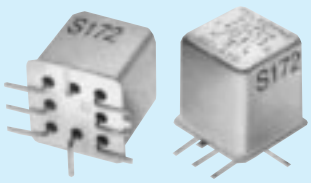


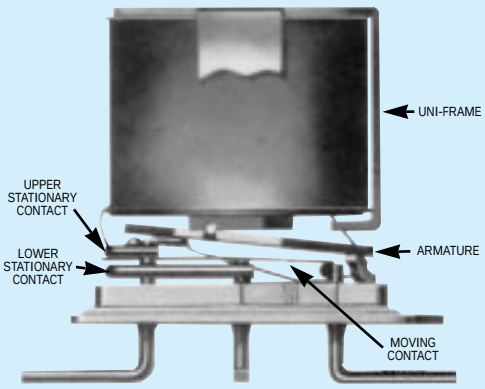
TELEDYNE RELAYS

CENTIGRID®
SURFACE MOUNT
COMMERCIAL RELAY
DPDT

SERIES
S172

SERIES DESIGNATION	RELAY TYPE
S172	**DPDT basic relay**
S172D	**DPDT relay with internal diode for coil transient suppression**

INTERNAL CONSTRUCTION



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	All welded, hermetically sealed
Weight	0.15 oz (4.3 gms.) max.
Reflow Temperature	260°C max. temp. 5 min. max. above 180°C

DESCRIPTION

The S172 Surface Mount Centigrid® relay is an ultraminiature, hermetically sealed, armature relay for commercial applications. Its low profile height (.470) 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 specially formed leads are pre-tinned to make the relays ideal for all types of surface mount solder reflow processes.

The basic design 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 S172 Series utilizes an internal discrete silicon diodes for coil suppression with electrical characteristics as specified herein.

By virtue of its inherently low intercontact capacitance and contact circuit losses, the S172 relay is an excellent subminiature RF switch for frequency ranges well into the UHF spectrum (see Figure 1). Applications include telecommunications, test instruments, mobile communications, attenuators, and automatic test equipment.

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

Contact Arrangement	2 Form C (DPDT)	
Rated Duty	Continuous	
Contact Resistance	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	S172: 3.0 msec max.	S172D: 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. S172D	60 VDC Min.	
Negative Coil Transient S172D	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	26.5
	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

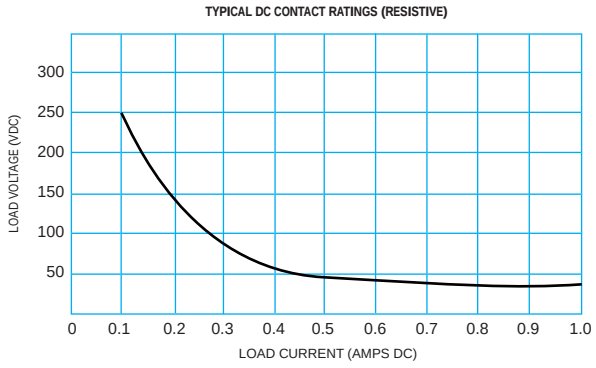
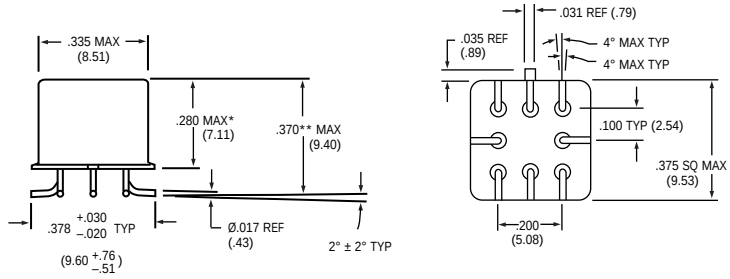


FIGURE 2

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. Relay contacts will exhibit no chatter in excess of 10 µsec or transfer in excess of 1 µsec.
4. Position of leads as they emerge from relay base.
5. Leads will fit noted pad layout with no overhang.
6. Lead ends are coplanar within .008" wide tolerance zone.
7. Terminals coated with SN60 or SN63 solder per QQ-S-571. Base material exposed at sheared end of leads.

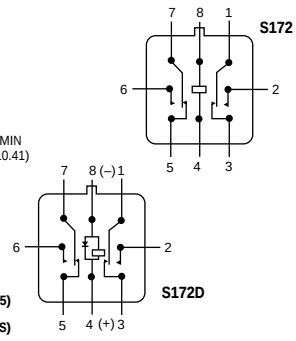
OUTLINE DIMENSIONS AND RECOMMENDED PAD LAYOUT (Notes 4, 5, 6 & 7)



RECOMMENDED PAD LAYOUT (NOTE 5)

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)

TERMINAL LOCATIONS AND SCHEMATIC DIAGRAMS



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

** Max. overall height for the higher profile S172 will be .470 (11.94)