



**TELEDYNE
RELAYS**

A Teledyne Technologies Company

**SURFACE MOUNT
HIGH REPEATABILITY**

8 GHz

TO-5 RELAYS

SIGNAL INTEGRITY TO 12 Gbps

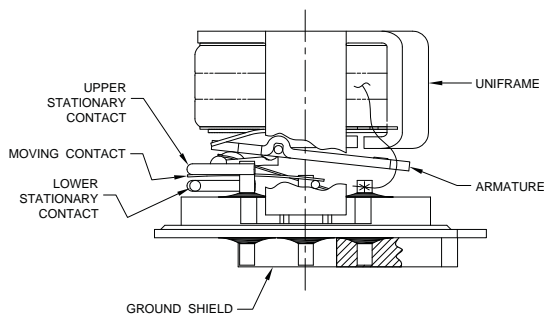
SPDT



**SERIES
GRF311**

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

INTERNAL CONSTRUCTION



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.

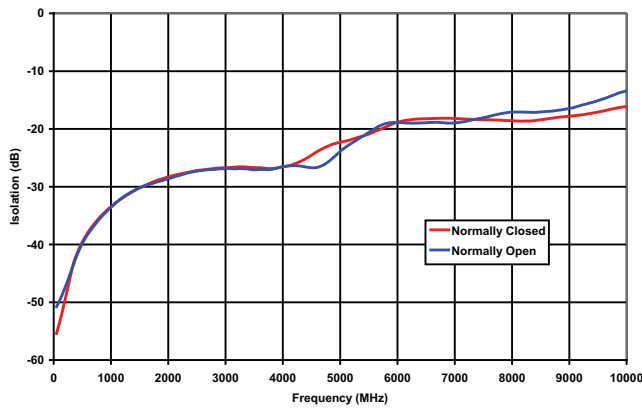
- Uni-frame motor design provides high magnetic efficiency and mechanical rigidity.
- Minimum mass components and welded construction provide maximum resistance to shock and vibration.
- Advanced cleaning techniques provide maximum assurance of internal cleanliness.
- Gold-plated precious metal alloy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

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS

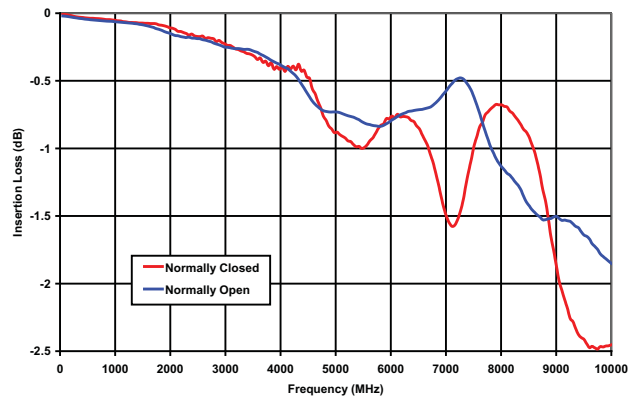
| | | |
|-------------------------------|-----------|--------------------------|
| Temperature (Ambient) | Storage | -65°C to +125°C |
| | Operating | -55°C to +85°C |
| Vibration (General Note 1) | | 10 g's to 500 Hz |
| Shock (General Note 1) | | 30 g's, 6ms half sine |
| Enclosure | | Hermetically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

SERIES GRF311
TYPICAL RF CHARACTERISTICS (See RF Notes)

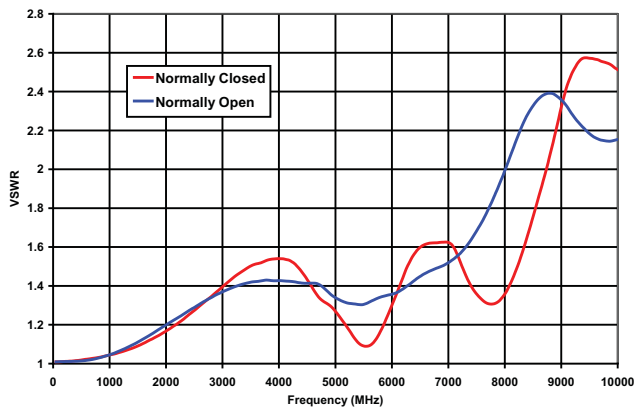
GRF311 Isolation Across Contacts (RF Note 3)



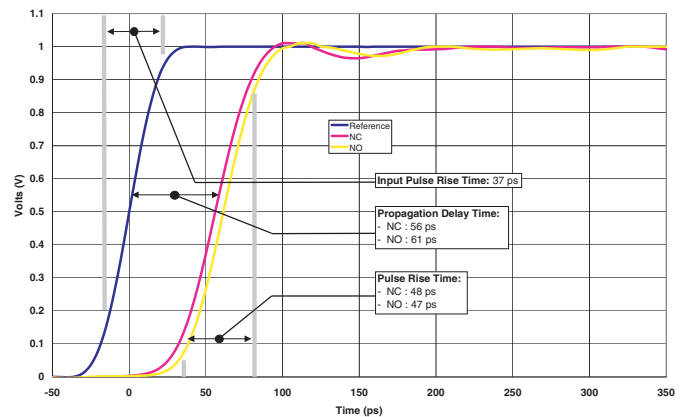
GRF311 Insertion Loss (RF Note 4)



