CRF Series Reed Relays

- **Features: Ultra miniature SMD relay for High Frequency up to 7GHz, High Insulation Resistance**
- **Ceramic/Thermoset Molded Package, Supplied in Tape & Reel, UL listed, BGA option**
- **For S-Parameters and RF Data, please contact your nearest sales office**
- **Applications: High Frequency Signals, Test and Measurement Systems, Telecommunications, Multiplexers**



Part Description: CRF00-0AS (250)

Nominal Voltage	Contact Qty & Form	Options	Packaging Tape & Reel
03, 05	1A	Empty = Non-BGA S = BGA (Ball Grid Array)	empty (standard) = 1000 pcs 250 (optional) = 250 pcs

Customer Options	Switch Model	Unit
Contact Data	80 (A Dry)	
Contact Material	Rhodium	
Rated Power (max.) Any DC combination of V&A not to exceed their individual max.'s	10	W
Switching Voltage (max.) DC or peak AC	170	V
Switching Current (max.) DC or peak AC	0.5	A
Carry Current (max.) DC or peak AC	0.5	A
Contact Resistance (max.) @ 0.5V & 10mA	200	mOhm
Breakdown Voltage (min.) According to EN60255-5	0.21	kVDC
Operating Time (max.) Including Bounce, Measured w/40% Pull-In Overdrive	0.6	ms
Release Time (max.) Measured without Coil Suppression	0.1	ms
Insulation Resistance (typ.) Rh<45%, 100V Test Voltage	10^9	Ohm
Capacitance (typ.) @ 10kHz across open Switch	0.2	pF

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Coil Data (at 20°C)		Coil Voltage (VDC)		Coil Resistance (Ohm)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Coil Power (mW)
Contact Form	Switch Model	Nominal	Max.	Typical (± 10 %)	Max.	Min.	Nominal
1A	80	3	5.0	70	2.25	0.45	129
		5	7.5	150	3.75	0.75	167
The Pull-In, Drop-Out Voltage and Coil Resistance will change at rate of 0.4% per °K							

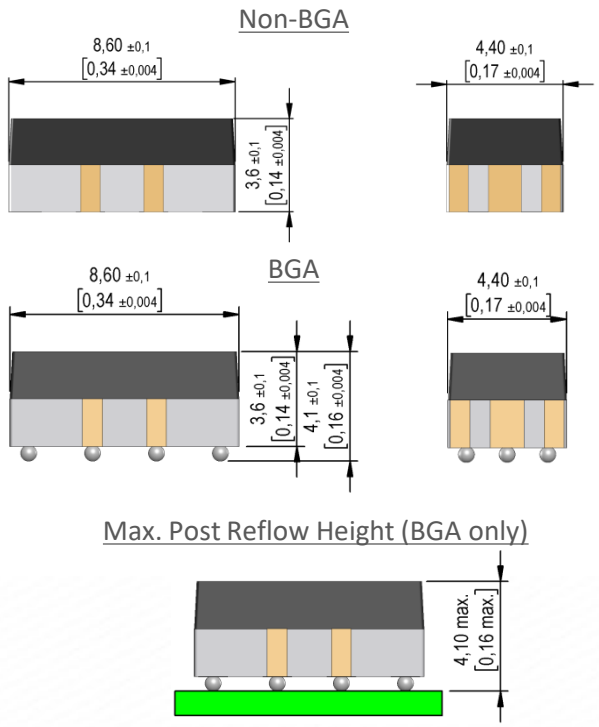
Relay Data (at 20°C)		Unit
Contact Bulk Resistance (typ./max.) Through all plated material on substrate	260 / 440	mOhm
Dielectric Strength Coil/Contact (min.) According to IEC 60255-27	1.5	kVDC
Insulation Resistance Coil/Contact (typ./min.) Rh<45%, 200V Test Voltage	10^{12} / 10^{13}	Ohm
Capacitance Coil/Contact (typ./max.) @ 10 kHz with Closed Switch	0.9 / 1.1	pF
Shock Resistance (max.) 1/2 sine wave duration 11ms	50	g
Vibration Resistance (max.) 10 – 2,000 Hz	20	g
Operating Temperature (max.) Surrounding of the relay's housing	-40 to 125	°C
Storage Temperature (max.) Surrounding of the relay's housing	-55 to 125	°C
Soldering Temperature (max.) 5 seconds max.	255	°C
Washability Aqueous rinsing suitable. Proper drying necessary.	Fully Sealed	

