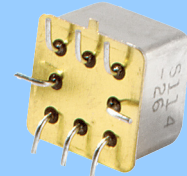


## CENTIGRID® SURFACE MOUNT COMMERCIAL RELAYS DPDT



SERIES	RELAY TYPE
S114	DPDT, surface-mount w/ J-Leads, non-latching relay
S114D	DPDT, SMT w/ J-Leads, non-latching relay with internal diode for coil transient suppression

### DESCRIPTION

The Series S114 Surface Mount Centigrad® Relay is an ultraminiature, hermetically sealed, armature relay. The low profile height (.360") and .100" lead spacing make it ideal for applications 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 most types of surface mount solder reflow processes.

The basic design and internal construction are identical to the Series 114 Centigrad® relays, and are capable of meeting Teledyne Relays' T2R® requirements. The following unique construction features and manufacturing techniques provide overall high reliability and excellent resistance to environmental extremes:

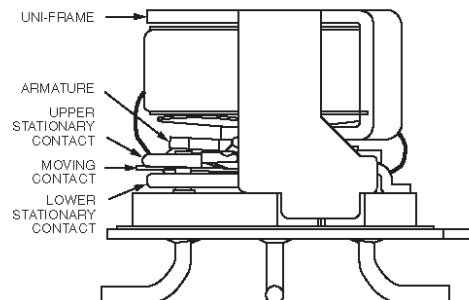
### The S114 feature:

- 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.

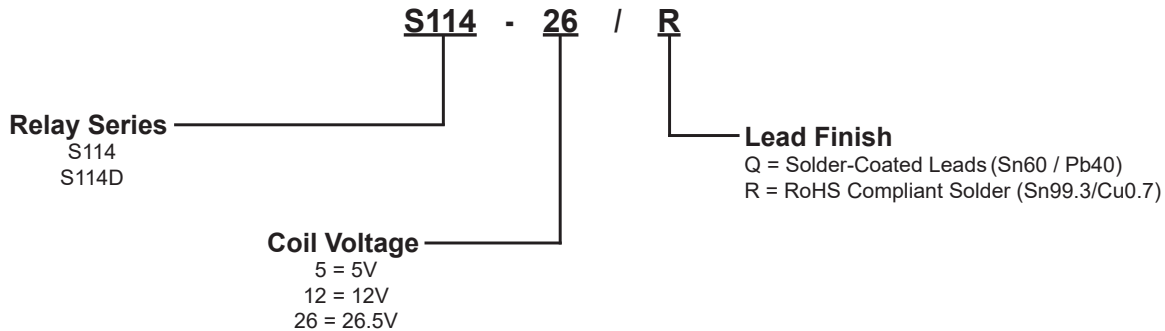
The Series S114D relays have internal discrete silicon diodes for coil suppression and polarity reversal protection.

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 (Notes 4 & 5)



#### 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>	450 mW typical at nominal rated voltage	
<b>Contact Carry Rating</b>	Contact Factory	
<b>Operate Time</b>	2.0 ms max. @ nominal rated coil voltage	
<b>Release Time</b>	S114: 1.5 ms max.	S114D: 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.	

#### NOTES:

- Relay contacts will exhibit no chatter in excess of 10 μs or transfer in excess of 1 μs.
- "Typical" characteristics are based on available data and are best estimates. No on-going verification tests are performed.
- Unless otherwise specified, parameters are initial values.
- Unless otherwise specified, relays will be supplied with solder-plated leads.
- The slash and characters appearing after the slash are not marked on the relay.
- Measured at nominal voltage for 5 sec. max.

**DETAILED ELECTRICAL SPECIFICATIONS** (-55 °C to 85 °C unless otherwise noted. See note 3 on pg 2.)

BASE PART NUMBERS (S114, S114D)		S114-5 S114D-5	S114-12 S114D-12	S114-26 S114D-26
Coil Voltage	Nom.	5.0	12.0	26.5
	Max.	5.8	16.0	32.0
Coil Resistance (Ohms ±10% @25°C)	S114, S114D	50	390	1560
Pick-up Voltage (Vdc, Max)	S114, S114D	3.5	9.0	18.0
Drop-out Voltage (Vdc)	S114, S114D	Min.	0.14	0.89
		Max.	2.3	6.5

