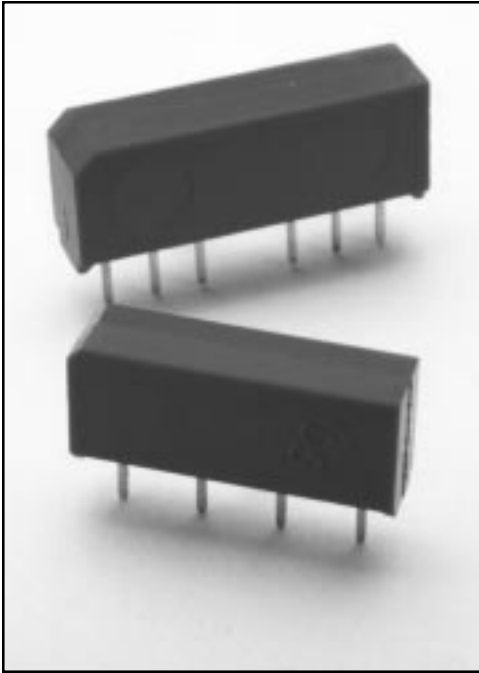


9000 Series / Molded SIP Reed Relays



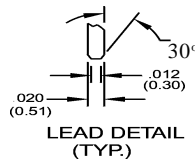
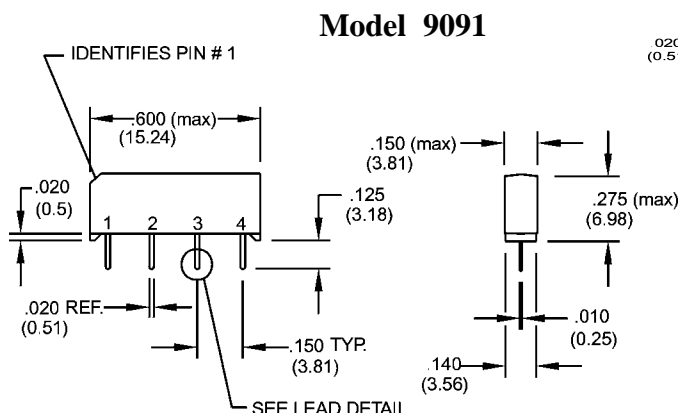
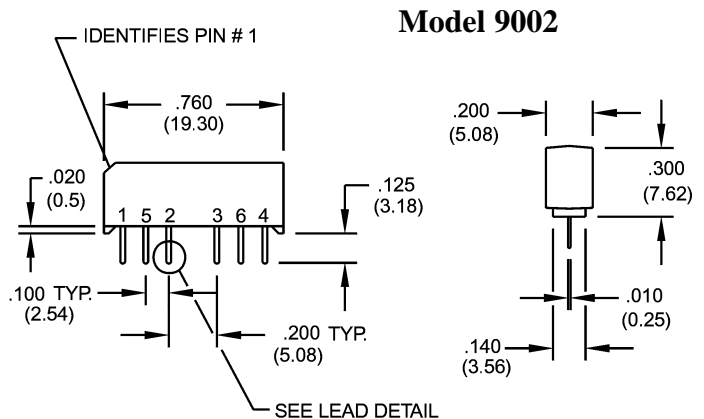
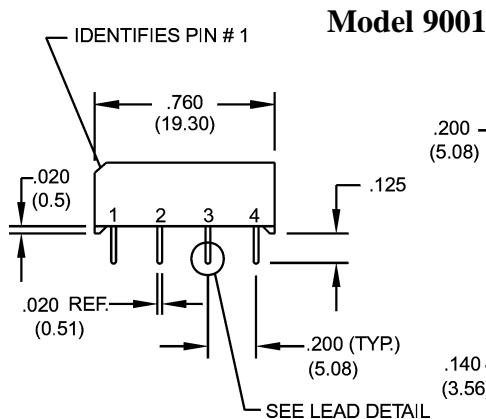
HIGH PERFORMANCE SIP REED RELAYS

The SIP relay is the industry standard when high reliability and consistent performance are desired in a compact package. The 9001 and 9002 are high performance relays ideally suited for Automatic Test Equipment, Instrumentation, RF, and Telecommunications applications. The 9091 is a compact version of the 9001. It offers many of the same features of the larger package while using 40% less board space. The specification tables allow you to select the appropriate relay for your application.

SERIES FEATURES

- ◆ High Insulation Resistance - $10^{12} \Omega$ minimum. ($10^{13} \Omega$ typical)
- ◆ High reliability, hermetically sealed contacts for long life. Tested to 1 Billion Operations.
- ◆ High dielectric strength available, consult factory.
- ◆ High speed switching compared to electromechanical relays.
- ◆ Molded thermoset body on integral lead frame design.
- ◆ Coaxial Shield for 50 Ω impedance and switching of fast rise time digital pulses - 9002 only.
- ◆ Optional Coil Suppression Diode - protects coil drive circuits.
- ◆ UL File # E-67117, CSA File # LR 28537

Dimensions in Inches (Millimeters)

