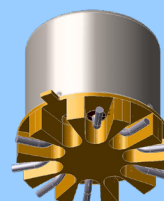


HIGH REPEATABILITY, DC-8 GHz/20Gbps TO-5 RELAYS, DPDT



SERIES	RELAY TYPE
SGRF312	Repeatable, Surface-Mount J-Lead RF relay

DESCRIPTION

The ultra miniature SGRF312 is designed to improve upon the SGRF300 relay's high frequency performance. The SGRF312 offers monotonic insertion loss to 8 GHz. This improvement in RF insertion loss over the frequency range, makes these relays highly suitable for use in attenuator and other RF circuits.

- High repeatability.
- Broader bandwidth.
- Metal enclosure for EMI shielding.
- High isolation between control and signal paths.
- Highly resistant to ESD.

CONSTRUCTION FEATURES

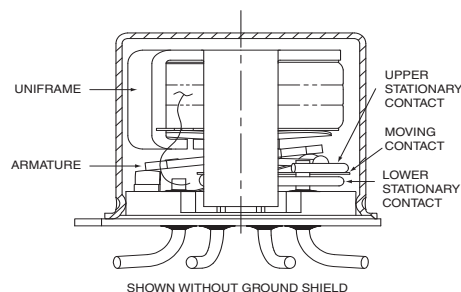
The following unique construction features and manufacturing techniques provide excellent resistance to environmental extremes and overall high reliability.

- Uni-frame motor design provides high magnetic efficiency and mechanical rigidity.
- Minimum mass components and welded construction provide maximum resistance to shock and vibration.
- Advanced cleaning techniques provide maximum assurance of internal cleanliness.
- Gold-plated precious metal alloy contacts ensure reliable switching.
- Hermetically sealed.

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS

Temperature (Ambient)	Storage	–65°C to +125°C
	Operating	–55°C to +85°C
Vibration (Note 1)		10 g's to 500 Hz
Shock (Note 1)		30 g's, 6ms half sine
Enclosure		Hermetically sealed
Weight		0.09 oz. (2.55g) max.

INTERNAL CONSTRUCTION



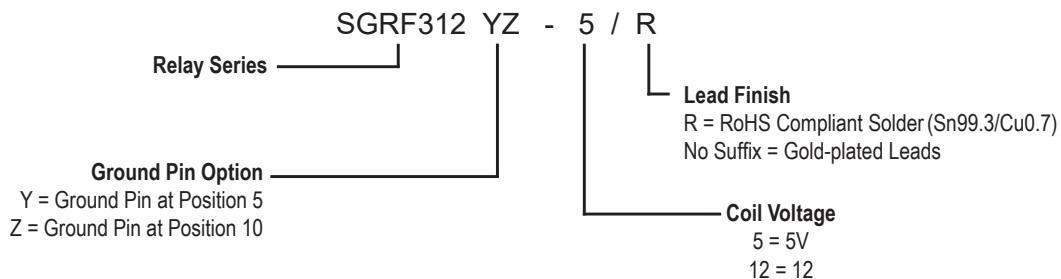
GENERAL ELECTRICAL SPECIFICATIONS (-65°C to +125°C unless otherwise noted)(Notes 2 & 3)

Contact Arrangement	2 Form C (DPDT)
Rated Duty	Continuous
Contact Resistance	0.15 Ω max.
Contact Load Rating	Resistive: 1Amp/28Vdc Low level: 10 to 50 μ A @ 10 to 50 mV
Contact Life Ratings	1,000,000 cycles (typical) at low level contact load
Coil Operating Power	450 mW typical at nominal rated voltage
Operate Time	4.0 ms max.
Release Time	3.0 ms max.
Intercontact Capacitance	0.4 pf typical
Insulation Resistance	1,000 M Ω min. between mutually isolated terminals
Dielectric Strength	350 (Vrms/60 Hz) @ atmospheric pressure

DETAILED ELECTRICAL SPECIFICATIONS (-65°C to +125°C unless otherwise noted)(Note 3)

BASE PART NUMBERS (SGRF312)	SGRF312-5	SGRF312-12
Coil Voltage, Nominal (Vdc)	5.0	12.0
Coil Resistance (Ohms \pm 20%)	50	390
Pick-up Voltage (Vdc max.)	3.6	9.0