Handling & Assembly Instructions

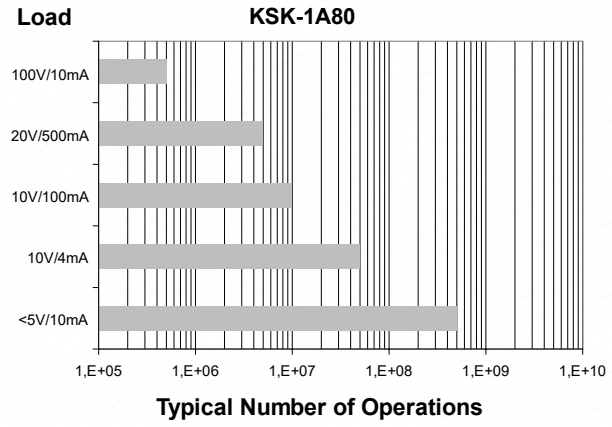
- Switching inductive and/or capacitive loads create voltage and/or current peaks, which may damage the relay. Protective circuits need to be used - see our website.
- External magnetic fields and magnetic effects, due to adjacent relays in high density matrices that may influence the relays' electrical characteristics, must be taken into consideration.
- Mechanical shock impacts, e.g. dropping the relays, may cause immediate or post-installation failure.
- Suppressing coil diode can have a negative influence on total number of switching cycles
- Reflow soldering: See the page 4. Recommendations given by the soldering paste manufacturer need to be considered as well as the temperature limits of other components/processes.

CRF Reed Relay Dimensions (in mm [inch])

Tolerances acc. to ISO 2768-m



Life Test Data (*Load increase reduces life expectancy of Reed Switches)



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CRF Series Reed Relays

Marking Example Top View)

CRF05-1A
Non-BGA

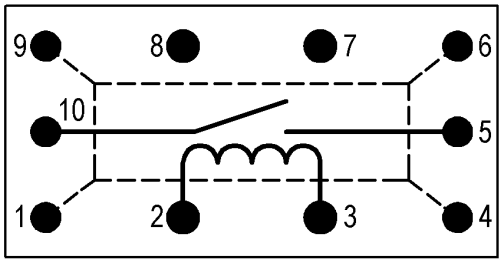


CRF05-1AS
BGA

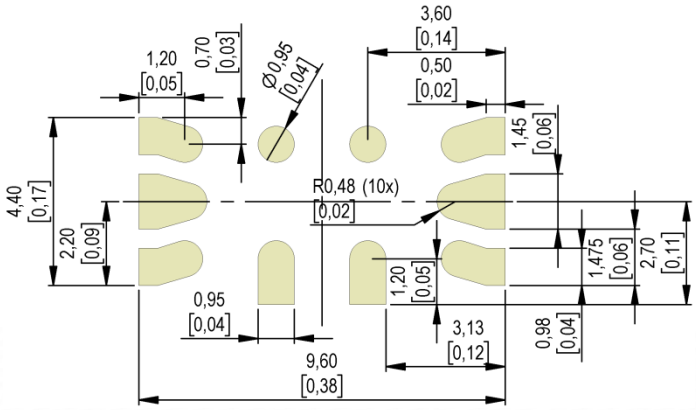


Date Code acc. to EN60062

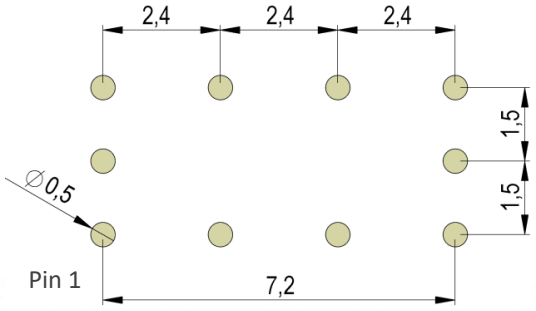
Pin-Out (Top View)



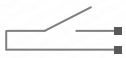
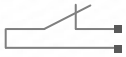
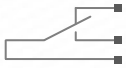
Non-BGA CRF00-1A
Recommended PCB Pad Layout Top View
(in mm [inch]) Tolerances acc. to ISO 2768-m



BGA Solder Balls CRF00-1AS
Recommended PCB Pad Layout Top View
(in mm [inch]) Tolerances acc. to ISO 2768-m



Glossary Contact Form

Form A	NO = Normally Open Contacts SPST = Single Pole Single Throw	
Form B	NC = Normally Closed Contacts SPST = Single Pole Single Throw	
Form C	Changeover SPDT = Single Pole Double Throw	

