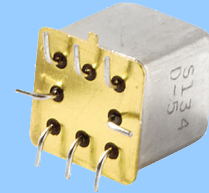




## CENTIGRID® SURFACE MOUNT COMMERCIAL RELAYS SENSITIVE DPDT



SERIES	RELAY TYPE
S134	DPDT, sensitive non-latching relay
S134D	DPDT, sensitive non-latching relay with internal diode for coil transient suppression
S134DD	DPDT, sensitive non-latching relay with internal diodes for coil transient suppression and polarity reversal protection

### DESCRIPTION

The Series S134 Surface Mount Centigrd® Relay is an ultraminiature, hermetically sealed, armature relay. The low profile height (.460") and .100" lead spacing make it ideal for applications where extreme packaging density and/or close PC board spacing are required. The specially formed J-leads are pre-tinned to make the relays ideal for most types of surface mount solder reflow processes.

The basic design and internal construction are identical to the Series 134 Centigrd® relays, and are capable of meeting Teledyne Relays' T<sup>2</sup>R® requirements. The following unique construction features and manufacturing techniques provide overall high reliability and excellent resistance to environmental extremes:

### The S134 feature:

- All welded construction.
- High force/mass ratios for resistance to shock and vibration.
- Unique uni-frame design providing high magnetic efficiency and mechanical rigidity.
- 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.

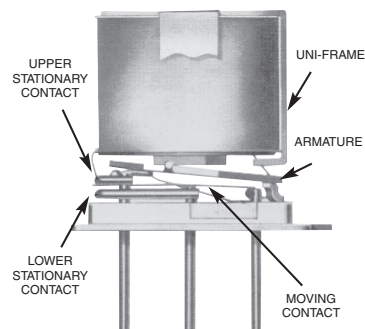
The Series S134D and S134DD relays have internal discrete silicon diodes for coil suppression and polarity reversal protection.

The sensitive surface mount Centigrd® relay has a high resistance coil, thus requiring extremely low operating power (200 mw typical). The advantages of reduced heat dissipation and power supply demands make them ideal for applications with a low power budget.

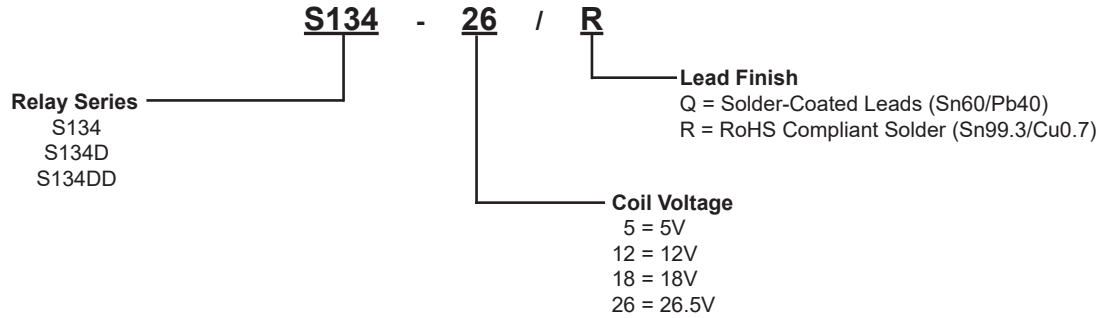
### ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS

<b>Temperature</b> (Operating)	-55°C to +85°C
<b>Vibration</b> (Note 1)	30 g's to 3000 Hz
<b>Shock</b> (Note 1)	50 g's, 6ms half sine
<b>Acceleration</b>	50 g's
<b>Enclosure</b>	Hermetically sealed
<b>Weight</b>	0.15 oz. (4.3g) max.
<b>Reflow Temperature</b>	260°C max. temp. 1 min. max

### INTERNAL CONSTRUCTION



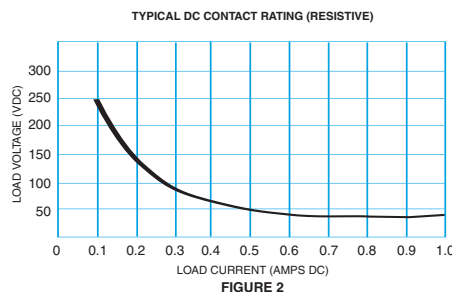
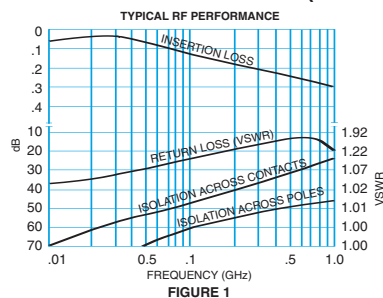
**Part Numbering System (Note 9)**



