TELEDYNE RELAYS

A Unit of Teledyne Electronics and Communications

COMMERCIAL TO-5 RELAYS

DPDT MAGNETIC LATCHING

SERIES 722

SERIES DESIGNATION	RELAY TYPE
722	DPDT basic relay
722D	DPDT relay with internal diode for coil transient suppression

DESCRIPTION

The magnetic-latching TO-5 relay, originally conceived and developed by Teledyne, has become one of the industry standards for low-level switching from dry circuit to 1 ampere. Designed for high-density PC board mounting, the 722 relay has become one of the most versatile ultraminiature relays available because of its small size and low coil power dissipation.

Unique construction features and manufacturing techniques provide excellent resistance to environmental extremes and overall high reliability.

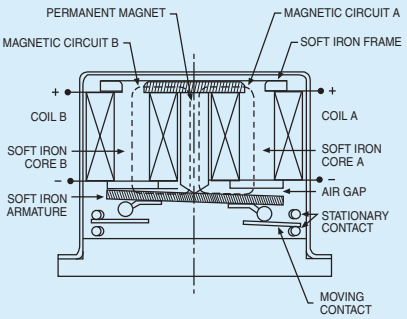
- All welded construction.
- Unique uni-frame design providing high magnetic efficiency and mechanical rigidity.
- High force/mass ratios for resistance to shock and vibration.
- Advanced cleaning techniques provide maximum assurance of internal cleanliness.
- Precious metal alloy contact material with gold plating assures excellent high current and dry circuit switching capabilities.

The Series 722D relay has discrete silicon diodes for coil transient suppression.

The Series 722 magnetic-latching relays are ideally suited for applications where coil power dissipation must be minimized. The relays can be operated with a short duration pulse and after the contacts have transferred, no external coil power is required. The magnetic-latching feature of the Series 722 provides a "memory" capability, since the relays will not reset upon removal of coil power.

By virtue of its inherently low intercontact capacitance and contact circuit losses, the 722 relay has proven to be an excellent ultraminiature RF switch for frequency ranges well into the UHF spectrum. A typical RF application for the TO-5 relay is in handheld 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 Transmitter-Receive switching (see Figure 1).

PRINCIPLE OF OPERATION



Energizing Coil B produces a magnetic field opposing the holding flux of the permanent magnet in Circuit B. As this net holding force decreases, the attractive force in the air gap of Circuit A, which also results from the flux of the permanent magnet, becomes great enough to break the armature free of Core B, and snap it into a closed position against Core A. The armature then remains in this position upon removal of power from Coil B, but will snap back into position B upon energizing Coil A. Since operation depends upon cancellation of a magnetic field, it is necessary to apply the correct polarity to the relay coils as indicated on the relay schematic. When latching relays are installed in equipment, the latch and reset coils should not be pulsed simultaneously. Coils should not be pulsed with less than rated coil voltage and the pulse width should be a minimum of three times the specified operate time of the relay. If these conditions are not followed, it is possible for the relay to be in the magnetically neutral position.

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS		
Temperature (Ambient)	**Storage**	–65°C to +125°C
	Operating	–55°C to +85°C
Vibration (General Note 1)		10 g's to 500 Hz
Shock (General Note 1)		30 g's, 6 msec, half-sine
Enclosure		Hermetically sealed
Weight		0.1 oz. (2.9g) max.

CENTIGRID® AND TO-5

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE
www.teledynerelays.com

SERIES 722
GENERAL ELECTRICAL SPECIFICATIONS (@25°C) (Notes 2 & 3)

Contact Arrangement	2 Form C (DPDT)
Rated Duty	Continuous
Contact Resistance	0.15 ohm max. before life; 0.25 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 50mV
Contact Load Ratings (AC)	Resistive: 250 mA/115Vac, 60 and 400 Hz (Case not grounded) 100 mA/115Vac, 60 and 400 Hz (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	290 milliwatts typical at nominal rated voltage
Operate Time	2.0 ms max at nominal rated coil voltage
Minimum Operate Pulse	6.0 ms width @ rated voltage
Intercontact Capacitance	0.4 pf typical
Insulation Resistance	1,000 megohms min. between mutually isolated terminals
Dielectric Strength	Atmospheric pressure: 350 Vrms/60Hz
Negative Coil Transient 722D	2.0 Vdc Max.
Diode P.I.V. 722D	60 Vdc Min.

DETAILED ELECTRICAL SPECIFICATIONS (@25°C) (Note 3)

BASE PART NUMBERS (See Note 6 for full P/N example)		**722-5 722D-5**	**722-6 722D-6**	**722-9 722D-9**	**722-12 722D-12**	**722-18 722D-18**	**722-26 722D-26**
Coil Voltage (Vdc)	Nom.	5.0	6.0	9.0	12.0	18.0	26.5
	Max.	6.0	8.0	12.0	16.0	24.0	32.0
Coil Resistance (Ohms ±20% @25°C)		61	120	280	500	1130	2000
Set & Reset Voltage (Vdc, Max.) Pulse Operated		3.5	4.5	6.8	9.0	13.5	18.0

PERFORMANCE CURVES (Note 2)

TYPICAL RF PERFORMANCE

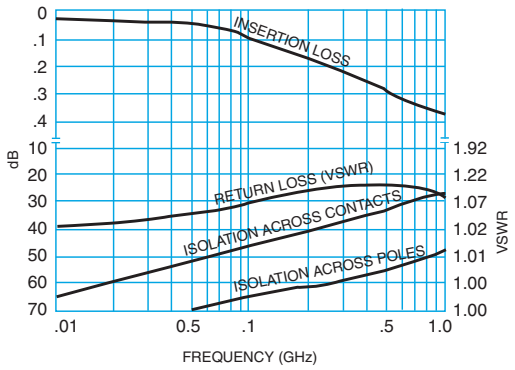


FIGURE 1

TYPICAL DC CONTACT RATING (RESISTIVE)

