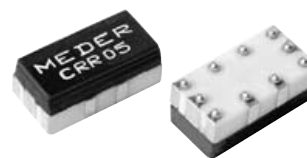


DESCRIPTION

The MEDER CRR Reed Relay Series is a low-profile device made with a ceramic case that exactly matches the thermal coefficient of expansion of the Reed Switch glass and the reed lead to eliminate any potential packaging stress. This Reed Relay is the smallest in the industry and switches into the billions of operations.

This Relay has 1 μ V typical thermal offset. Measuring only 8.6 mm x 4.4 mm x 3.4 mm, the leadless design eliminates skewing of leads and coplanarity issues. Insulation resistance typical to all points is $>10^{14}$ Ohms.



FEATURES

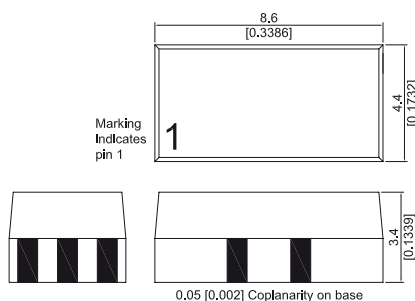
- Ceramic / thermoset molded package
- Patent pending
- Smallest in the industry
- No lead frame surface mount design eliminates skewing of leads and coplanarity issues
- Available with BGA
- Internal magnetic shield standard
- Very low profile
- Gold plated leads
- Low thermal offset typical 1 μ V
- TCE matching of all internal components
- Insulation resistance typical 10¹⁴ ohms
- 3 Volt option available

APPLICATIONS

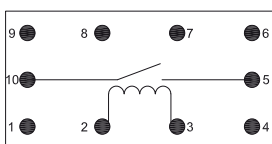
- Test and measurement
- Medical equipment
- Telecommunications

DIMENSIONS (Non-BGA)

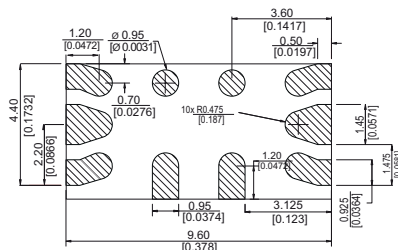
*All dimensions in mm (inch)



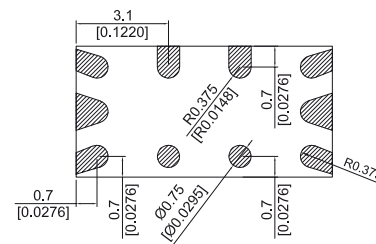
PIN OUT (Top View)



PCB LAYOUT



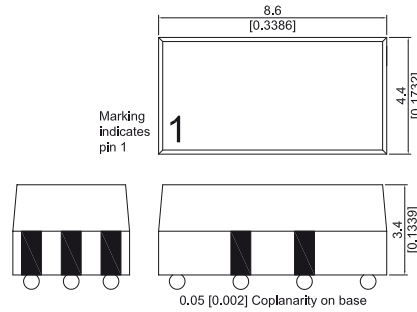
PAD LAYOUT (Bottom View)



SPST Reed Relays

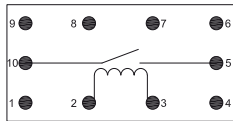
DIMENSIONS (with BGA)

*All dimensions in mm (inch)



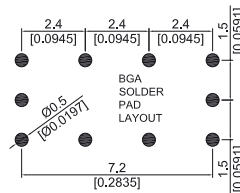
PIN OUT

(Top View)

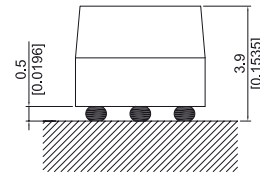


PAD / PCB LAYOUT

(Bottom View)



POST REFLOW



ORDER INFORMATION

Series	Nominal Voltage	Switch Form	Option
CRR	05-	1A	X
Options			S*

* Solder Ball Option (non-BGA part number is CRF05-1A)

Part Number Example

CRR05 - 1AS

05 is the nominal voltage
1A is the contact form
S is the solder ball option

COIL DATA

Contact Form	Switch Model	Coil Voltage		Coil Resistance			Pull-In Voltage	Drop-Out Voltage	Nominal Coil Power
		VDC	VDC	Ω	Ω	Ω	VDC	VDC	mW
All Data at 20 °C *		Nom.	Max.	Min.	Typ.	Max.	Max.	Min.	Typ.
		1A	80	5	7.5	135	150	165	3.5
1A	80	3	5	63	70	77	2.25	0.45	129
1B	80	5	7.5	117	130	143	3.75	0.75	192
1B	80	3	5	63	70	77	2.25	0.45	129

* The pull-in / drop-out voltages and coil resistance will change at the rate of 0,4% per °C.

RELAY DATA

All Data at 20° C	Switch Model → Contact Form →	Contact 80 Form A			
Contact Ratings	Conditions	Min.	Typ.	Max.	Units
Contact Ratings	Any DC combination of V & A not to exceed their individual max.'s.			10	W
Switching Voltage	DC or peak AC			170	V
Switching Current	DC or peak AC			0.5	A
Carry Current	DC or peak AC			0.5	A
Bulk Resistance	Through all plated material on substrate		200	350	mΩ
Static Contact Resistance	w/ 0.5 V & 50 mA		75	100	mΩ
Dynamic Contact Resistance	Measured w/ 0.5 V & 50mA		100	150	mΩ
Insulation Resistance (100 Volts applied)	Across Contact Contact to coil and shield	10 ¹⁰ 10 ¹³	10 ¹² 10 ¹⁴		Ω
Breakdown Voltage	Across Contact Coil to contact	210 1500			VDC
Operate Time incl. Bounce	Measured w/ nominal voltage			0.1	ms
Release Time	No coil suppression			0.02	ms
Capacitance (@ 10 kHz)	Across Contact Contact to coil and shield		0.1 0.7		pF
Life Expectancies					
Switching 5 V - 10mA	DC <10 pF stray cap.		1000		10 ⁶ Cycles
For other load requirements, see the life test section on P. 120.					
Environmental Data					
Shock Resistance	1/2 sine wave duration for 11 ms			50	g
Vibration Resistance	From 10 - 2000 Hz			10	g
Ambient Temperature	10 °C/ minute max. allowable	-40		125	°C
Storage Temperature	10 °C/ minute max. allowable	-55		125	°C
Soldering Temperature	5 sec. dwell			260	°C
Material of Case	Themoset / Ceramic				
Material of pads	Au plated				