TELEDYNE RELAYS

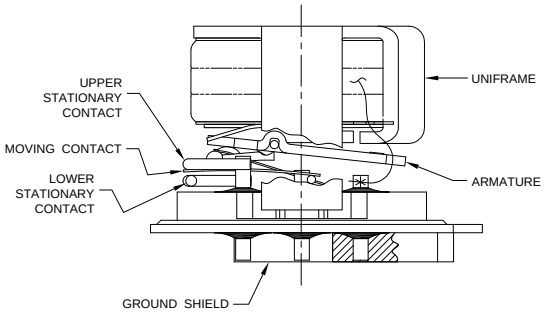
A Teledyne Technologies Company

SURFACE MOUNT
HIGH REPEATABILITY
NEW!
8 GHz
TO-5 RELAYS
SIGNAL INTEGRITY TO 12 Gbps
SPDT

SERIES
GRF311

SERIES DESIGNATION	RELAY TYPE
GRF311	Repeatable, RF TO-5 relay

INTERNAL CONSTRUCTION



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

PERFORMANCE FEATURES

The GRF311 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. The GRF311 features:

- 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.
- Solderable leads.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

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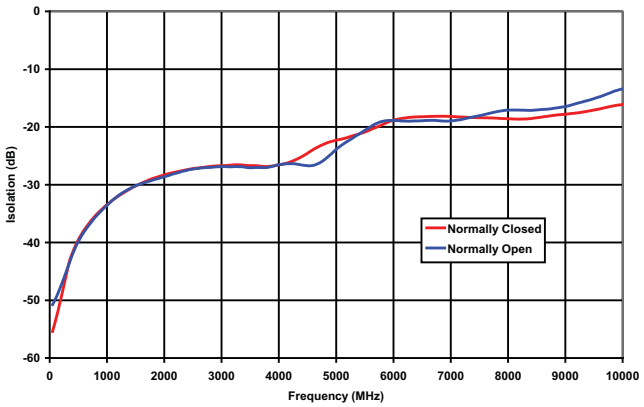
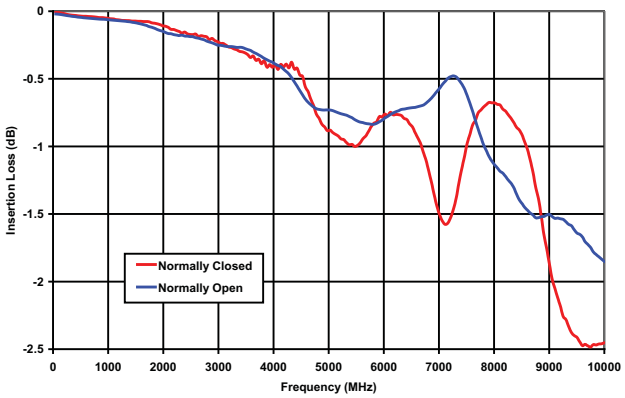
TYPICAL RF CHARACTERISTICS (See RF Notes)

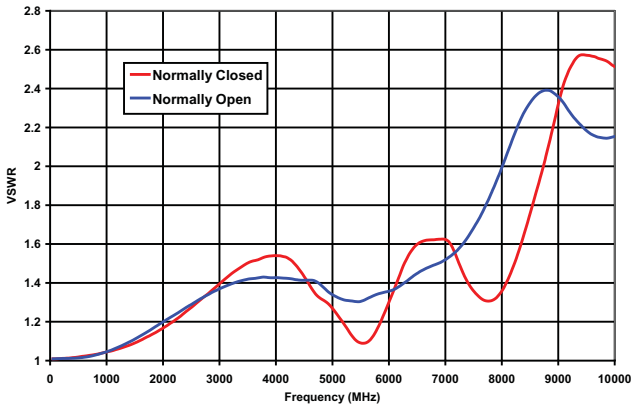
GRF311 Isolation Across Contacts (RF Note 3)



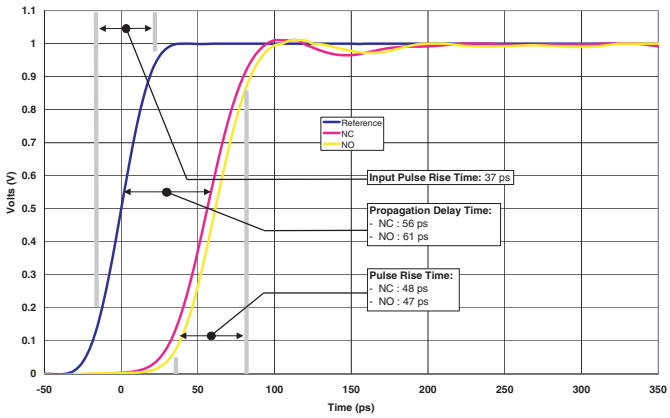
GRF311 Insertion Loss (RF Note 4)



GRF311 VSWR (RF Note 4)



Pulse Response Characteristic



RF NOTES

1. Test conditions:
   a. Fixture: .031" copper clad, reinforced PTFE, RT/duroid® 6002 with SMA connectors. (RT/duroid® is a registered trademark of Rogers Corporation.)
   b. RF ground shield is soldered to PCB RF ground plane.
   c. Room ambient temperature.
   d. Terminals not tested were terminated with 50-ohm load.
   e. Contact signal level: –10 dBm.
   f. No. of test samples: 2.
2. Data presented herein represents typical characteristics and is not intended for use as specification limits.
3. Data is the average from readings taken on all open contacts.
4. Data is the average from readings taken on all closed contacts.
5. Test fixture effect de-embedded from frequency and time response data.

