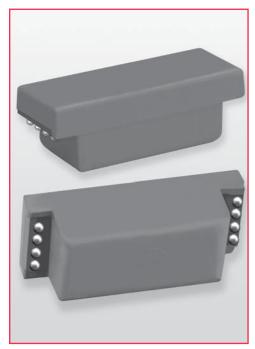
B10 RF Relays



Ball Grid Array Relays

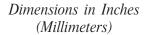
Coto's Ball Grid Array (BGA) construction offers a breakthrough in reed relay performance. This patented technology allows for shorter RF paths in a controlled 50 Ω environment to minimize signal attentuation. The designer is now able to switch or pass signals with wider bandwidth and faster rise time 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.

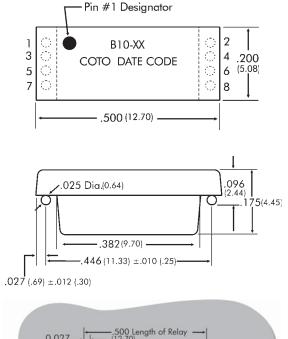
Series Features

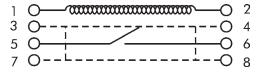
- BGA Surface Mount
- Ability to pass GHz signals
- ♦ Rise time < 40ρSec
- 50Ω Characteristic Impedance
- ◆ Low Capacitance
- ◆ Patented Design¹

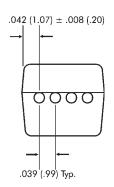
Applications

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

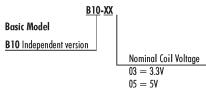








Ordering Information



Notes:

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

.051 REF!

220 (5.59)

Cutout for Relay

Solder Pad: .020±.002 (.508± .05)

der Mask Opening: .026±.002 (.530± .05)

B10 RF Relays

				B10		
Test Parameters		Conditions ^{1,2}	Min	Тур	Max	Units
Coil Resistance			49.5	55.0	60.5	Ω
Nominal Voltage		3.3V Coil		5.0	4.0	Volts DC
Must Operate Voltage					2.4	Volts DC
Must Release Voltage			0.4			Volts DC
Coil Resistance			135.0	150.0	165.0	Ω
Nominal Voltage		5V Coil		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			0.5	Amps
Contact Rating (Resistive Load)		Resistive Load			3.0	Watts
Life Expectancy Signa	1 Switching ³	1VDC / 10mA		1000		x 10 ⁶ Ops
Resis	tive Load ³	12VDC / 10mA		1		$x 10^6 \mathrm{Ops}$
	r 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 Is	olated Pins	100VDC	10^{-10}	10^{12}		Ω
Capacitance Acros	ss Contacts	Shield Guarding		0.2		pF
Capacitance Open	Contact to Coil	Shield Guarding		0.5		pF
Capacitance Close	ed Contact to Coil	Shield Guarding		1		pF
Acros	ss Contacts	$100\mu\mathrm{A}$	150			V (DC/Pk AC)
	act to Coil	$100\mu\mathrm{A}$	1500			V (DC/Pk AC)
Strength Conta	act to Shield	$100\mu\mathrm{A}$	1500			V (DC/Pk AC)
Operate Time (inclu	iding bounce)	Nominal Voltage coil drive @ 30 Hz,		100	200	μSec
Release Time (Si di	ode damped)	square wave		30	50	$\mu \mathrm{Sec}$
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.
- 3 Life expectancies based on characteristic life (63.2% failure) calculated from the 2-parameter Weibull distribution. Contact resistance >2.0 Ω 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.