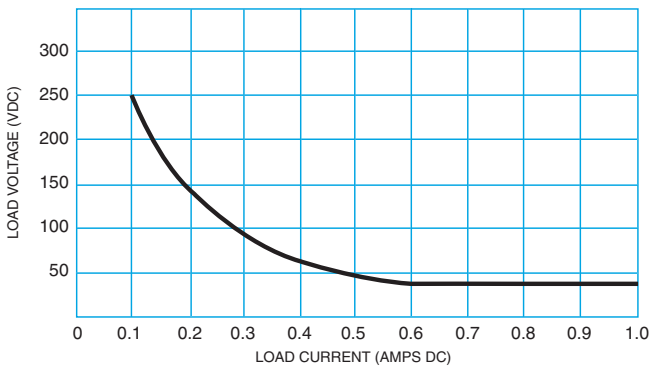
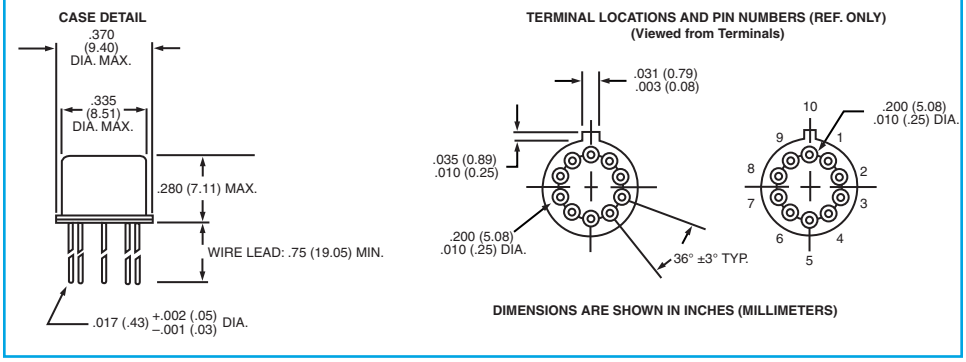


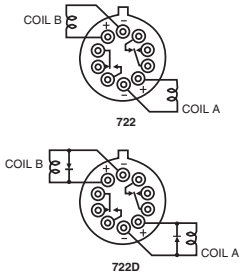
FIGURE 2

CENTIGRID® AND TO-5

OUTLINE DIMENSIONS



SCHEMATIC DIAGRAM

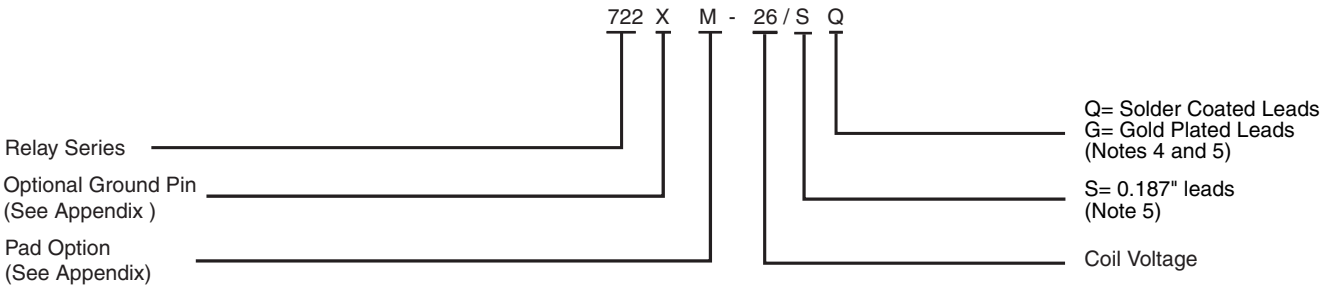


SCHEMATICS ARE VIEWED FROM TERMINALS.
CONTACTS SHOWN IN POSITION RESULTING
WHEN COIL A LAST ENERGIZED.

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. Unless otherwise specified, relays will be supplied with either gold-plated or solder-coated leads.
5. The slash and characters appearing after the slash are not marked on the relay.
6.

Teledyne Part Numbering System for Commercial Relays



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for High Frequency / RF Relays ***category:***

Click to view products by Teledyne ***manufacturer:***

Other Similar products are found below :

134M4-26 134YZM4-12 136CM9-5 ER136CZM9-5B ER412DYM-12B ARA200A4HM01 3SBH1020A2 400-192-10 412TM-18 ARN12A12 422DM-26 411T-12 LB363-100-5 D3210 ARN10A12 ER116C-26A ER114ZM4-5A/SQ ER114ZM4-12A/SQ ER412-26B/Q ER134DYZ-12A 36 AT5 25-200ZA 36 T5 48-000ZA 27 T5 24-200ZA 27 T5 26-200ZA 27 T5 28-200ZA ER411DM4-12A/SQ 732-5/Q R591362640 R591723400 R595867120 HF3 02 R594873417 R595863115 IM43TS IMB03CTS 732TN-26 1-1462038-1 IMB06CTS 1462051-5 1462050-1 1462050-2 G6K-2F-RF-S-DC5 ARE10A4H ARE1024 ARS1012 ARJ22A12 ARS104H FTR-B3GA4.5Z-B10 FTR-B3CA024Z 1-1462039-7