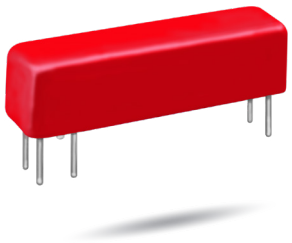
1 Description

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.

Device Packages



2 Features

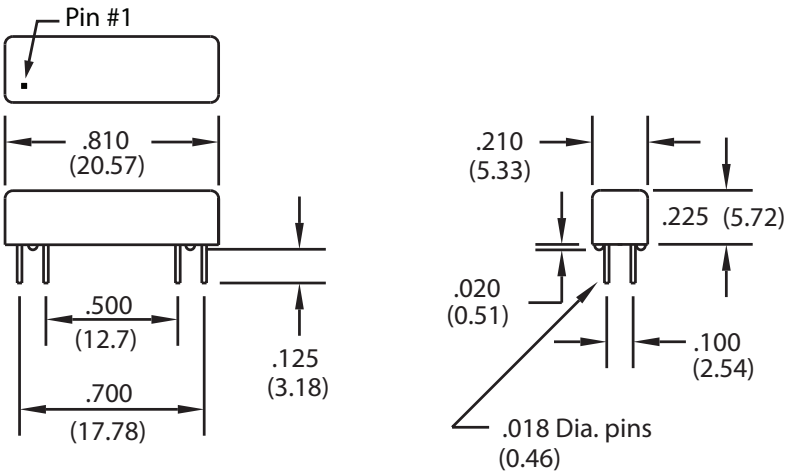
- Small footprint of 0.17 in^2
- High Insulation Resistance - $10^{11}\Omega$ minimum; ($10^{12}\Omega$ for model 2204)
- Potting technology to minimize internal component stress
- Magnetically Shielding Steel Shell
- Optional Electrostatic Shield to reduce capacitive coupling
- Optional Coaxial Shield 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
- High reliability, hermetically sealed contacts for long life
- RoHS Compliant

3 Applications

- Automated Test Equipment
- Instrumentation
- Telecommunications

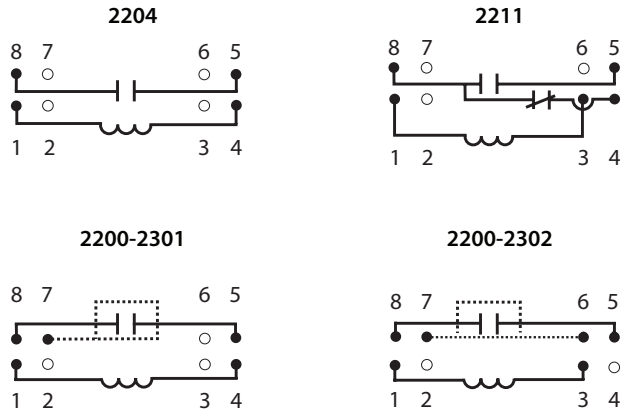
4 Dimensions

In Inches (Millimeters)



Schematics

(Top View)



5 Ordering Information

Part Number **22XX-XX-XX1**

Model Number
2204
2211

Coil Voltage
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)

Shielding Options[1]
0=No Shielding
1=Electrostatic Shield
2=Coaxial Shield

1 Option 1 & 2 Available Only on Model 2204

NOTE

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

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Parameters - Model Number 2200

