

TELEDYNE RELAYS

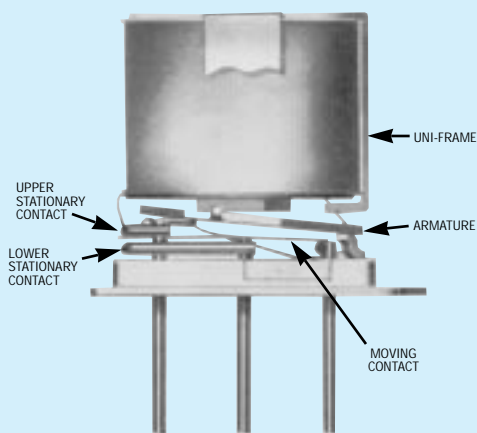
CENTIGRID® ESTABLISHED RELIABILITY RELAY SENSITIVE DPDT

SERIES
134



SERIES DESIGNATION	RELAY TYPE
134	DPDT basic relay
134D	DPDT relay with internal diode for coil transient suppression
134DD	DPDT relay with internal diodes for coil transient suppression and polarity reversal protection

INTERNAL CONSTRUCTION



DESCRIPTION

The sensitive Centigrid® relay retains the same features as the standard Centigrid® with only a minimal increase in profile height (.375 in.). It provides a .100 in. grid spaced terminal pattern which precludes the need for spreader pads and, together with the low profile, is ideal for applications where high packaging density is important.

The following unique construction features and manufacturing techniques provide excellent resistance to environmental extremes and overall high reliability:

- 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 134D and 134DD Series utilizes internal discrete silicon diodes for coil suppression and polarity reversal protection.

The sensitive Centigrid® relay features exceptionally high coil resistance thus providing for extremely low operating power (200 mw typical). The advantages of reduced heat dissipation and power supply demands are obvious.

By virtue of its inherently low intercontact capacitance and contact circuit losses, the 134 relay has shown itself to be an excellent ultraminiature RF switch for frequency ranges well into the UHF spectrum. A typical RF application for the Centigrid® relay is in hand held radio transceivers, wherein the combined features of good RF performance, small size, low coil power dissipation and high reliability make it a preferred method of Transmit-Receive switching (see Figure 1).

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS

Temperature (Ambient)	-65°C to + 125°C
Vibration	30 g's to 3000 Hz (Note 1)
Shock	75 g's for 6 msec. (Note 1) half-sine
Acceleration	50 g's (Note 1)
Enclosure	All welded, hermetically sealed
Weight	0.15 oz (4.3 gms.) max.

SERIES 134

GENERAL ELECTRICAL SPECIFICATIONS (-65°C to +125°C unless otherwise noted) (Notes 2 & 7)

Contact Arrangement	2 Form C (DPDT)	
Rated Duty	Continuous	
Contact Resistance	0.1 ohms max. before life; 0.2 ohms max. after life at 1A/28VDC, (measured 1/8" from header)	
Contact Load Rating (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 μ A/10 to 50 mV	
Contact Load Ratings (AC)	Resistive: 250 mA/115VAC, 60 and 400Hz (Case not grounded) 100 mA/115VAC, 60 and 400Hz (Case grounded)	
Contact Life Ratings	10,000,000 cycles (typical) at low level 1,000,000 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	
Coil Operating Power	200 milliwatts typical at nominal rated voltage @ 25°C	
Operate Time	4.0 msec max. at nominal rated coil voltage	
Release Time	134 Series: 2.0 msec max.	134D, 134DD Series: 7.5 msec max.
Contact Bounce	1.5 msec max.	
Intercontact Capacitance	0.4 pf typical	
Insulation Resistance	10,000 megohms min. between mutually isolated terminals	
Dielectric Strength	Atmospheric pressure: 500 VRMS/60 Hz	70,000 ft.: 125 VRMS/60Hz
Diode P.I.V. (134D, 134DD)	100 VDC min.	
Negative Coil Transient (134D,	1.0 VDC max.	

DETAILED ELECTRICAL SPECIFICATIONS (-65°C to +125°C unless otherwise noted) (Note 7)

BASE PART NUMBERS (See Note 9 for full P/N Example)			134-5	134-6	134-9	134-12	134-18	134-26
			134D-5 134DD-5	134D-6 134DD-6	134D-9 134DD-9	134D-12 134DD-12	134D-18 134DD-18	134D-26 134DD-26
Coil Voltage (VDC)	Nom.		5.0	6.0	9.0	12.0	18.0	26.5
	Max.		7.5	10.0	15.0	20.0	30.0	40.0
Coil Resistance (Ohms \pm 10% @ 25°C)	134, 134D		100	200	400	800	1600	3200
	134DD (Note 3)		64	125	400	800	1600	3200
Coil Current (mADC @ 25°C) (134DD Series)	Min.		56.8	36.3	18.1	12.5	9.6	7.2
	Max.		78.1	48.9	23.6	16.0	12.2	9.0
Pick-up Voltage (VDC, Max.)	134, 134D		3.5	4.5	6.8	9.0	13.5	18.0
	134DD		3.7	4.8	8.0	11.0	14.5	19.0
Drop-out Voltage (VDC)	134 & 134D	Min.	0.12	0.18	0.35	0.41	0.59	0.89
		Max.	2.5	3.2	4.9	6.5	10.0	13.0
	134DD	Min.	0.7	0.8	0.9	1.0	1.1	1.3
		Max.	2.6	3.0	4.5	5.8	9.0	13.0

