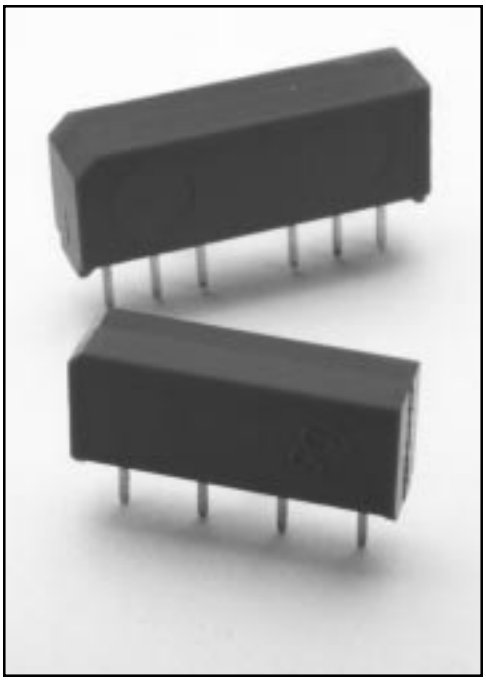
9000 Series / Molded SIP Reed Relays



High Performance SIP Reed Relays

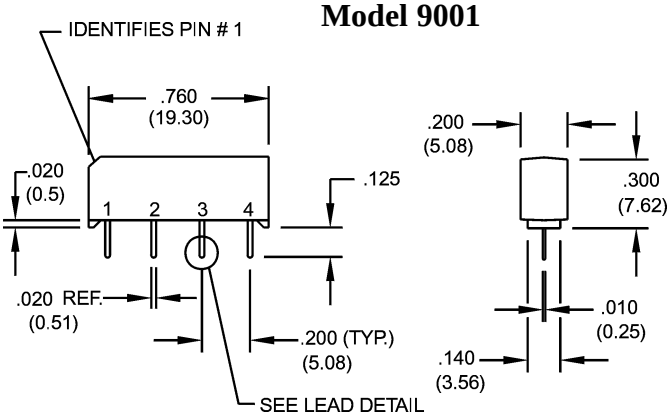
The SIP relay is the industry standard when high reliability and consistent performance are desired in a compact package. The 9001 and 9002 are high performance relays ideally suited for Automatic Test Equipment, Instrumentation, RF, and Telecommunications applications. The 9091 is a compact version 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

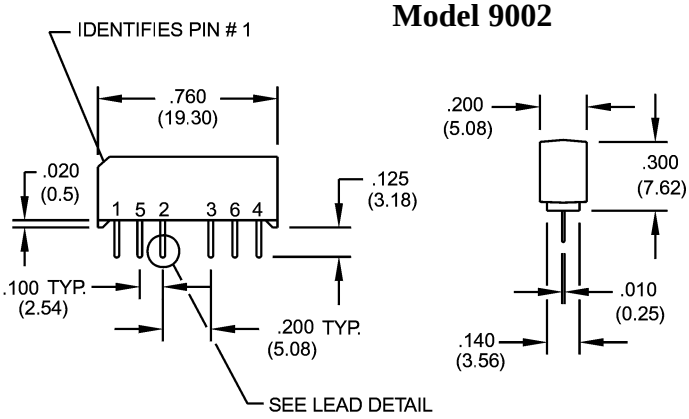
- High Insulation Resistance - 10^{12} Ω minimum. (10^{13} Ω typical)
- High reliability, hermetically sealed contacts for long life. Tested to 1 Billion Operations.
- High dielectric strength available, consult factory.
- High speed switching compared to electromechanical relays.
- Molded thermoset 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)

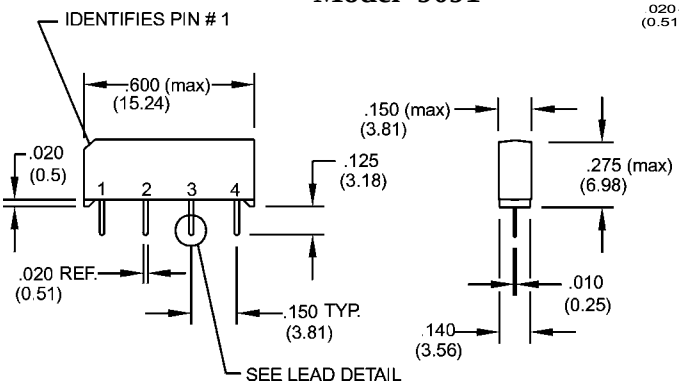
Model 9001

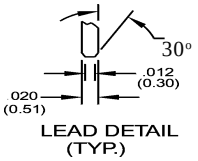


Model 9002



Model 9091



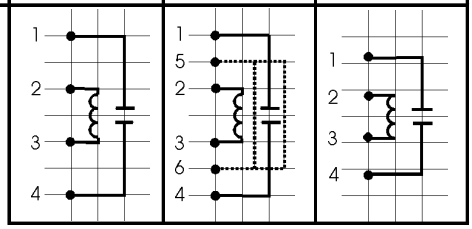


Ordering Information

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

9000 Series / Molded SIP Reed Relays

Model Number Parameters	Test Conditions	Units	9001[2] 4 Pin SIP		9002[2] 6 Pin SIP		9091[2] 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:

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

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

[3]9000 series part numbers designated with Form B contacts, these relays contain bias magnets. Correct coil polarity must be observed.

[4]Consists 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