Parameters	Test Conditions	Units	2204[2] 1 Form A	2211 1 Form C	2200-2301 1 Form A Electrostatic Shield	2200-2302 1 Form A Coaxial Shield
Coil Specs.						
Nom. Coil Voltage		VDC	5.0 12.0	5.0 12.0	5.0	
Coil Resistance	+/- 10%, 25°C	Ω	370 1500	230 1500	150	
Operate Voltage	Must Operate By	VDC - Max.	3.8 9.0	3.8 9.0	3.6	
Release Voltage	Must Operate By	VDC - Min.	0.4 1.0	0.4 1.0	0.5	
Contact Ratings						
Switching Voltage	Max DC/Peak AC Resist.	Volts	200	100	150	
Switching Current	Max DC/Peak AC Resist.	Amps	0.5	0.25	0.5	
Carry Current	Max DC/Peak AC Resist.	Amps	1.0	0.5	1.0	
Contact Rating	Max DC/Peak AC Resist.	Watts	10	3	10	
Life Expectancy - Typical[3]	Signal Level 1.0V, 10mA	x 10^6 Ops.	500	100	500	
Static Contact Resistance (Max. Init.)	50mV, 10mA	Ω	0.100	0.150	0.150	
Dynamic Contact Resistance (Max. Init.)	0.5V, 50mA at 100Hz, 1.5msec.	Ω	0.200	0.200	0.200	
Relay Specifications						
Insulation Resistance (Min.)	Between all Isolated Pins at 100V, 25°C, 40%RH	Ω	10^{12}	10^{11}	10^{11}	
Capacitance - Typical Across Open Contacts	No Shield Shield Guarding	pF	0.9 0.2	0.9 N/A	0.9 0.2	
Dielectric Strength (Min.)	Between Contacts Contacts to Shield Contacts/Shield to Coil	VDC/peak AC	250 250 1500	200 N/A 1500	250 250 1500	
Operate Time - Including Bounce	At Nominal Coil Voltage, 30Hz, Square Wave	msec.	0.5 Typ.	1.0 Typ.	0.55 Max.	
Release Time - Typical		msec.	0.1	2.0	0.1	

General Notes:

1. Consult factory for life expectancy at other switch loads.
2. On Model 2204, shielded versions are available. Electrostatic shield is connected to pin #7. Coaxial shield is connected to pins #6 and #7.

Environmental Ratings:

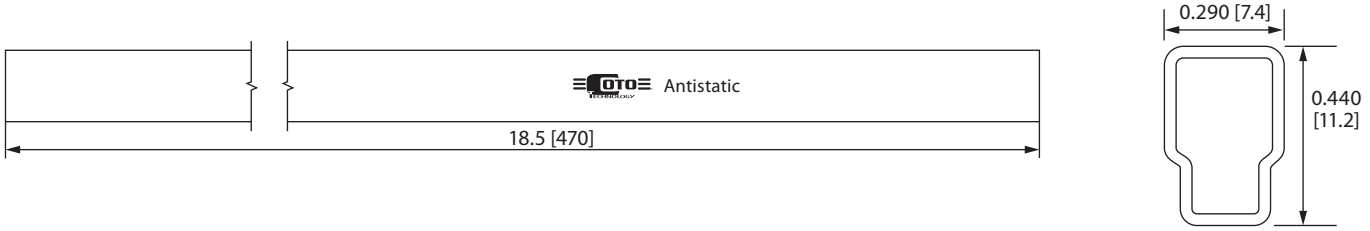
Storage Temp: -35°C to +100°C; Operating Temp: -20°C to +85°C
Vibration: 20 G's to 2000 Hz; Shock: 50 G's
All electrical parameters measured at 25°C unless otherwise specified.

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7 Package Information

Plastic Tube Dimensions

- 29 relays per tube



8 Relay Processing Notes

8.1 Soldering

Relays can be soldered by hand or by wave solder processing. Coto Technology recommends the maximum wave solder temperature (measured at the relay leads) as 270°C for 10 seconds. Temperature and time in excess of the recommended levels may result in damage to the relay. All our through-hole relays are compatible with either SAC alloy or eutectic soldering process.

8.2 Cleaning

2200 is designed and manufactured to provide an adequate seal from external conditions. However, caution must be taken during the cleaning process not to expose the relays to conditions that will allow moisture to permeate into the package. Caution should be taken with dwell time between reflow and cleaning, high pressure spraying, and time in cleaning solvent/aqueous solutions, as these cleaning process parameters can contribute to moisture permeation. Board level bake out may be required after wash to remove moisture that has been introduced during cleaning operations.

8.3 Relay Storage

Relay parametric specifications are specified at 25°C and 40% RH. Reduced relay performance may result if storage or use environments significantly exceed these conditions. If high insulation resistance is required, Coto Technology recommends that relay storage, processing, and use environments are adequate to achieve the desired results. Relays should be stored in similar environmental conditions as other high-reliability active and passive electronic components. Proper storage of relays is also important to maintain solderability over an extended period of time.

8.4 Handling

Relays should be handled with care. Dropping or mishandling relays may result in damage that can contribute to a direct failure or, even worse, a latent field failure. If relays are dropped, Coto Technology recommends that they should be discarded.

Coto Technology does not recommend use of ultrasonic activated equipment with relays. The use of ultrasonic equipment may change the characteristics of the relay and can contribute to failure.

Access our Technical Application Notes Section.

For recommendations and best practices for Form C relays click here:

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