**GENERAL ELECTRICAL SPECIFICATIONS (-55 °C to 85 °C unless otherwise noted. See notes 2 & 3.)**

<b>Contact Arrangement</b>	2 Form C (DPDT)
<b>Rated Duty</b>	Continuous
<b>Contact Resistance</b>	0.10 Ω max.
<b>Contact Load Rating (DC)</b>	Resistive: 1 A / 28 Vdc Inductive: 200 mA / 28 Vdc (320mH) Lamp: 100 mA / 28 Vdc (320mH) Low level: 10 to 50 μA @ 10 to 50 mV
<b>Contact Load Rating (AC)</b>	Resistive: 250 mA / 115Vac, 60 and 400 Hz (Case not grounded) 100 mA / 115 Vac, 60 and 400 Hz (Case grounded)
<b>Contact Life Ratings</b>	10,000,000 cycles (typical) at low level 1,000,000 cycles (typical) at 0.5 A / 28 Vdc resistive 100,000 cycles min. at all other loads specified above
<b>Contact Overload Rating</b>	2 A / 28 Vdc Resistive (100 cycles min.)
<b>Coil Operating Power</b>	200 mW typical at nominal rated voltage
<b>Contact Carry Rating</b>	Contact Factory
<b>Operate Time</b>	4.0 ms max. @ nominal rated coil voltage
<b>Release Time</b>	S134: 1.5 ms max.      S134D, S134DD: 4.0 ms max.
<b>Contact Bounce</b>	1.5 ms max.
<b>Intercontact Capacitance</b>	0.4 pf typical
<b>Insulation Resistance</b>	10,000 MΩ min. between mutually isolated terminals
<b>Dielectric Strength</b>	500 Vrms (60 Hz) @ atmospheric pressure
<b>Negative Coil Transient (Vdc)</b>	1.0 Vdc Max.
<b>Diode P.I.V. (Vdc)</b>	100 Vdc Min.

**PERFORMANCE CURVES (Note 2)**



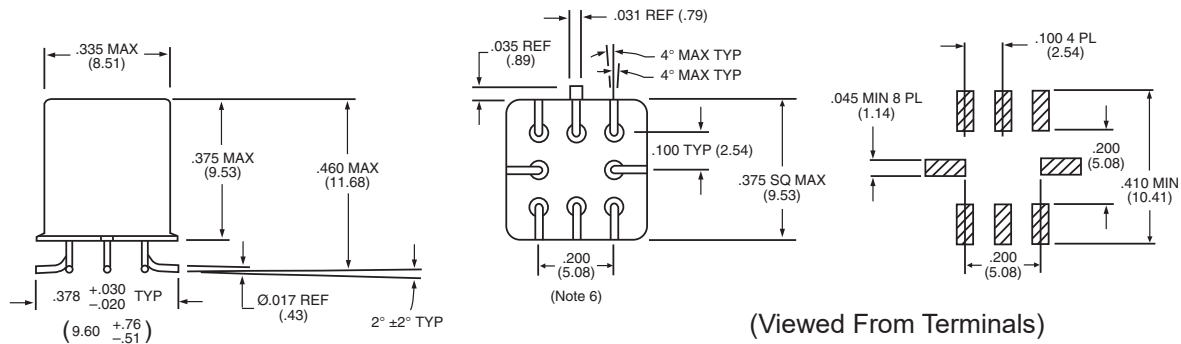
**GENERAL NOTES**

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. Unless otherwise specified, parameters are initial values.
4. Relays can be supplied with a spacer pad. See appendix.

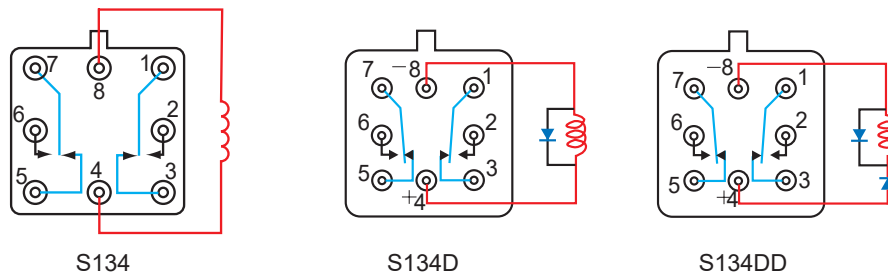
**DETAILED ELECTRICAL SPECIFICATIONS (-55 °C to 85 °C unless otherwise noted. See note 3.)**

BASE PART NUMBERS (S134, S134D, S134DD)		S134-5 S134D-5 S134DD-5	S134-12 S134D-12 S134DD-12	S134-18 S134D-18 S134DD-18	S134-26 S134D-26 S134DD-26	
Coil Voltage	Nom.	5.0	12.0	18.0	26.5	
	Max.	7.5	20.0	30.0	40.0	
Coil Resistance (Ohms ±10% @25°C)	S134, S134D	100	800	1600	3200	
	S134DD	64	800	1600	3200	
Coil Current (S134DD) (mAdc@25°C)	(Note 5)	Min.	56.8	12.5	9.6	7.2
		Max.	78.1	16.0	12.2	9.0
Pick-up Voltage (Vdc, Max)	S134, S134D	3.5	9.0	13.5	18.0	
	S134DD	3.7	11.0	14.5	19.0	
Drop-out Voltage (Vdc)	S134, S134D	Min.	0.12	0.41	0.59	0.89
		Max.	2.5	6.5	10.0	13.0
	S134DD	Min.	0.7	1.0	1.1	1.3
		Max.	2.6	5.8	9.0	13.0

**OUTLINE DIMENSIONS**



**SCHEMATIC DIAGRAMS**



**NOTES:**

1. Relay contacts will exhibit no chatter in excess of 10 ms or transfer in excess of 1 ms.
2. "Typical" characteristics are based on available data and are best estimates. No on-going verification tests are performed.
3. Unless otherwise specified, parameters are initial values.
4. For reference only. Coil resistance not directly measurable at relay terminals due to internal series diode.
5. Measured at nominal voltage for 5 sec. max.
6. Position of leads as they emerge from relay base.
7. Leads will fit noted pad layout with no overhang.
8. Lead ends are coplanar within .008" wide tolerance zone.
9. Leads will be solder-coated unless otherwise specified.