

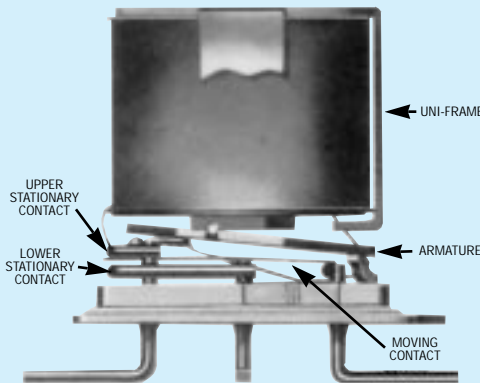
# TELEDYNE RELAYS

## SERIES S172

### CENTIGRID® SURFACE MOUNT COMMERCIAL RELAY DPDT

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

#### INTERNAL CONSTRUCTION



#### DESCRIPTION

The S172 Surface Mount Centigrad® 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 Centigrad® 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.

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

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