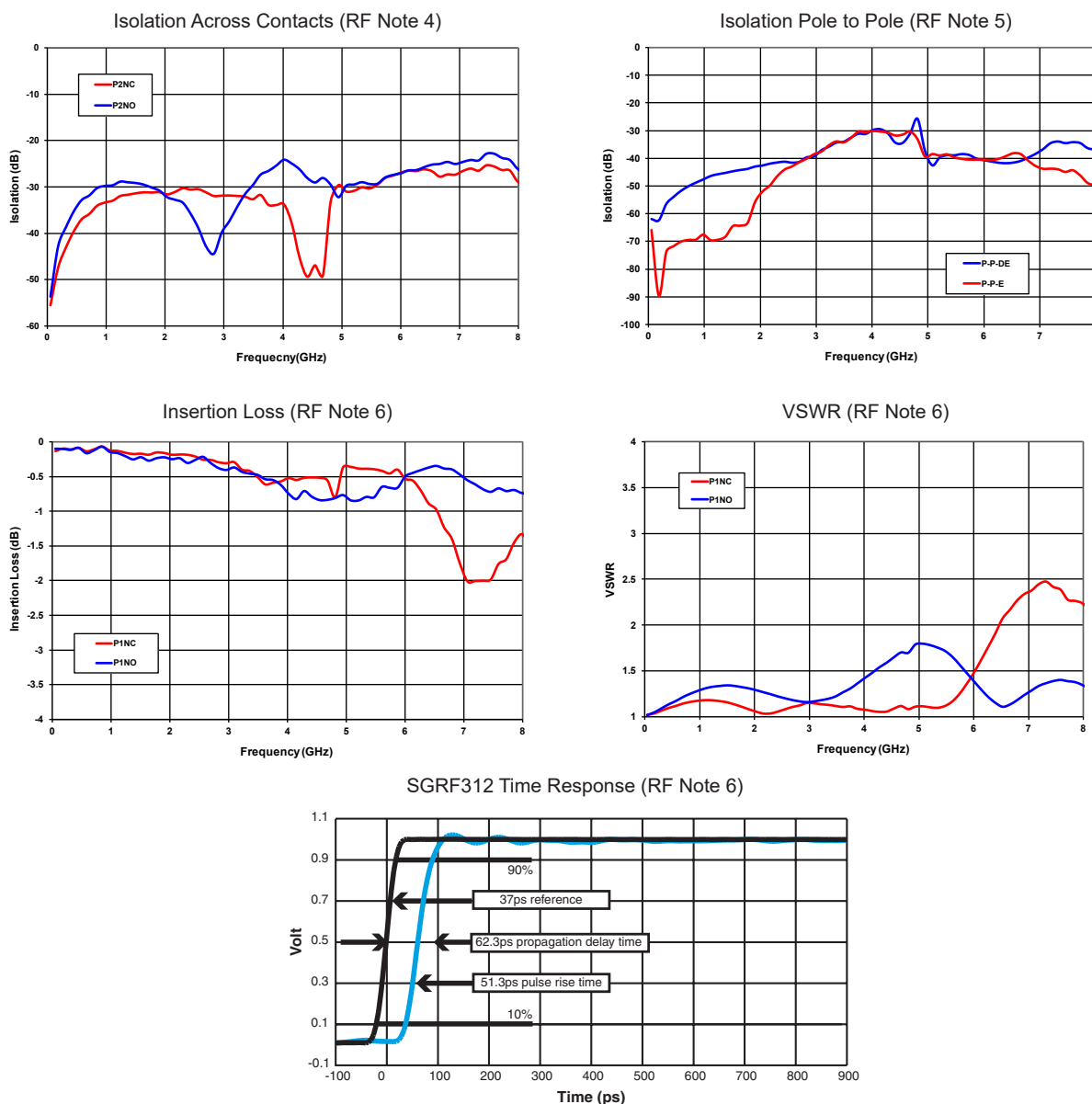
Part Numbering System (Notes 4 & 5)



NOTES

1. Relays will exhibit no contact chatter in excess of 10 μ s or transfer in excess of 1 μ s.
2. "Typical" characteristics are based on available data and are best estimates. No on-going verification tests are performed.
3. Unless otherwise specified, parameters are initial values.
4. The slash and characters appearing after the slash are not marked on the relay.
5. Unless otherwise specified, relays will be supplied with gold-plated leads.

