# 9000 Series/Spartan SIP Reed Relays



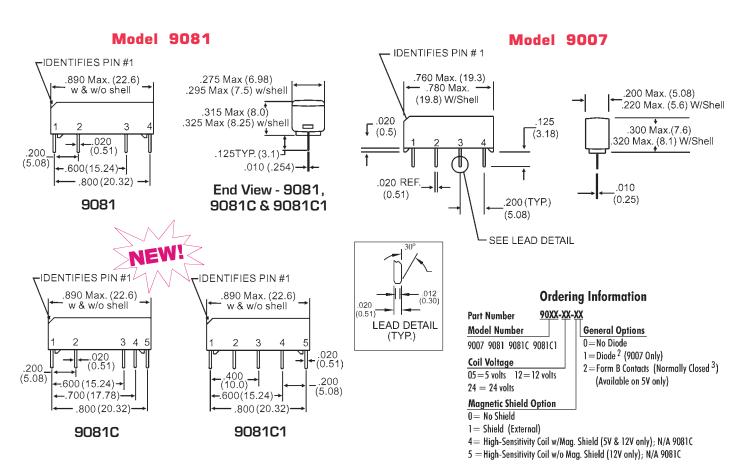
### **Economy SIP Reed Relays**

The SIP relay is the industry choice for a wide variety of designs where economy, performance and a compact package are needed. The 9007 Spartan Series is a general purpose economy version of the 9001 for applications with less stringent requirements. The 9081 Spartan Series is similar to the 9007, but with alternate industry standard footprints to accommodate other options, including Form C types. These relays are well suited for applications in Security, Instrumentation and Modems. The specification tables allow you to select the appropriate relay for your application.

#### Series Features

- Hermetically sealed contacts for long life
- High dielectric strength available, consult factory
- High speed switching compared to electromechanical relays
- Molded thermoset body on integral lead frame design
- ♦ Form C available (9081C)
- Optional Coil Suppression Diode protects coil drive circuits
- ◆ UL File # E67117, CSA File # LR 28537

## Dimensions in Inches (Millimeters)



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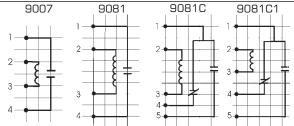
Model Number			9007 2	9081	9081C
Parameters	Test Conditions	Units	.222 SIP	.242 SIP	.222 SIP .2411 SIP
COIL SPECS.					
Nom. Coil Voltage Max. Coil Voltage Coil Resistance (standard)	+/- 10%, 25° C	VDC VDC Ω	5 12 24 6.5 15.0 32.0 500 1000 2000	5 12 24 6.5 15.0 32.0 500 1000 2000	5 12 24 6.5 15.0 32.0 125 500 2000
Coil Resistance (hi-sensitivity)	, , , , , , , , , , , , , , , , , , , ,	Ω	1000 2000	1000 2000	
Operate Voltage Release Voltage	Must Operate by Must Release by	VDC - Max. VDC - Min.	3.75 9.0 18.0 0.4 1.0 2.0	3.75 9.0 18.0 0.4 1.0 2.0	3.75 9.0 18.0 0.4 1.0 2.0
CONTACT RATINGS					
Switching Voltage Switching Current	Max DC/Peak AC Resist.  Max DC/Peak AC Resist.	Volts Amps	200 0.5	200 0.5	175 0.4
Carry Current Contact Rating	Max DC/Peak AC Resist.  Max DC/Peak AC Resist.	Amps Watts	1.0 10	1.0 10	1.0
Life Expectancy-Typical <sup>1</sup>	Signal Level 1.0V, 1.0mA	x 10 <sup>6</sup> Ops.	100	100	100
Static Contact Resistance (max. init.)	50mV, 10mA	Ω	0.200	0.200	0.200
Dynamic Contact Resistance (max. init.)	0.5V, 50mA at 100 Hz, 1.5 msec	Ω	N/A	N/A	N/A
RELAY SPECIFICATIONS					
Insulation Resistance (minimum)	Between all Isolated Pins at 100V, 25°C, 40% RH	Ω	x 10 <sup>10</sup>	x 10 <sup>10</sup>	x 10 <sup>10</sup>
Capacitance - Typical	No Shield	pF	0.7	0.7	0.7
Across Open Contacts	Shield Floating Shield Guarding	pF pF	-	-	-
Open Contact to Coil	No Shield	pF	1.4	1.4	1.4
	Shield Floating Shield Guarding	pF pF	-	-	-
Contact to Shield	Contacts Open, Shield Floating	pF	-	-	-
Dielectric Strength (minimum)	Between Contacts	VDC/peak AC	250	250	200
	Contacts to Shield	VDC/peak AC	-	-	-
	Contacts/Shield to Coil	VDC/peak AC	1500	1500	1500
Operate Time - including bounce - Typical	At Nominal Coil Voltage, 30 Hz Square Wave	msec.	0.50	0.50	1.0
Release Time - Typical	Zener-Diode Suppression <sup>4</sup>	msec.	0.20	0.20	0.50
	•	•	0007	0004 000	10 000101

Top View:

Dot stamped on top of relay refers to pin #1 location. Grid = .1"x.1" (2.54mm x 2.54mm)

#### Notes:

- <sup>1</sup>Consult factory for life expectancy at other switching loads.
- <sup>2</sup>Optional diode is connected to pin #2 (+) and pin #3(-). Correct coil polarity must be observed.
- <sup>3</sup> These relays contain bias magnets. Correct coil polarity must be observed. Pin #2(+)
- <sup>4</sup>Consists of 20V Zener-diode and 1N1002 diode in series, connected in parallel with coil.
- $^5$  For -40 and -50 models,  $5V/1000~\Omega$  or  $12V/2000~\Omega$ .



#### **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