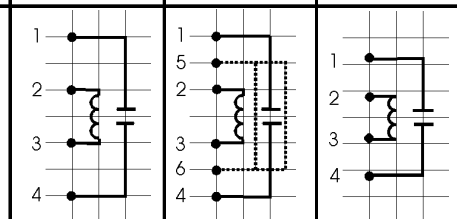


Ordering Information

| Part Number | 90XX-XX-XX | General Options |
|-------------------------------|---|--|
| Model Number | 9001 9002 9091 | 0=No Diode |
| Coil Voltage | 05=5 volts 12=12 volts | 1=Diode ² |
| Magnetic Shield Option | 0=No Shield 1=Magnetic Shield (9091 Model) | 2=Form B Contacts (Normally Closed ³) (9001 & 9002 Models, 5V only) |

9000 Series / Molded SIP Reed Relays

| Model Number | | | 9001 ² | | 9002 ² | | 9091 ² | |
|--|---|------------------------|-------------------|------|-------------------|------|-------------------|------|
| Parameters | Test Conditions | Units | 4 Pin SIP | | 6 Pin SIP | | 1 Form A | |
| COIL SPECS. | | | | | | | | |
| Nom. Coil Voltage | | VDC | 5 | 12 | 5 | 12 | 5 | 12 |
| Max. Coil Voltage | | VDC | 6.5 | 15.0 | 6.5 | 15.0 | 6.5 | 15.0 |
| Coil Resistance | +/- 10%, 25° C | Ω | 500 | 1000 | 350 | 750 | 500 | 1000 |
| Operate Voltage | Must Operate by | VDC - Max. | 3.75 | 9.0 | 3.75 | 9.0 | 3.75 | 9.0 |
| Release Voltage | Must Release by | VDC - Min. | 0.4 | 1.0 | 0.4 | 1.0 | 0.4 | 1.0 |
| CONTACT RATINGS | | | | | | | | |
| Switching Voltage | Max DC/Peak AC Resist. | Volts | 200 | | 200 | | 200 | |
| Switching Current | Max DC/Peak AC Resist. | Amps | 0.5 | | 0.5 | | 0.5 | |
| Carry Current | Max DC/Peak AC Resist. | Amps | 1.5 | | 1.5 | | 1.5 | |
| Contact Rating | Max DC/Peak AC Resist. | Watts | 10 | | 10 | | 10 | |
| Life Expectancy-Typical ¹ | Signal Level 1.0V, 1.0mA | x 10 ⁶ Ops. | 1000 | | 1000 | | 500 | |
| Static Contact Resistance (max. init.) | 50mV, 10mA | Ω | 0.150 | | 0.150 | | 0.125 | |
| Dynamic Contact Resistance (max. init.) | 0.5V, 50mA at 100 Hz, 1.5 msec | Ω | 0.200 | | 0.200 | | 0.150 | |
| RELAY SPECIFICATIONS | | | | | | | | |
| Insulation Resistance (minimum) | Between all Isolated Pins at 100V, 25°C, 40% RH | Ω | 10 ¹² | | 10 ¹² | | 10 ¹² | |
| Capacitance - Typical Across Open Contacts | No Shield | pF | 0.7 | | - | | 0.1 | |
| | Shield Floating | pF | - | | 0.8 | | - | |
| | Shield Guarding | pF | - | | 0.1 | | - | |
| Open Contact to Coil | No Shield | pF | 1.4 | | - | | 2.0 | |
| | Shield Floating | pF | - | | 1.4 | | - | |
| | Shield Guarding | pF | - | | 0.5 | | - | |
| Contact to Shield | Contacts Open, Shield Floating | pF | - | | 1.4 | | - | |
| Dielectric Strength (minimum) | Between Contacts | VDC/peak AC | 300 | | 300 | | 200 | |
| | Contacts to Shield | VDC/peak AC | - | | 1500 | | - | |
| | Contacts/Shield to Coil | VDC/peak AC | 1500 | | 1500 | | 1500 | |
| Operate Time - including bounce - Typical | At Nominal Coil Voltage, 30 Hz Square Wave | msec. | 0.35 | | 0.35 | | 0.50 | |
| Release Time - Typical | Zener-Diode Suppression ⁴ | msec. | 0.10 | | 0.10 | | 0.30 | |
| | Diode Suppression | | - | | - | | 0.12 | |



Top View:
Dot stamped
on relay refers
to pin #1
Grid = .1"x.1"
(2.54mm x 2.54mm)

Notes:

¹Consult factory for life expectancy at other switching loads. 9090 series contact resistance >0.5W defines end of life or failure to open.

²Optional diode is connected to pin #2 (+) and pin #3(-). Correct coil polarity must be observed.

³9000 series part numbers designated with Form B contacts, these relays contain bias magnets. Correct coil polarity must be observed.

⁴Consists of 20V Zener-diode and 1N1002 diode in series, connected in parallel with coil.

Environmental Ratings

Storage Temp:-35°C to +100°C; Operating Temp:-20°C to +85°C
Solder Temp: 270°C max; 10 sec. max

The operate and release voltage and the coil resistance are specified at 25°C. These values vary by approximately 0.4%/°C as the ambient temperature varies.

Vibration: 20 G's to 2000 Hz; Shock: 50 G's