
- ▶ Optional Electrostatic Shield (on models 2332 & 2341)
- ▶ RoHS compliant

## DIMENSIONS

*in Inches (Millimeters)*



## Ordering Information

Part Number **23XX-XX-0X0**

| Model Number    | Coil Voltage              | Shielding Options <sup>3</sup> |
|-----------------|---------------------------|--------------------------------|
| 2332 (2 Form A) | 05=5 volts<br>12=12 volts | 2332 or 2341 only              |
| 2333 (3 Form A) |                           | 0=No Shielding                 |
| 2341 (1 Form C) |                           | 1=Electrostatic Shield         |
| 2342 (2 Form C) |                           | 2=Coaxial Shield               |

| MODEL NUMBER                                  |  |                        | 2332             | 2333             | 2341 <sup>2,4</sup> | 2342            |
|---|--|------------------------|------------------|------------------|---------------------|-----------------|
| Parameters                                    | Test Conditions                                    | Units                  | 2 Form A         | 3 Form A         | 1 Form C            | 2 Form C        |
| <b>COIL SPECS.</b>                            |  |                        |                  |                  |                     |                 |
| Nom. Coil Voltage                             |  | VDC                    | 5 12             | 5 12             | 5 12                | 5 12            |
| Coil Resistance                               | +/- 10%, 25° C                                     | Ω                      | 175 1000         | 175 1000         | 230 1000            | 175 1000        |
| Operate Voltage                               | Must Operate by                                    | VDC - Max.             | 3.8 9.0          | 3.8 9.0          | 3.8 9.0             | 3.8 9.0         |
| Release Voltage                               | Must Release by                                    | VDC - Min.             | 0.4 1.0          | 0.4 1.0          | 0.4 1.0             | 0.4 1.0         |
| <b>CONTACT RATINGS</b>                        |  |                        |                  |                  |                     |                 |
| Switching Voltage                             | Max DC/Peak AC Resist.                             | Volts                  | 200              | 200              | 200                 | 100             |
| Switching Current                             | Max DC/Peak AC Resist.                             | Amps                   | 0.5              | 0.5              | 0.5                 | 0.25            |
| Carry Current                                 | Max DC/Peak AC Resist.                             | Amps                   | 1.5              | 1.5              | 1.5                 | 0.5             |
| Contact Rating                                | Max DC/Peak AC Resist.                             | Watts                  | 10               | 10               | 10                  | 3               |
| Life Expectancy-Typical <sup>1</sup>          | Signal Level 1.0V, 10mA                            | x 10 <sup>6</sup> Ops. | 500              | 500              | 500                 | 100             |
| Static Contact Resistance (max. init.)        | 50mV, 10mA   | Ω                      | 0.150            | 0.150            | 0.150               | 0.200           |
| Dynamic Contact Resistance (max. init.)       | 0.5V, 50mA<br>at 100 Hz, 1.5 msec                  | Ω                      | 0.200            | 0.200            | 0.200               | 0.250           |
| <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>12</sup> | 10 <sup>12</sup>    | 10 <sup>9</sup> |
| Capacitance - Typical<br>Across Open Contacts | No Shield  | pF                     | 0.8              | 0.8              | 1.7                 | 2.0             |
|   | Shield Guarding                                    | pF                     | 0.2              | N/A              | 0.7                 | N/A             |
| Dielectric Strength<br>(minimum)              | Between Contacts                                   | VDC/peak AC            | 250              | 250              | 250                 | 200             |
|   | Contacts to Shield                                 | VDC/peak AC            | 1000             | N/A              | 1000                | N/A             |
|   | Contacts/Shield to Coil                            | VDC/peak AC            | 1000             | 1000             | 1000                | 1000            |
| Operate Time -<br>including bounce - Typical  | At Nominal Coil Voltage,<br>30 Hz Square Wave      | msec.                  | 0.5              | 0.5              | 0.5                 | 1.5             |
| Release Time - Typical                        |  | msec.                  | 0.15             | 0.15             | 0.5                 | 2.0             |

Top View<sup>3</sup>:  
Dot stamped on top of relay refers to pin #1 location  
Grid = .1"x.1" (2.54mm x 2.54mm)



### Notes:

- <sup>1</sup> Consult factory for life expectancy at other switching loads. Resistance >0.5Ω defines end of life or failure to open.
- <sup>2</sup> Break-before-make action on Form C Model 2341 is not guaranteed. Consult factory if break-before-make is required.
- <sup>3</sup> Electrostatic shield (2332 & 2341 only) is connected to pin #6. Coaxial shield is connected to pins #6 and #7.
- <sup>4</sup> This relay is polarity sensitive. Pin #3 MUST be positive.

### 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