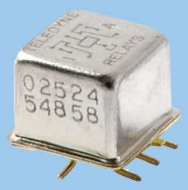
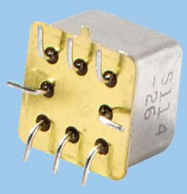


CENTIGRID® SURFACE MOUNT COMMERCIAL RELAYS DPDT



SERIES	RELAY TYPE
S114	DPDT basic relay
S114D	DPDT relay with internal diode for coil transient suppression

DESCRIPTION

The Series S114 Surface Mount Centigrid® 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 Centigrid® 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

Part Numbering System

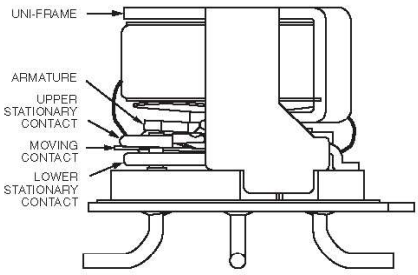
S114 - 26 / R

- S114 — Relay Series
- 26 — Nominal Coil Voltage (26 = 26.5 V, See Page 2 for more Voltages)
- R — Q = Solder-Coated Leads[1] (Surface Mount Relays are Solder-Coated by default); R = RoHS Compliant Solder[2]

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS

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

INTERNAL CONSTRUCTION



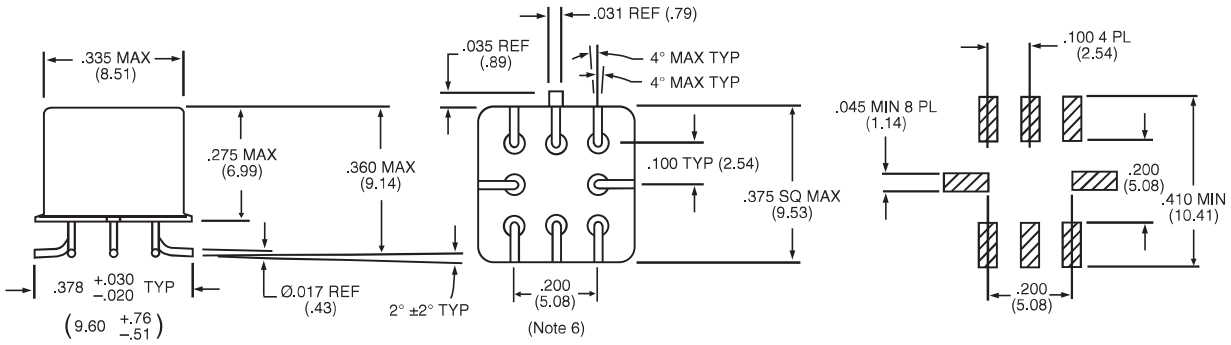
SERIES S114
GENERAL ELECTRICAL SPECIFICATIONS (-55 °C to 85 °C unless otherwise noted. See notes 2 & 3.)

Contact Arrangement	2 Form C (DPDT)	
Rated Duty	Continuous	
Contact Resistance	0.10 Ω max.	
Contact Load Rating (DC)	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	
Contact Load Rating (AC)	Resistive: 250 mA / 115Vac, 60 and 400 Hz (Case not grounded) 100 mA / 115 Vac, 60 and 400 Hz (Case grounded)	
Contact Life Ratings	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	
Contact Overload Rating	2 A / 28 Vdc Resistive (100 cycles min.)	
Coil Operating Power	450 mW typical at nominal rated voltage	
Contact Carry Rating	Contact Factory	
Operate Time	2.0 msec max. at nominal rated coil voltage	
Release Time	S114: 1.5 ms max.	S114D: 4.0 ms max.
Contact Bounce	1.5 msec max.	
Intercontact Capacitance	0.4 pf typical	
Insulation Resistance	10,000 MΩ min. between mutually isolated terminals	
Dielectric Strength	500 Vrms (60 Hz) @ atmospheric pressure	
Negative Coil Transient (Vdc)	1.0 Vdc Max.	
Diode P.I.V. (Vdc)	100 Vdc Min.	

DETAILED ELECTRICAL SPECIFICATIONS (@25°C)

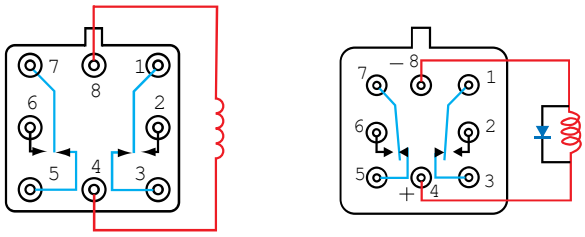
BASE PART NUMBERS (S114, S114D, S114DD)			**S114-5 S114D-5**	**S114-12 S114D-12**	**S114-26 S114D-26**
Coil Voltage	**Nom.**		5.0	12.0	26.5
	Max.		5.8	16.0	32.0
Coil Resistance (Ohms ±10% @25°C)	**S114, S114D**		50	390	1560
	S114D		39	390	1560
Coil Curent (S114DD) (mAdc@25°C)	**(Note 5)**	**Min.**	93.2	25.6	14.8
		Max.	128.2	32.8	18.5
Pick-up Voltage (Vdc, Max)	**S114, S114D**		3.5	9.0	18.0
Drop-out Voltage (Vdc)	**S114, S114D**	**Min.**	0.14	0.41	0.89
		Max.	2.3	6.5	13.0

SERIES S114
OUTLINE DIMENSIONS



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

SCHEMATIC DIAGRAMS



S114 S114D

NOTES:

1. RELAY CONTACTS WILL EXHIBIT NO CHATTER IN EXCESS OF 10 MSEC OR TRANSFER IN EXCESS OF 1 MSEC.
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. TERMINALS COATED WITH SN60 OR SN63 SOLDER PER QQ-S-571. KOVAR EXPOSED AT SHEARED END OF LEADS.

PERFORMANCE CURVES (Note 2)

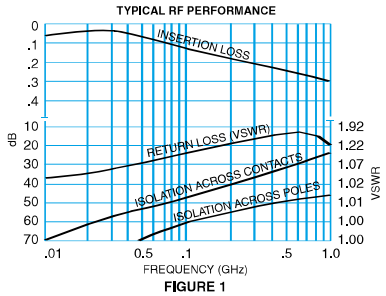


FIGURE 1

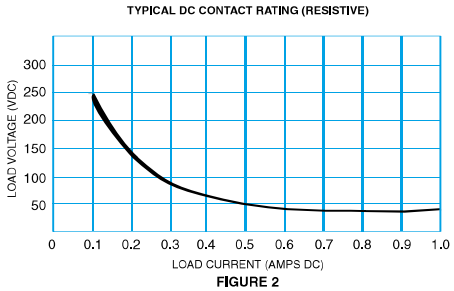


FIGURE 2

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.