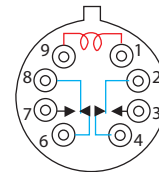
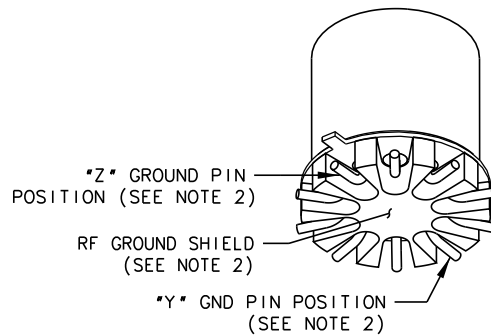
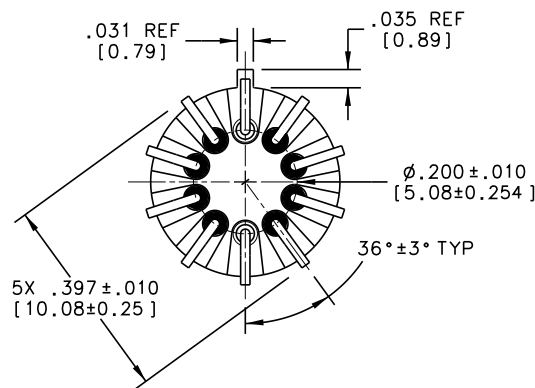
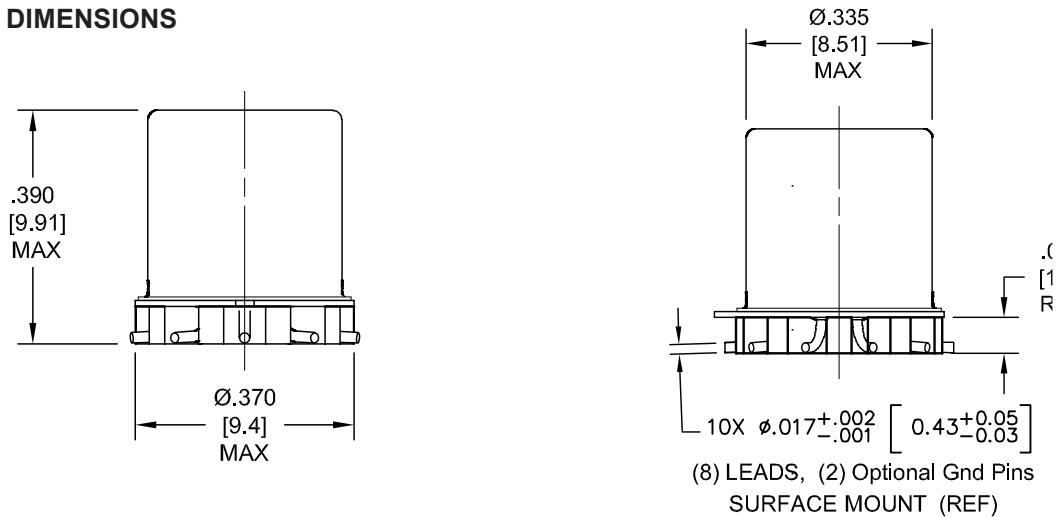
TYPICAL RF CHARACTERISTICS (See RF Notes)



RF NOTES

- Test conditions:
 - Fixture: .031" copper clad, reinforced PTFE, RT/duroid® 6002 with SMA connectors. (RT/duroid® is a registered trademark of Rogers Corporation.)
 - Room ambient temperature.
 - Terminals not tested were terminated with 50-ohm load.
 - Contact signal level: -10 dBm.
 - No. of test samples: 4.
- Data presented herein represents typical characteristics and is not intended for use as specification limits.
- Data is per pole, except for pole-to-pole data.
- Data is the average from readings taken on all open contacts.
- Data is the average from readings taken on poles with coil energized and de-energized.
- Data is the average from readings taken on all closed contacts.
- Test fixture effect de-embedded from frequency and time response data.

OUTLINE DIMENSIONS

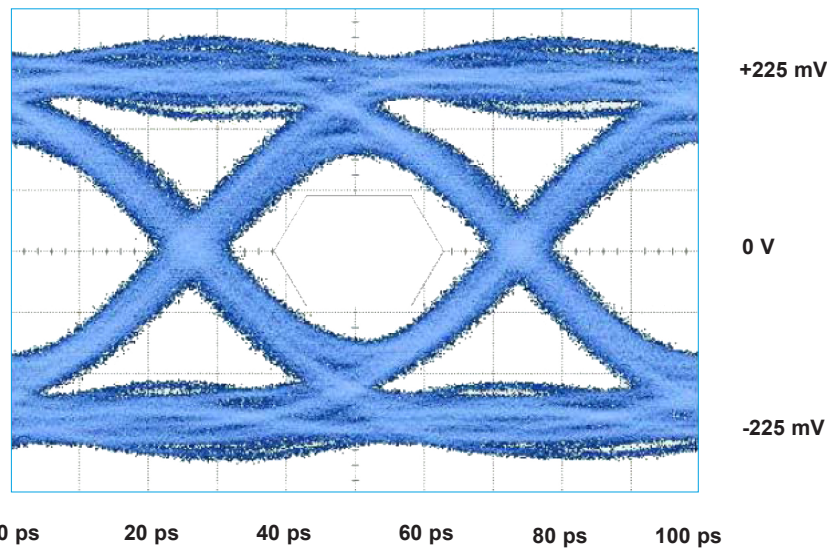


SCHEMATIC DIAGRAM
TERMINAL VIEW PIN NUMBERS
ARE FOR REFERENCE ONLY NOT
MARKED ON RELAYS

NOTES:

1. DIMENSIONS ARE IN INCHES, METRIC EQUIVALENTS SHOWN IN [].
2. POSITIONS 5 AND 10 ARE FOR UNINSULATED CASE GROUND OPTIONS.
3. NO PROTRUSION BELOW BOTTOM OF HEADER WHEN GROUND PINS ARE INSTALLED
4. TO ORDER THE CASE GROUND OPTION, AFTER THE SERIES DESIGNATOR, ADD "Y" TO THE PART NUMBER FOR POSITION 5 OR "Z" TO THE PART NUMBER FOR POSITION 10.

TYPICAL Single-Ended Signal Integrity Characteristics @ 20 Gbps



Bit Rate	Eye Height	Eye Width	Jitter _{P-P}
20 Gbps	144 mV	33.3 ps	12.67 ps