



**TELEDYNE
RELAYS**

A Teledyne Technologies Company

**SURFACE MOUNT
HIGH REPEATABILITY**

8 GHz

TO-5 RELAYS

SIGNAL INTEGRITY TO 12 Gbps

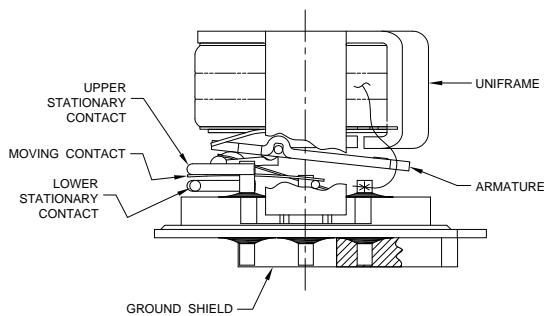
SPDT



**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.

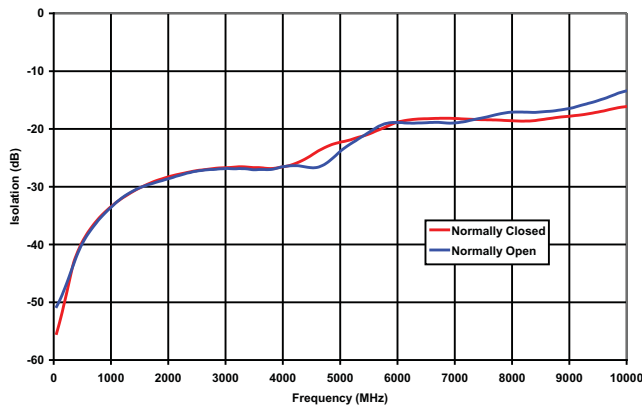
- Uni-frame motor design provides high magnetic efficiency and mechanical rigidity.
- Minimum mass components and welded construction provide maximum resistance to shock and vibration.
- Advanced cleaning techniques provide maximum assurance of internal cleanliness.
- Gold-plated precious metal alloy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

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS

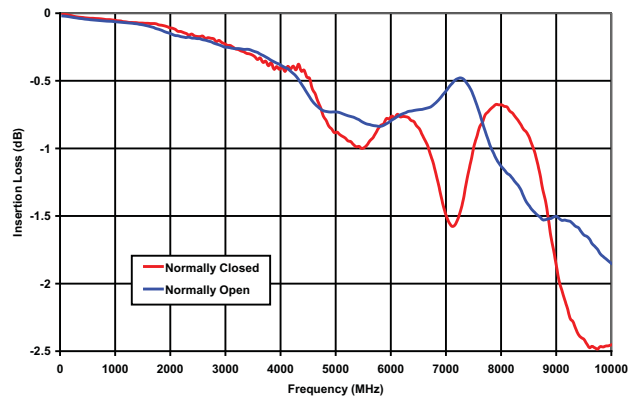
| | | |
|----------------------------|-----------|-----------------------|
| Temperature (Ambient) | Storage | -65°C to +125°C |
| | Operating | -55°C to +85°C |
| Vibration (General Note 1) | | 10 g's to 500 Hz |
| Shock (General Note 1) | | 30 g's, 6ms half sine |
| Enclosure | | Hermetically sealed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

SERIES GRF311
TYPICAL RF CHARACTERISTICS (See RF Notes)

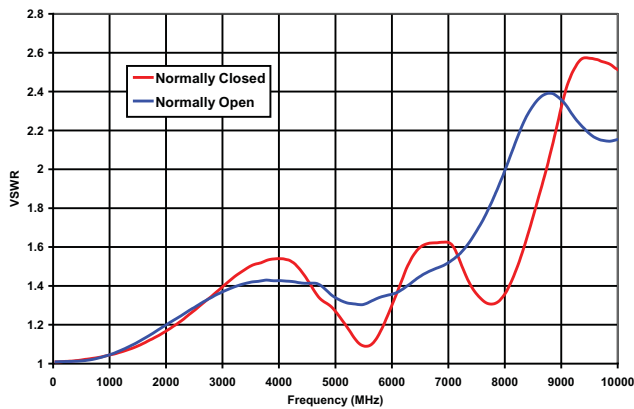
GRF311 Isolation Across Contacts (RF Note 3)



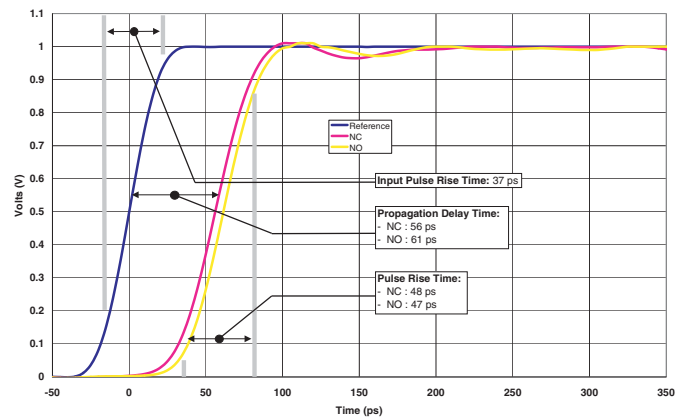
GRF311 Insertion Loss (RF Note 4)