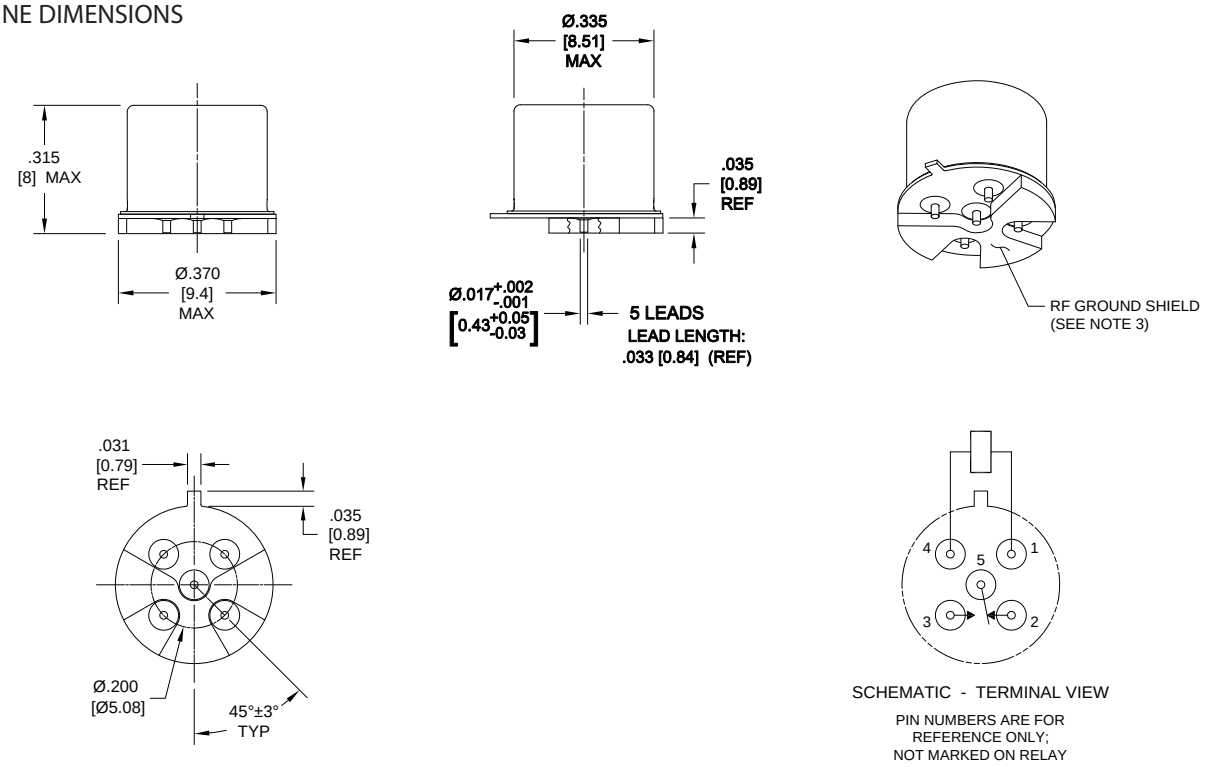
SERIES GRF311
GENERAL ELECTRICAL SPECIFICATIONS (@ 25 ºC unless otherwise noted)

Contact Arrangement	1 Form C (SPDT)
Rated Duty	Continuous
Contact Resistance	0.15 Ω max. initial (measured 1/8" from the header)
Contact Load Rating	Resistive: 1Amp/28Vdc Low level: 10 to 50 µA, 10 to 50 mV
Contact Life Ratings	10,000,000 cycles (typical) at low level
Coil Operating Power	350 mW typical @ 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 MΩ min. between mutually isolated terminals
Dielectric Strength	350 Vrms (60 Hz) @ atmospheric pressure

DETAILED ELECTRICAL SPECIFICATIONS (@25°C)

BASE PART NUMBERS	GRF311-5	GRF311-12	GRF311-26
Coil Voltage, Nominal (Vdc)	5.0	12.0	26.5
Coil Resistance (Ohms ±20%)	63	500	2000
Pick-up Voltage (Vdc max.)	3.6	9.0	18.0

OUTLINE DIMENSIONS



SCHEMATIC - TERMINAL VIEW

PIN NUMBERS ARE FOR REFERENCE ONLY; NOT MARKED ON RELAY

GENERAL NOTES

1. Relays will exhibit no contact chatter in excess of 10 µsec or transfer in excess of 1 µsec.
2. Relays may be subjected to 260 ºC peak solder reflow temperature, 1 minute, 3 passes.
3. Butt-lead ends are coplanar within .003" (0.08 mm).
4. Application notes available for PCB mounting information.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Teledyne Relays:

GRF311-5 GRF311-12 GRF311-26