**PERFORMANCE CURVES (Note 2)**

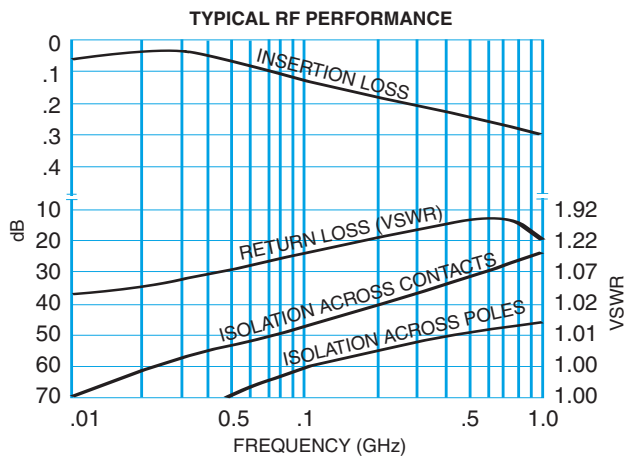


FIGURE 1

**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.

TYPICAL DC CONTACT RATING (RESISTIVE)

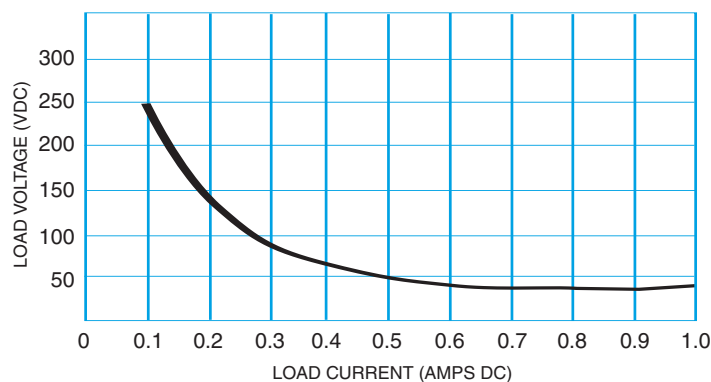
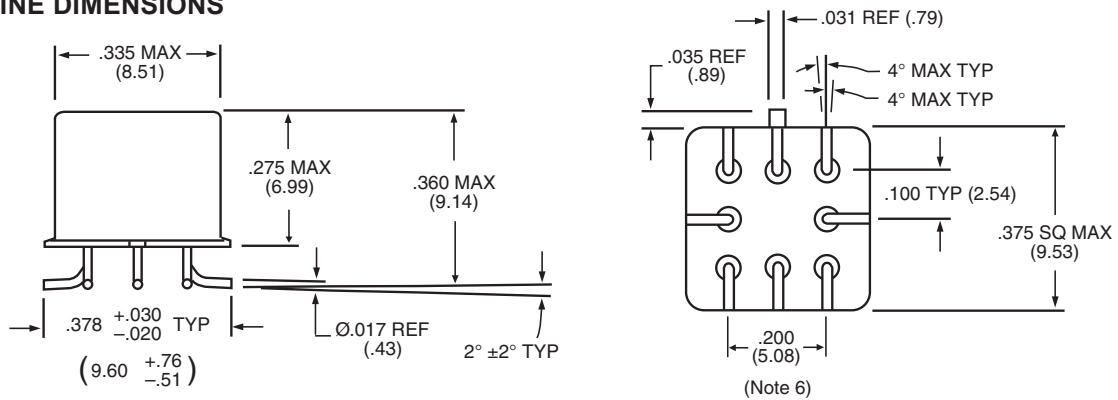
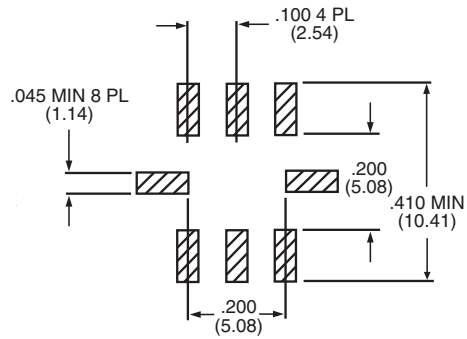


FIGURE 2

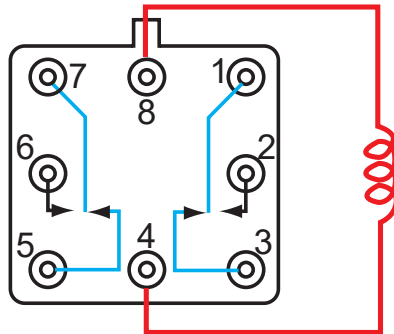
**OUTLINE DIMENSIONS**



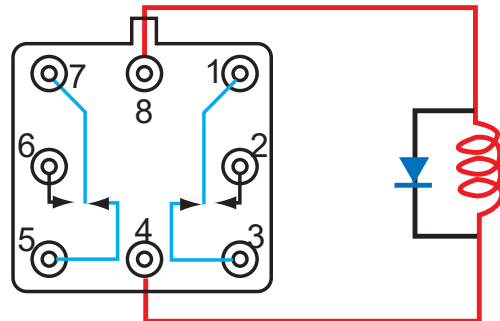
Dimensions are shown in Inches (Millimeters)  
 (Viewed From Terminals)



**SCHEMATIC DIAGRAMS**



S114



S114D