GRF311 VSWR (RF Note 4)



Pulse Response Characteristic



RF NOTES

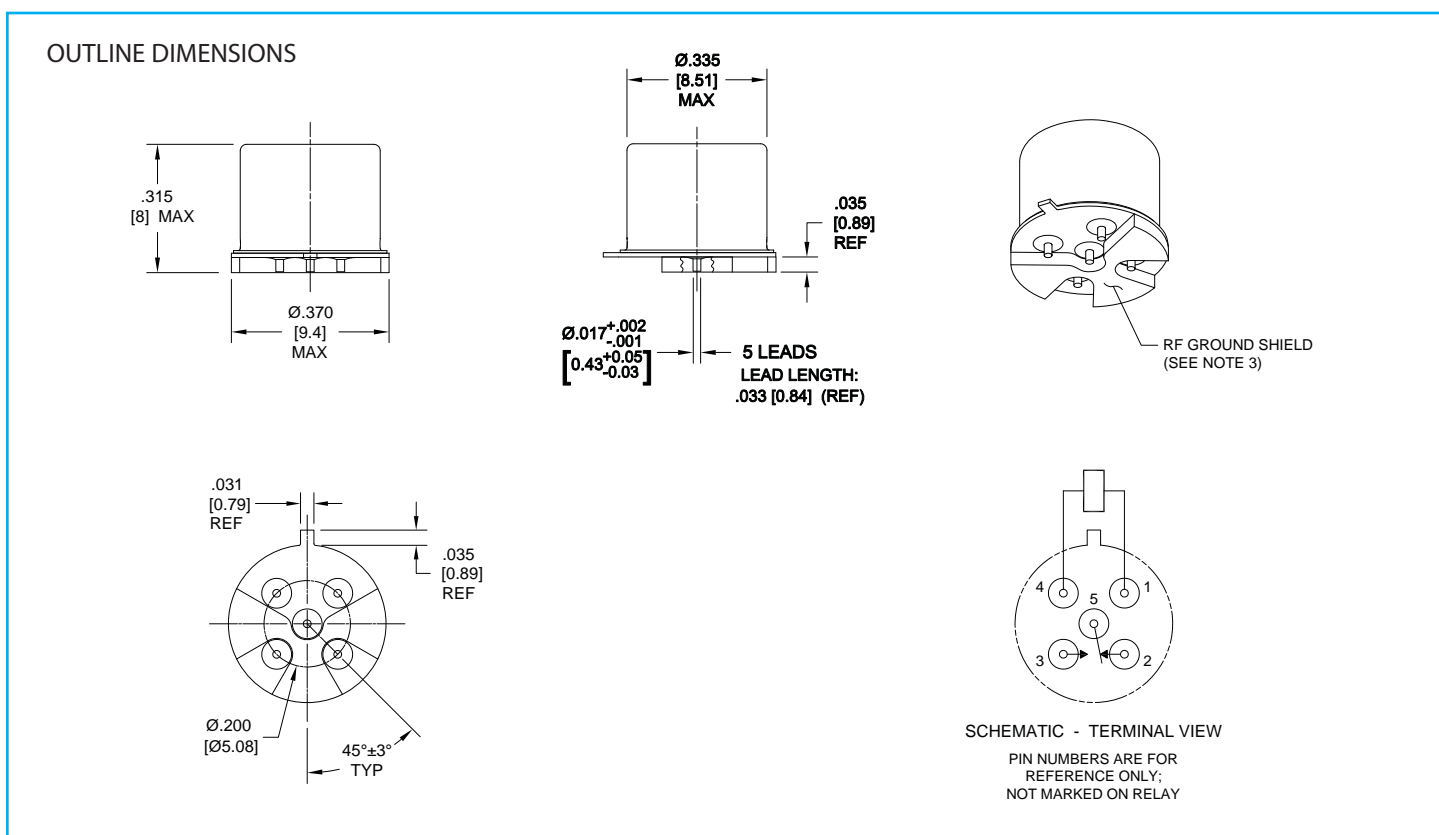
- Test conditions:
 - Fixture: .031" copper clad, reinforced PTFE, RT/duroid® 6002 with SMA connectors. (RT/duroid® is a registered trademark of Rogers Corporation.)
 - RF ground shield is soldered to PCB RF ground plane.
 - Room ambient temperature.
 - Terminals not tested were terminated with 50-ohm 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.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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