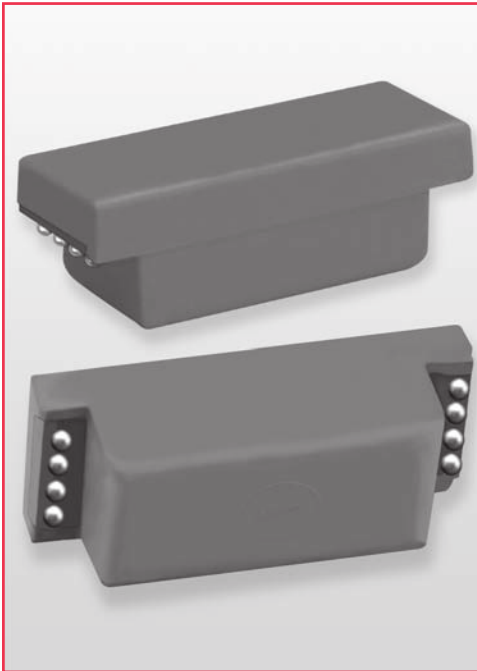


B10 RF Relays



Ball Grid Array Relays

Coto's Ball Grid Array (BGA) construction offers a breakthrough in reed relay performance. This patented technology¹ allows for shorter RF paths in a controlled 50 Ω environment to minimize signal attenuation. The designer is now able to switch or pass signals with wider bandwidth and faster rise time than alternative technologies. This is particularly important in Mixed Signal IC testers. BGA packaging allows relays to be integrated easily on boards designed for surface mount processing.

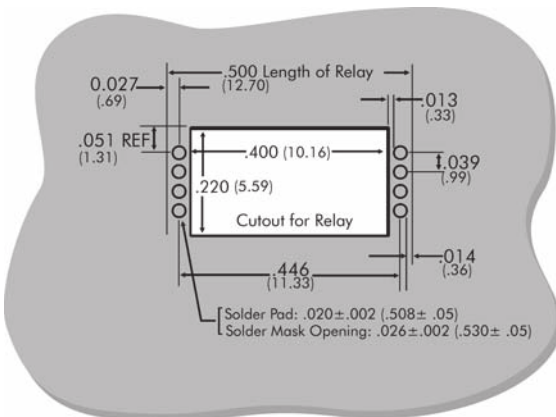
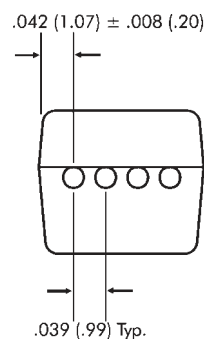
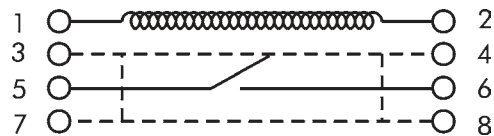
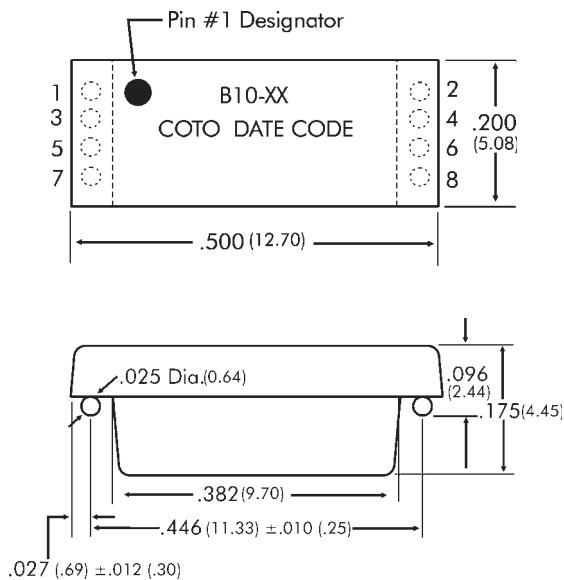
Series Features