Glossary Option

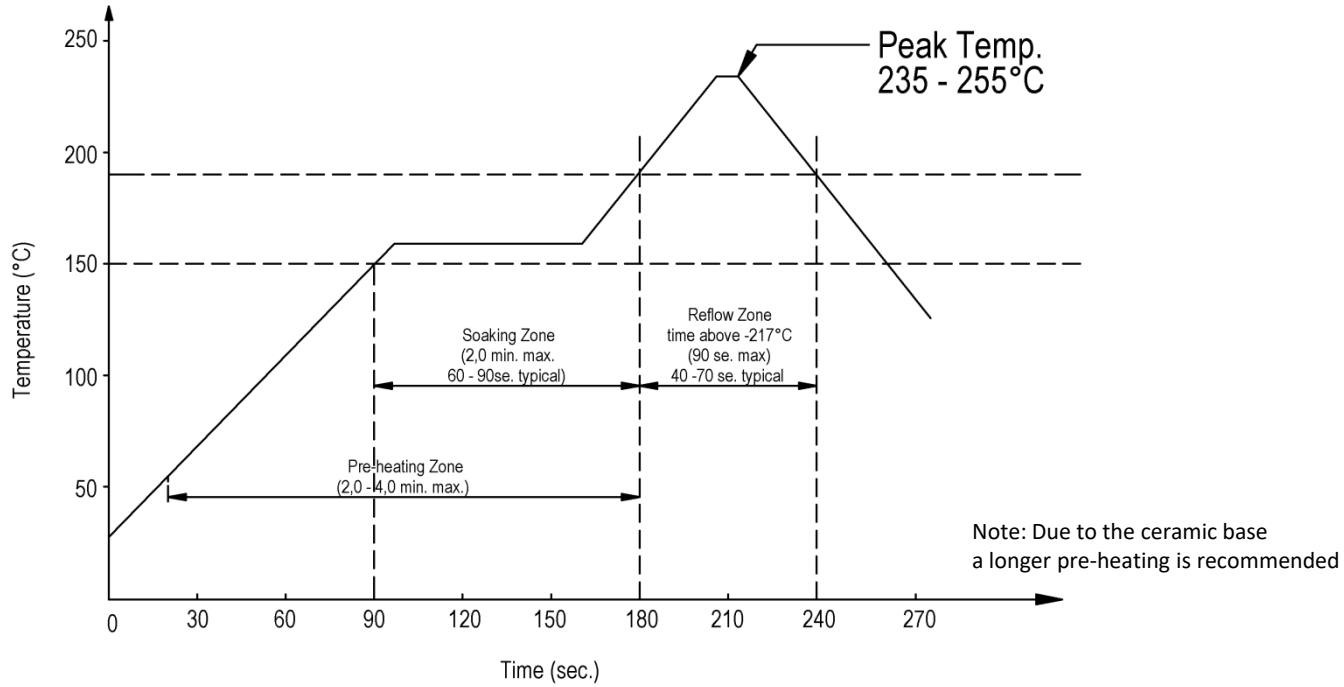
CRF Basic	with Coaxial & Magnetic Shield, without Diode
L	*Standard*
D	*with Diode*
M	*with Magnetic Shield, without Diode*
Q	*with Diode and Magnetic Shield*
HR	*High Resistance Coil*
CRF Relays are available only with “Basic” Option	

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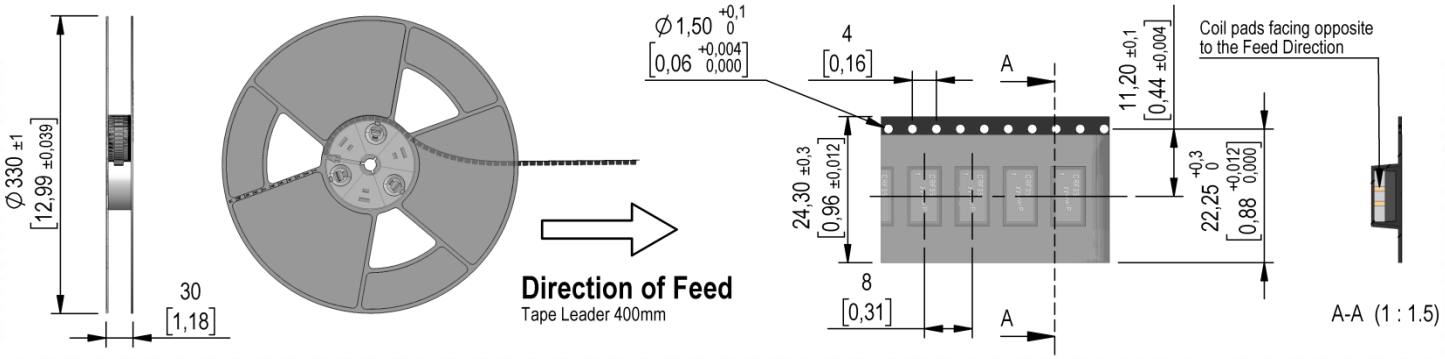
CRF Series Reed Relays

Recommended Reflow Lead-free Profile (acc. to JEDEC J-STD 020D.1)

For usage with tin Sn96.5/Ag3/Cu0.5



Relay Packaging Orientation (Tape&Reel per 1000 pcs. or 250 pcs.)



Please note: All technical specifications on this series datasheet refer to the standard product range. Modifications in the sense of technical progress are reserved. For general information only. For more specific information, please consult the product datasheet, available upon request.

This series datasheet could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These change will be incorporated in future revisions.

For deviating values, most current specifications and products please contact your nearest sales office.

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