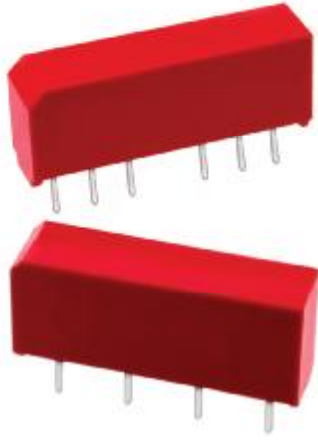


# 9000 SERIES/MOLDED SIP REED RELAYS



## 9000 Series 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 specification tables allow you to select the appropriate relay for your application.

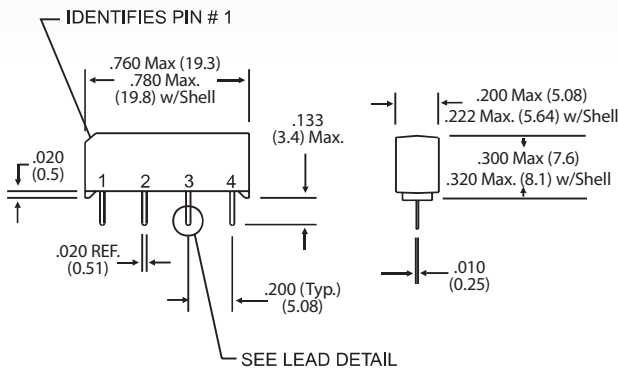
### 9000 Series Features

- ▶ High Insulation Resistance -  $10^{12}\Omega$  minimum ( $10^{13}\Omega$  typical)
- ▶ High reliability, hermetically sealed contacts for long life (tested up 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 $\Omega$  impedance and switching of fast rise time digital pulses - 9002 only
- ▶ Optional Coil Suppression Diode - protects coil drive circuits
- ▶ UL File #E67117, CSA File #028537 - Contact factory for details
- ▶ RoHS compliant

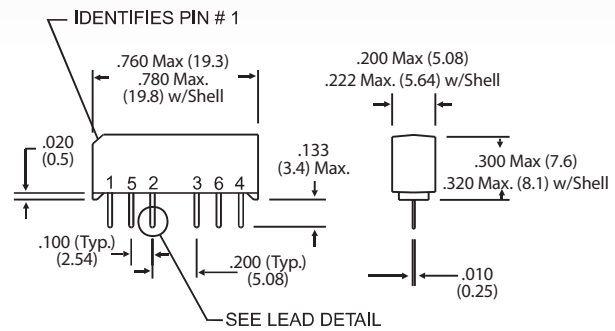
## DIMENSIONS

*in Inches (Millimeters)*

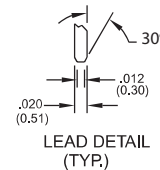
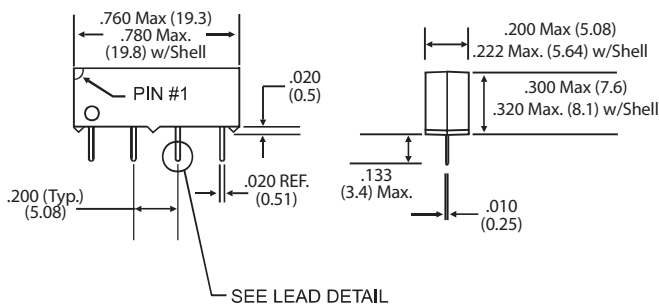
Model 9001



Model 9002



Alternate Package



## Ordering Information

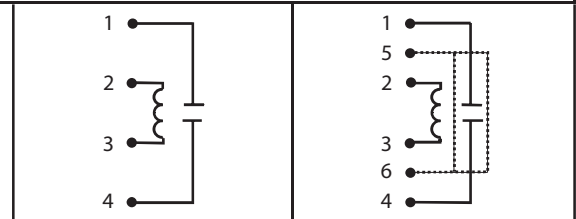
Part Number	90XX-XX-XX	General Options
Model Number	9001 9002	0 = No Diode 1 = Diode <sup>2</sup>
Coil Voltage	05=5 volts 12=12 volts	Magnetic Shield Option 0 = No Shield 1 = Shield

### NOTE

- ▶ For RF Graph Performance, see "RF Graphs" section of the *Reed Relay Technical & Application Information*

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

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



#### Notes:

<sup>1</sup> Consult factory for life expectancy at other switching loads. Resistance >0.5Ω defines end of life or failure to open.

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

#### Environmental Ratings:

*Storage Temp:* -35°C to +100°C; *Operating Temp:* -20°C to +85°C; *Solder Temp:* 270°C max; 10 sec. max  
All electrical parameters measured at 25°C unless otherwise specified.

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