- ◆ BGA Surface Mount
- ◆ Ability to pass GHz signals
- ◆ Rise time < 40pSec
- ◆ 50Ω Characteristic Impedance
- ◆ Low Capacitance
- ◆ Patented Design¹

Applications

- ◆ IC Testers
- ◆ In-Line Relay Testers
- ◆ Memory Testers
- ◆ Mixed Signal Testers
- ◆ High Bandpass Applications

*Dimensions in Inches
(Millimeters)*



Ordering Information

B10-XX	
Basic Model	Nominal Coil Voltage
B10 Independent version	03 = 3.3V
	05 = 5V

Notes:

¹ Protected by one or more of the following U.S. patents or patents pending: 6025768, 6052045, 6294971; and other foreign patents.

B10 RF Relays

Test Parameters	Conditions ^{1,2}	Min	B10	Max	Units	
			Typ			
Coil Resistance	3.3V Coil	49.5	55.0	60.5	Ω	
Nominal Voltage			5.0	4.0	Volts DC	
Must Operate Voltage					2.4	Volts DC
Must Release Voltage		0.4				Volts DC
Coil Resistance	5V Coil	135.0	150.0	165.0	Ω	
Nominal Voltage			5.0	6.0	Volts DC	
Must Operate Voltage				3.8	Volts DC	
Must Release Voltage		0.4			Volts DC	
Switching Voltage	Max DC/Peak AC			125	Volts	
Switching Current				0.25	Amps	
Carry Current (Continuous)	Switch and Shield Resistive Load			0.5	Amps	
Contact Rating (Resistive Load)				3.0	Watts	
Life Expectancy	Signal Switching ³		1000		x 10 ⁶ Ops	
	Resistive Load ³		1		x 10 ⁶ Ops	
	Other Load Conditions ³	Consult Factory				
Static Contact Resistance (initial)	0.05VDC / 10mA			0.125	Ω	
Dynamic Contact Resistance (initial)	0.5V / 50mA 100 Hz, 1.5 mSec			0.150	Ω	
Insulation Res	All Isolated Pins	10 ¹⁰	10 ¹²		Ω	
Capacitance	Across Contacts		0.2		pF	
Capacitance	Open Contact to Coil		0.5		pF	
Capacitance	Closed Contact to Coil		1		pF	
Dielectric Strength	Across Contacts	150			V (DC/Pk AC)	
	Contact to Coil	1500			V (DC/Pk AC)	
	Contact to Shield	1500			V (DC/Pk AC)	
Operate Time (including bounce)	Nominal Voltage coil drive @ 30 Hz, square wave		100	200	μSec	
Release Time (Si diode damped)			30	50	μSec	
RF Insertion Loss ⁴	-3 dB roll-off frequency	10.0			GHz	
Signal Rise Time (10% - 90%)	Corrected for measurement system response time			40	pSec	

NOTES:

¹All parameters specified per EIA/NARM standards for dry reed relays, # RS-421 and RS-436, if a suitable parametric standard exists.

²Unless otherwise noted, all parameters are specified at 25°C and 40% RH.

³Life expectancies based on characteristic life (63.2% failure) calculated from the 2-parameter Weibull distribution. Contact resistance >2.0Ω defines end of life.

⁴Frequency at which the difference between output and input signal amplitude exceeds -3dB. (Direct wired using 50Ω coaxial cable.)

ENVIRONMENTAL RATINGS:

Storage Temperature: -35°C to +100°C.

Operating Temperature: -20°C to +85°C.

Vibration: sinusoidal vibration with an amplitude of 10G over a 10Hz to 2000Hz frequency range shall not cause a closed channel activated at the nominal coil voltage to open, not an open channel to close.
Max Soldering Temperature: 226°C (438°F) max for 1 minute dwell time. Temperature measured at a relay ball termination.