

Instrumentation Grade Reed Relays**DESCRIPTION**

Today's high tech electronic fields continue to prosper with innovative new products using finer and finer integrations that drive components smaller and smaller. Whether the electronic components are mounted on PCBs, at the wafer level or the finished component level, testing these components will require reed relays.

RELAY SERIES

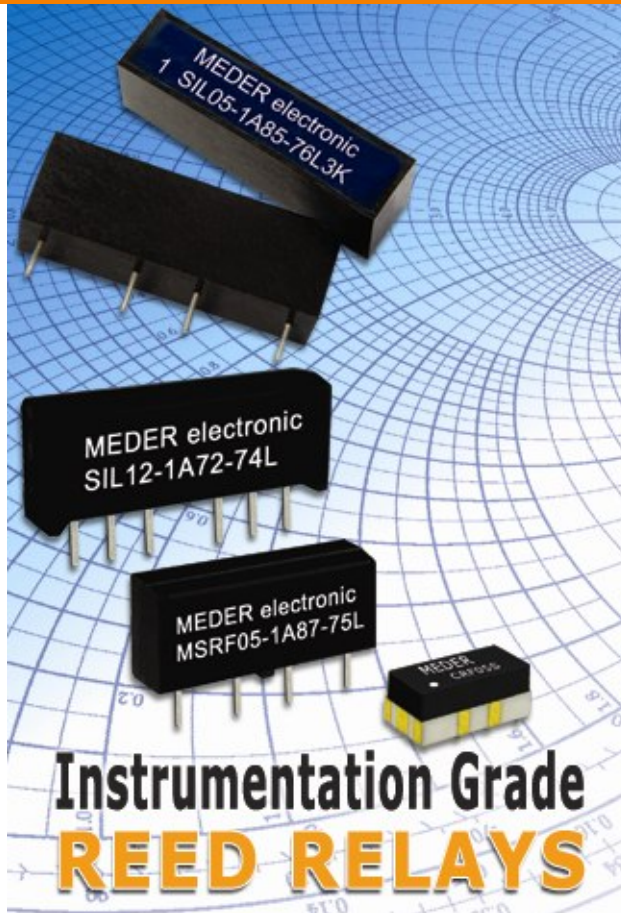
CRF Reed Relays
MS RF Reed Relays
SIL HV Reed Relays
SIL RF Reed Relays

APPLICATIONS

Analyzers
Automated test equipment
Battery powered
Cable testers
Functional PCB testers
High voltage testers
Industrial
Integrated circuit testers
Low voltage scanners
Medical equipment testers
Multimeters
RF transmitters
Wafer testers

MARKETS

Telecommunications,
Test & Measurement



*Switching technology offers
unparalleled features...*

FEATURES

- Ability to switch up to 1 Amp
- Carrying pulsed currents up to 5 Amps
- Input/output dielectric voltages up to 4k VDC
- Isolation greater than 1×10^{14} Ohms
- Long life with millions of reliable operations
- Low offset voltages < 1 microvolt
- Open state capacitance < 0.2 pF
- Switch signals from DC up to 7 GHz
- Switching voltages as high as 1k Volts
- Hermetically sealed switches with epoxy encapsulation
- Dynamically tested contacts

CR Series

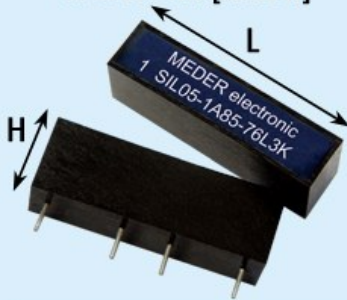
The CR series is our smallest and most versatile instrument grade reed relay series. The CRF Series has a flat insertion loss curve from DC up to 7 GHz, attained by keeping the signal path as short as possible and using an internal coaxial shield with a consistent 50 Ohm impedance path. Not only is it excellent with RF signals, but is also great for digital signals where the skew rates or effects on the rise time of fast digital pulses is less than 40 picoseconds through the relay.

The epoxy over-molded ceramic package is very rugged and has very good low thermal offset voltage capability because of its excellent heat conducting alumina substrate.

The ceramic substrate has leadless gold plated pads making it ideal for surface mounting with no worry of lead skewing or coplanarity issues.

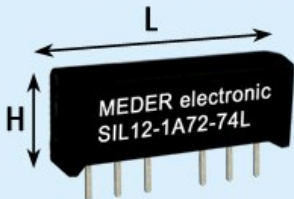
SILHV Series

L 24.13mm [0.950]
H 8.13mm [0.320]



SILRF Series

L 19.8mm [0.780]
H 7.80mm [0.307]



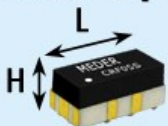
MSRF Series

L 15.20mm [0.598]
H 6.80mm [0.268]



CR Series

L 8.60mm [0.339]
H 3.40mm [0.134]



CR Series continued...

The CR series is only 3.4 mm high, making it ideal for very low profile environments. Because there is an internal magnetic shield, the relays can be stacked very close together without having to deal with magnetic coupling effects between relays. This is the case whether you are designing a two dimensional or three dimensional relay matrix. A BGA option is offered for additional PCB attach methods.

