

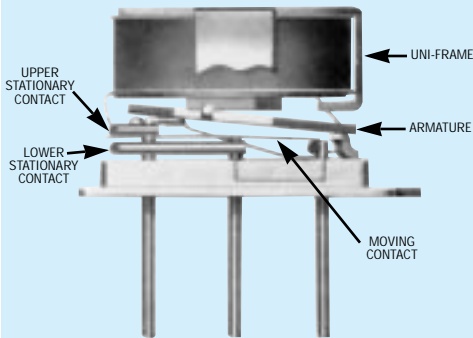
TELEDYNE RELAYS

**SERIES
172**

CENTIGRID® COMMERCIAL RELAY DPDT

SERIES DESIGNATION	RELAY TYPE
172	DPDT basic relay
172D	DPDT relay with internal diode for coil transient suppression

INTERNAL CONSTRUCTION



DESCRIPTION

The 172 Centigrid® relay is an ultraminiature, hermetically sealed, armature relay for commercial applications. Its low profile height (.280") and .100" grid spaced terminals, which precludes the need for spreader pads, makes it an ideal choice where extreme packaging density and/or close PC board spacing are required.

The basic concept and internal structure are similar to the Teledyne DPDT Centigrid® relay (114 Series). Unique construction features and manufacturing techniques provide overall high reliability and excellent resistance to environmental extremes:

- All welded construction.
- Unique uni-frame design providing high magnetic efficiency and mechanical rigidity.
- High force/mass ratios for resistance to shock and vibration.
- Advanced cleaning techniques provide maximum assurance of internal cleanliness.
- Precious metal alloy contact material with gold plating assures excellent high current and dry circuit switching capabilities.

The 172 Series utilizes an internal discrete silicon diode for coil suppression with electrical characteristics as specified herein.

By virtue of its inherently low intercontact capacitance and contact circuit losses, the 172 relay is an excellent subminiature RF switch for frequencies well into the UHF spectrum (see Figure 1). Applications include telecommunications, test instruments, mobile communications, attenuators, and automatic test equipment.

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS	
Temperature (Ambient)	-55°C to +85°C
Vibration	10 g's to 500 Hz (Note 3)
Shock	30 g's for 6 msec. (Note 3) half-sine
Enclosure	Hermetically sealed
Weight	0.15 oz (4.3 gms.) max.

SERIES 172

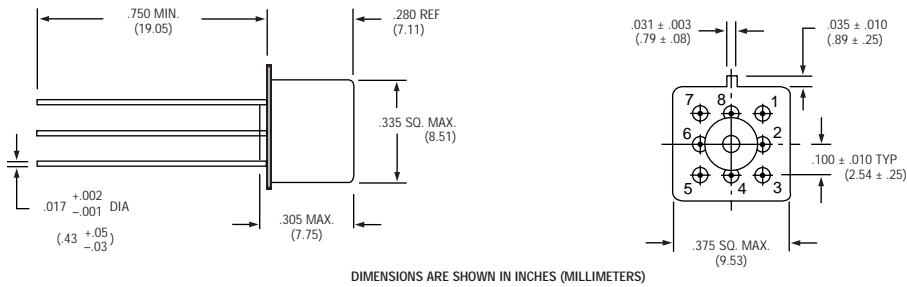
GENERAL ELECTRICAL SPECIFICATIONS (@ 25°C) (Notes 1 & 2)

Contact Arrangement	2 Form C (DPDT)	
Rated Duty	Continuous	
Contact Resistance (Note 4)	0.15 ohm max. before life; 0.3 ohm max. after life at 1A/28VDC, (measured 1/8" from header)	
Contact Load Ratings (DC) (See Fig. 2 for other DC resistive voltage/current ratings)	Resistive: 1 Amp/28VDC Inductive: 200 mA/28VDC (320 mH) Lamp: 100 mA/28VDC Low Level: 10 to 50 µA/10 to 50 mV	
Contact Life Ratings	5,000,000 cycles (typical) at low level 500,000 cycles (typical) at 0.5A/28VDC resistive 100,000 cycles min. at all other loads specified above	
Contact Overload Rating	2A/28VDC Resistive (100 cycles min.)	
Contact Carry Rating	Contact factory	
Operate Time	6.0 msec max. at nominal rated coil voltage	
Release Time	172: 3.0 msec max.	172D: 6.0 msec max.
Intercontact Capacitance	0.4 pf typical	
Insulation Resistance	1,000 megohms min. between mutually isolated terminals	
Dielectric Strength	Atmospheric pressure: 300 VRMS/60 Hz	
Diode P.I.V. 172D	60 VDC Min.	
Negative Coil Transient 172D	2.0 VDC Max.	

DETAILED ELECTRICAL SPECIFICATIONS (@ 25°C) (Note 2)

	GENERIC PART NUMBERS	S172-5 S172D-5	S172-12 S172D-12	S172-26 S172D-26
	Coil Voltage (VDC)	Nom.	5.0	12.0
	Max.	5.8	16.0	32.0
Coil Resistance (Ohms ± 20%)		64	400	1600
Pick-up Voltage (VDC, Max.) Pulse Operation		3.8	9.0	18.0
Coil Operating Power at Nominal Voltage (Milliwatts)		405	360	440

OUTLINE DIMENSIONS

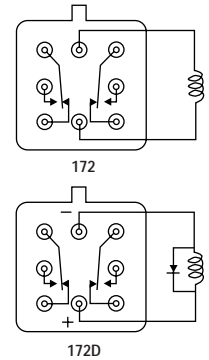


DIMENSIONS ARE SHOWN IN INCHES (MILLIMETERS)

*Unless otherwise specified, .280" (7.11) or .380" (9.65) height may be supplied. To order the lower profile exclusively, add /28 to the part number. e.g. 172-26/28 (NOTE: /28 will not be marked on the part).

**0.405 (10.29) max. for the higher profile relay.

SCHEMATIC DIAGRAM



SCHEMATICS ARE VIEWED FROM TERMINALS

PERFORMANCE CURVES (NOTE 1)

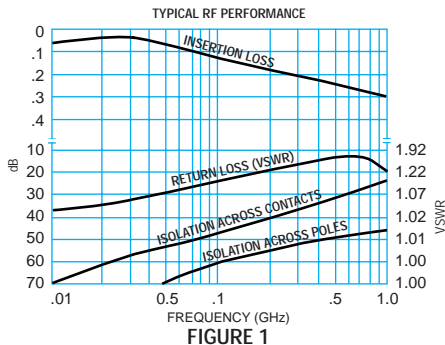


FIGURE 1

TYPICAL DC CONTACT RATING (RESISTIVE)

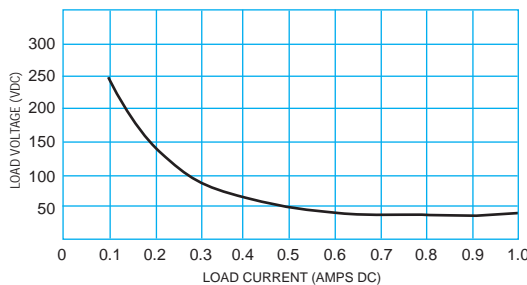


FIGURE 2

NOTES:

1. Characteristics shown as "typical" are based on available data and are best estimates. No on-going verification tests are performed.
2. Unless otherwise specified, parameters are initial values.
3. Contacts will exhibit no chatter in excess of 10 µsec or transfer in excess of 1 µsec.
4. Relays can be supplied with a spacer pad attached by adding M4 to the part number (e.g. 172M4-26).
 - Add 0.01 to contact resistance with spacer pad.
 - Pad Material: Polyester film.