

SPST Reed Relays

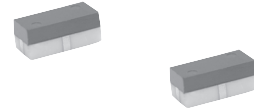
DESCRIPTION

The MEDER CRR Series Reed Relay 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.

Capable of withstanding reflow-soldering operations up to 260°C, the relay uses no internal solder and has 1 μV typical thermal offset. Measuring only 8.6 mm x 4.4 mm x 3.4 mm, the leadless design eliminates skewing of leads and co-planarity issues. Insulation resistance typical to all points is $>10^{14}$ Ohms.

APPLICATIONS

- Test and measurement
- Medical equipment
- Telecommunications

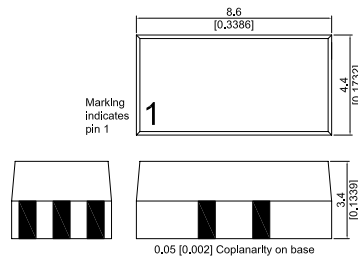


FEATURES

- Ceramic / thermoset molded package
- Patent pending
- Smallest in the industry
- No lead frame surface mount design eliminates skewing of leads and coplanarity issues
- No internal solder connections
- Available with BGA
- Internal magnetic shield standard
- Very low profile
- Gold plated leads
- Low thermal offset typical 1 μV
- TCE matching of all internal components
- Insulation resistance typical 10^{14} ohms
- 3 Volt option available

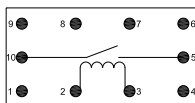
DIMENSIONS (Non-BGA)

*All dimensions in mm (inches)



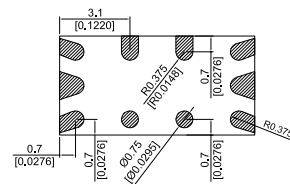
PIN OUT

(Top View)



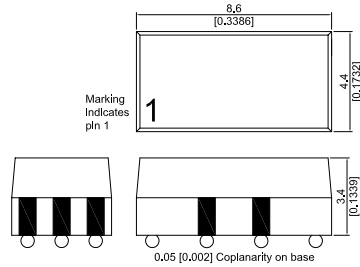
PAD LAYOUT

(Bottom View)



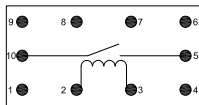
DIMENSIONS (with BGA)

*All dimensions in mm (inches)



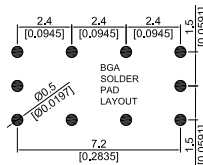
PIN OUT

(Top View)

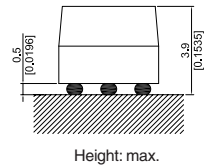


PAD LAYOUT

(Bottom View)



POST REFLOW



ORDER INFORMATION

SERIES	NOMINAL VOLTAGE	CONTACT FORM	OPTION
CRR	05-	1A	X
OPTIONS			S*
* Solder Ball Option (Non-BGA part number is CRR05-1A)			

Part Number Example

CRR05 - 1AS

05 is the nominal voltage

1A is the contact form

S is the solder ball option

CR COIL DATA

CONTACT FORM	SWITCH MODEL	COIL VOLTAGE		COIL RESISTANCE			PULL-IN VOLTAGE		DROP-OUT VOLTAGE		NOMINAL COIL POWER
All data at 20 °C *		VDC		Ω			VDC		VDC		mW
		Nom.	Max.	Min.	Typ.	Max.	Min.	Max.	Min.	Max.	Typ.
1A	80	5	7.5	135	150	165	0.85	3.75	0.75	3.65	167
* 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 Rating	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/ 0.5V & 50mA		75	100	mΩ
Dynamic Contact Resistance	Measured w/ 0.5V & 50mA		100	150	mΩ
Insulation Resistance (100 Volts applied)	Across contacts Contact to coil and shield	10 ¹⁰ 10 ¹³	10 ¹² 10 ¹⁴		Ω
Breakdown Voltage	Across contacts Contact to coil and shield	210 1500			VDC
Operate Time, incl. Bounce	Measured w/ 100% overdrive			0.1	ms
Release Time	No suppression			0.02	ms
Capacitance (@ 10 kHz)	Across contacts Contact to coil		0.1 0.7		pF
Life Expectancies					
Switching 5 Volts@ 10mA	DC only & <10 pF stray cap.		1000		10 ⁶ Cycles
For other load requirements please see our life test section located on page 151.					
Environmental Data					
Shock Resistance	1/2 sine wave duration 11ms			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	Thermoset / Ceramic				
Material of pads	Ag Plated				