GRF311 VSWR (RF Note 4)



Pulse Response Characteristic



RF NOTES

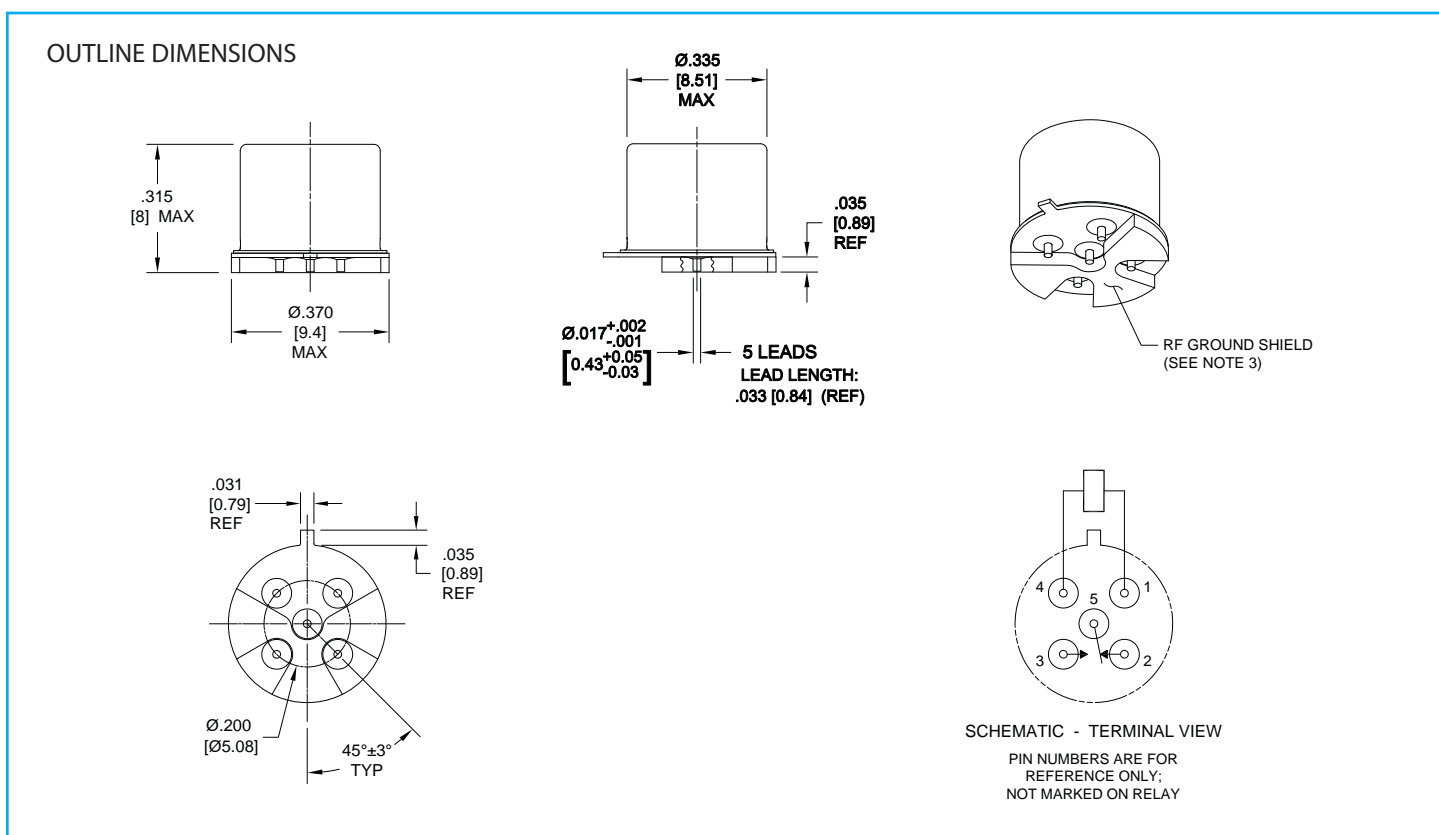
- Test conditions:
 - Fixture: .031" copper clad, reinforced PTFE, RT/duroid® 6002 with SMA connectors. (RT/duroid® is a registered trademark of Rogers Corporation.)
 - RF ground shield is soldered to PCB RF ground plane.
 - Room ambient temperature.
 - Terminals not tested were terminated with 50-ohm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

SERIES GRF311
 GENERAL ELECTRICAL SPECIFICATIONS (@ 25 °C 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 |



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 °C 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.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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