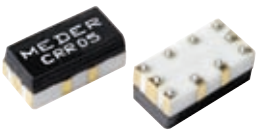
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SPST Reed Relays

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.



FEATURES

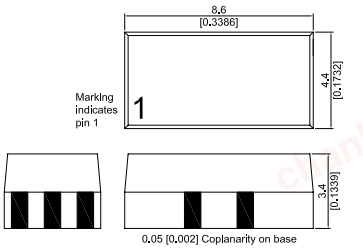
- Ceramic / thermoset molded package
- Patent pending
- Smallest in the industry
- No lead frame surface mount design eliminates skewing of leads and coplanarity issues
- No internal solder connections
- Available with BGA
- Internal magnetic shield standard
- Very low profile
- Gold plated leads
- Low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

APPLICATIONS

- Test and measurement
- Medical equipment
- Telecommunications

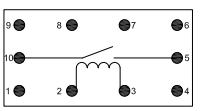
DIMENSIONS (Non-BGA)

*All dimensions in mm (inches)

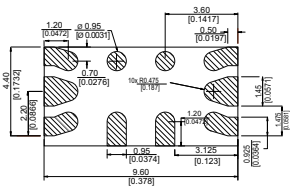


PIN OUT

(Top View)

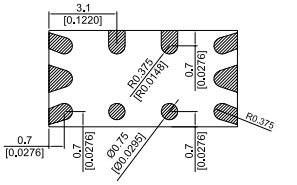


PCB LAYOUT



PAD LAYOUT

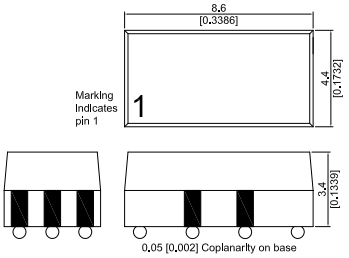
(Bottom View)



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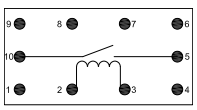
DIMENSIONS (with BGA)

*All dimensions in mm (inches)



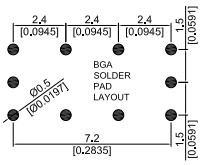
PIN OUT

(Top View)

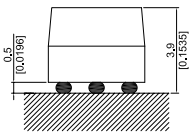


PAD / PCB LAYOUT

(Bottom View)



POST REFLOW



Height: max.

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	Nenn-leistung
All Data at 20 °C *		VDC		Ω			VDC	VDC	mW
		Nom.	Max.	Min.	Typ.	Max.	Max.	Min.	Typ.
1A	80	5	7.5	135	150	165	3.5	0.75	167
* The pull-in / drop-out voltages and coil resistance will change at the rate of 0,4% per °C.									

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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. 151.					
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	Ag plated				