SIL RF Series

The SIL RF Series is configured in a standard SIL through-hole package with UL certification. Its internal coaxial shield offers a consistent 50 Ohm impedance path for excellent RF characteristics at an economical cost. The insertion loss is flat from DC to 1.5 GHz.

The SIL RF Series is capable of switching up to 15 watts and voltages up to 200 Volts while providing over 1500 Volts isolation, switch to coil. The contacts can switch up to 1.0 amp while maintaining a consistent 100 milli-ohm on state resistance. Since it is in a standard SIL package, its foot print is compatible with other sources. Built-in diode suppression is another option.

SIL High Voltage/High Current Series

The SIL High Voltage/High Current Series was designed primarily for use in automatic test systems, testing high power MOS-FETs. These rugged semi conductors have very high initial peak current capability. Having a reed relay that can carry high current pulses for hundreds of millions of operations is a critical requirement. This series can switch up to 1000 volts and carry up to 5 amps for up to 50 milli-second at a consistent repetition rate.

SIL High Voltage/High Current Series continued...

The relays can dielectrically hold off up to 4000 volts across the contacts as well as between contacts and coil. The relays have standard internal magnetic shields for close stacking matrices.

MS RF Series

The low cost MS series is a mini SIL principally designed for large, closely stacked matrices typically used in functional PCB test systems. These relays have a standard internal magnetic shield to support the close stacking and avoid any magnetic interference between relays.

Because of their relatively small size and short signal path, the relays are capable of carrying signals up to 1 GHz by grounding the start wire of the coil. MS relays are also capable of switching DC up to 10 Watts with voltages up to 200 volts. One amp of current can be switched with carry currents as high as 2 amps.

Summary

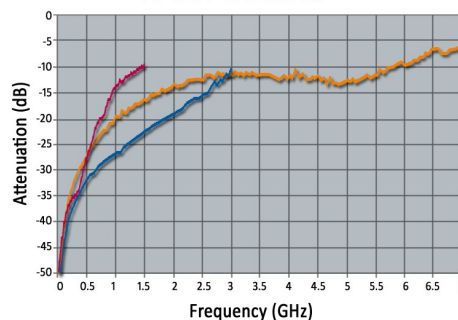
The specification chart below summarizes the primary parameters, while detailed specifications can be downloaded directly from our website:

www.meder.com

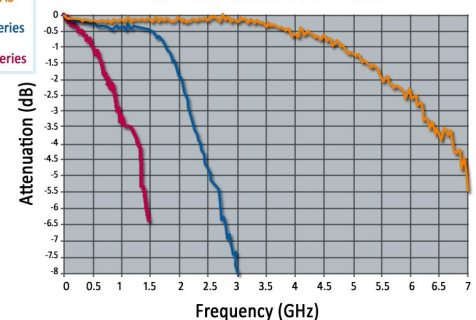
RELAY COMPARISON BETWEEN SERIES

All Data at 20° C		Relay Series					Unit
		CRF	CRR	SIL RF	SIL HV	MS RF	
Size Characteristics							
Height Profile		3.4	3.4	7.8	8.13	6.8	mm
		0.134	0.134	0.307	0.320	0.268	inches
Overall Length		8.6	8.6	19.8	24.13	15.2	mm
		0.339	0.339	0.780	0.950	0.598	inches
DC Parameters							
Rated Power (max.)	Any DC combination of V & A not to exceed their individual max.'s	10	10	15	10	10	W
Switching Voltage (max.)	DC or peak AC	170	170	200	1000	200	V
Switching Current (max.)	DC or peak AC	0.5	0.5	1.0	1.0	1.0	A
Carry Current (max.)	DC or peak AC	0.5	0.5	1.25	2.5	2.0	A
Pulsed Carry Current 5 ms (max.)	DC or peak AC	1.0	1.0	2.5	5.0	2.5	A
Insulation Resistance (typical)	RH 45%	10 ¹³	10 ¹³	10 ¹²	10 ¹²	10 ¹⁴	Ω
Breakdown Voltage (min.)	Across contacts	210	210	250	4000	225	VDC
Breakdown Voltage (min.)	Contacts to coil and/or shield	1500	1500	1500	4000	1500	VDC
Thermal Offset Voltage		1	1	15	20	15	μV
RF Characteristics							
Capacitance	Across contacts	0.2	0.2	0.2	0.2	0.2	pF
Capacitance	Contacts to coil and/or shield	0.6	0.6	1.5	1.8	1.4	pF
Insertion Loss* (see graphs)	-3dB drop off point	7	2 Λ	1.5	N/A	1.0 Λ	GHz
Isolation * (see graphs)	-3dB drop off point	10	15 Λ	14	N/A	18	GHz
VSWR	-3dB drop off point	1.6	1.4 Λ	1.5	N/A	1.35	GHz
Λ Denotes start wire grounded ** The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch. Consult factory if more detail is required.							

RF TEST- ISOLATION

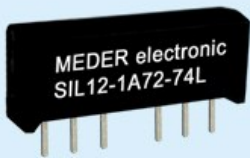


RF TEST- INSERTION LOSS



1.5GHz

SIL RF Series



1GHz

MS RF Series



7GHz

CR Series

