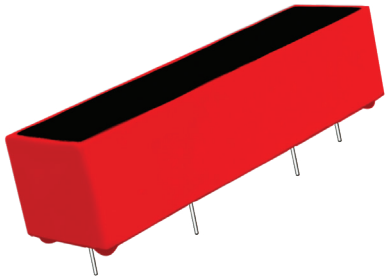
1 Description

The 5500 High Voltage Reed Relays set the industry standard for applications demanding high reliability. The potting technology employed to encapsulate these relays ensures the highest electrical insulation available in the industry. The 5500 series offers a switching power of up to 200 W, switching voltage up to 7.5 kV, breaking voltage up to 10 kV, and even higher dielectric strength.

In alignment with our commitment to quality, this relay undergoes rigorous 100% testing, including a 100% high voltage test. The 5500 reed relay series can be customized with a different pin layout and package form upon request.

Device Packages



2 Features

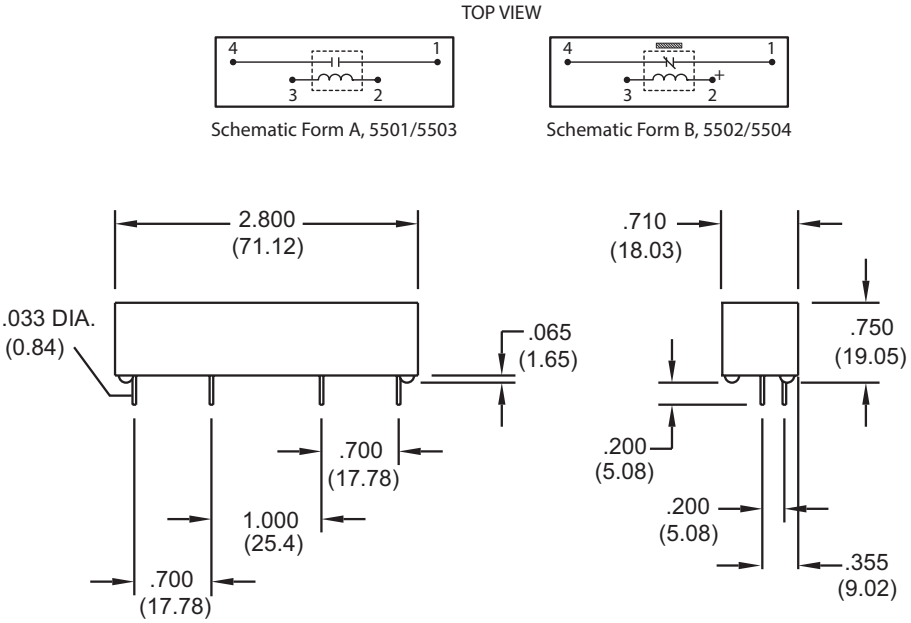
- High voltage switching up to 7500 V
- High dielectric strength (up to 10000 V)
- High contact rating up to 200 Watts
- Custom lead terminations and packages available upon request
- Potting technology to minimize internal component stress
- Magnetic shield
- High reliability, hermetically sealed contacts for long life
- High speed switching compared to electromechanical relays
- RoHS compliant

3 Applications

- Medical
- Solar Systems
- Battery Management
- EV/Automotive
- Hipot Instrumentation
- Automated Test Equipment
- Process Control

4 Dimensions

In Inches (Millimeters)



5 Ordering Information

Part Number **55XX-XX-1**

Model Number		Coil Voltage
5501	5502	05=5 volts
5503	5504	12=12 volts
		24=24 volts

6 Parameters - Model Number 5500

Parameters	Test Conditions	Units	5501	5502[3]	5503	5504[3]
Relay Configuration			**1 Form A** High Voltage Isolation	**1 Form B** High Voltage Isolation	**1 Form A** Load Switching	**1 Form B** Load Switching
Coil Specifications[1]						
Nom. Coil Voltage		VDC	5.0	12.0		24.0
Max. Coil Voltage		VDC	6.5	15.0		30.0
Coil Resistance	+/- 10%, 25°C	Ω	40	175		575
Operate Voltage	Must Operate By	VDC - Max.	3.75	9.0		18.0
Release Voltage	Must Release By	VDC - Min.	0.5	1.0		2.0
Contact Ratings						
Switching Voltage	Max DC/Peak AC Resist.	Volts	7500		3500	
Switching Current	Max DC/Peak AC Resist.	Amps	3.0		3.0	
Carry Current	Max DC/Peak AC Resist.	Amps	5.0		5.0	
Contact Rating	Max DC/Peak AC Resist.	Watts	50		200	
Life Expectancy - Typical[2]	Signal Level 1.0V, 10mA	x 10^6 Ops.	100		100	
Static Contact Resistance (Max. Init.)	50mV, 10mA	Ω	0.080		0.200	
Relay Specifications						
Insulation Resistance (Min.)	Between all Isolated Pins at 100V, 25°C, 40% RH	Ω	10^{10}			
Capacitance - Typical	Across Open Contacts	pF	1.5			
Dielectric Strength (Min.)	Across Open Contacts Contacts to Coil	VDC/peak AC VDC/peak AC	10000 10000		7500 10000	
Operate Time - Including Bounce - Typical	At Nominal Coil Voltage, 30Hz, Square Wave	msec.	3.0			
Release Time - Typical		msec.	3.0			

General Notes:

1. Nom. Coil Voltages 5V, 12V, 24V are applicable for all relay models.
2. Consult factory for life expectancy at other switching loads.
3. Models 5502 and 5504 contain a bias magnet and are susceptible to magnetic interaction. Correct coil polarity must be observed where Pin #2 is positive (+) and Pin #3 is negative (-).
4. All 5500 series contain an internal magnetic shield.

Environmental Ratings:

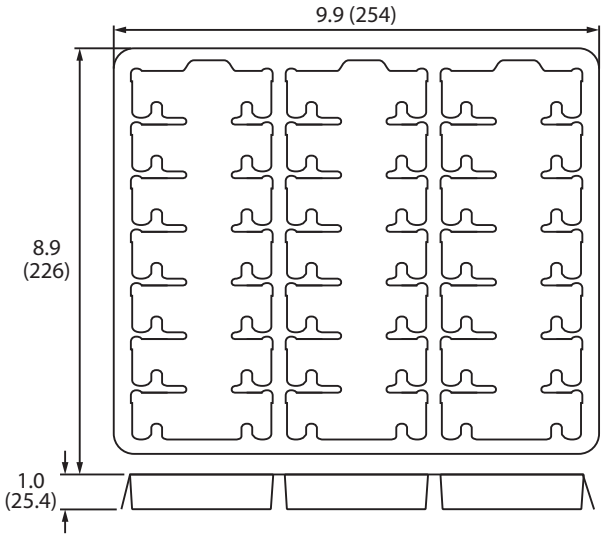
Storage Temp:-35°C to + 100°C; Operating Temp: -20°C to +85°C
Vibration: 20 G's to 2000 Hz; Shock: 50 G's
All electrical parameters measured at 25°C unless otherwise specified.

7 Package Information

Tray Packaging Dimensions

• 21 relays per tray

In Inches (Millimeters)



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

5500 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.

For more **technical and application information**, please refer to the following QR code:

Download App Note: **"Using a High-Voltage Reed Relay for a Pulsed Field Ablation (PFA) System"**, please refer to the following QR code:

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