PERFORMANCE CURVES (NOTE 2)

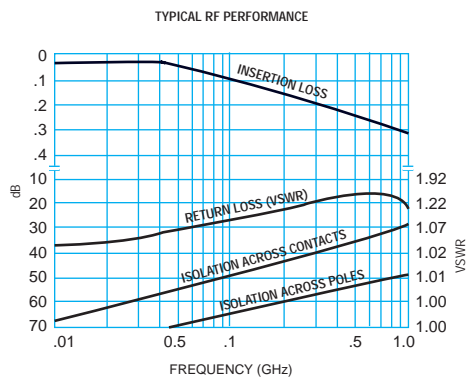


FIGURE 1

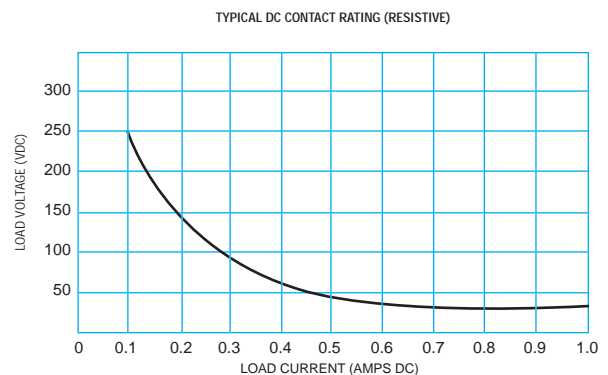
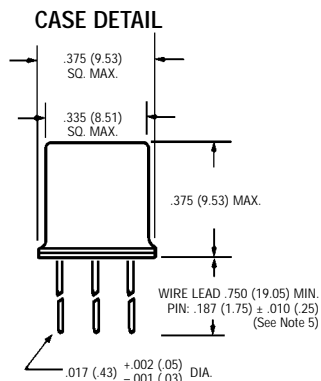


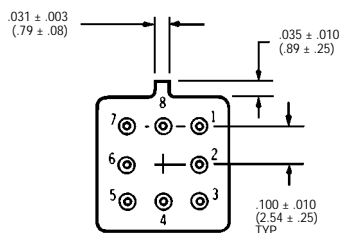
FIGURE 2

OUTLINE DIMENSIONS



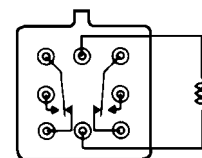
TERMINAL LOCATIONS

(Viewed from Terminals. Numbers for Reference only)

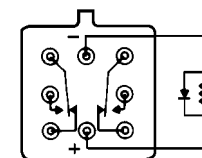


DIMENSIONS ARE SHOWN IN INCHES (MILLIMETERS)

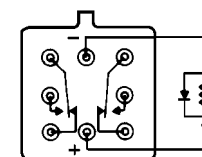
SCHEMATIC DIAGRAMS



134



134D

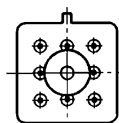


134DD

SCHEMATICS ARE VIEWED FROM TERMINALS

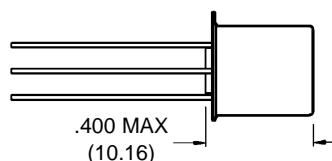
SPACER PAD

Relays can be supplied with a spacer pad attached to the relay header. The pad permits the relay to be spaced away from the mounting surface facilitating solder joint inspection. To order add **M4** to the part number (e.g. ER134**M4**-26).



NOTES:

1. Material: Polyester film.
2. Increase contact resistance by 0.01 ohm.



NOTES:

1. Relay contacts will exhibit no chatter in excess of 10 µsec or transfer in excess of 1 µsec.
2. "Typical" characteristics are based on available data and are best estimates. No on-going verification tests are performed.
3. For reference only. Coil resistance not directly measurable at relays terminals due to internal series semiconductor. 134DD only.
4. Screened HI-REL versions available. Contact factory.
5. Unless otherwise specified, relays will be supplied as follows: Length will be standard 0.75" (19.05) minimum and will be either gold plated or solder coated. Contact your local representative for ordering information.
6. The slash and characters appearing after the slash are not marked on the relay.
7. Unless otherwise specified, parameters are initial values.

8.

RELIABILITY LEVEL	FAILURE RATE %/10,000 CYCLES
A	1.5
B	0.75

9.

Teledyne Part Numbering System for Established Reliability Relays (See T²R[®] Program Introduction)

EXAMPLE: ER 134 D Z M4 - 26 A / SQ

Established Reliability Designer: ER

Relay Series: 134

D = Diode Suppression

DD = Diode Suppression and Polarity Protection

Mounting Variant Ground Pin (See page 112): M4 = Spacer Pad

Termination Variant: Q = Solder Coated Leads (Notes 5 and 6), S = .187" Leads (Notes 5 and 6)

Reliability and Screening Level (Note 8): 26

Coil Voltage: A

M4 = 194-3 Spacer Pad: SQ