

9104 SERIES/HIGH VOLTAGE SIP REED RELAYS



9104 Series Hi Voltage SIP Reed Relays

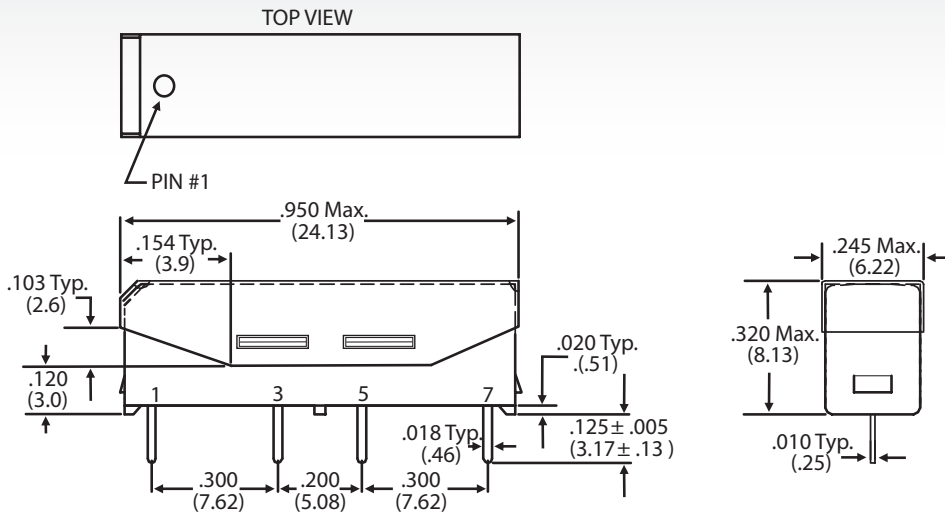
Molded SIP relays are the industry standard when high reliability and consistent performance are desired in a compact package. The 9104 Series adds high voltage switching capability and high voltage standoff capability to a SIP relay package. These high voltage, high performance relays are ideally suited for Automatic Test Equipment, Instrumentation, Battery Management, Solar and Process Control applications where voltage isolation is a key design requirement.

9104 Series Features

- ▶ High voltage switching up to 1000 V
- ▶ High dielectric strength (up to 4000 V DC)
- ▶ High Insulation Resistance – $10^{11}\Omega$ minimum
- ▶ High reliability, hermetically sealed contacts for long life
- ▶ High speed switching compared to electromechanical relays
- ▶ Molded thermoset body on integral lead frame design
- ▶ Optional Coil Suppression Diode – protects coil drive circuits
- ▶ Magnetic Shield – reduces interaction
- ▶ UL File #E67117 - Contact factory for details
- ▶ RoHS compliant

DIMENSIONS

in Inches (Millimeters)

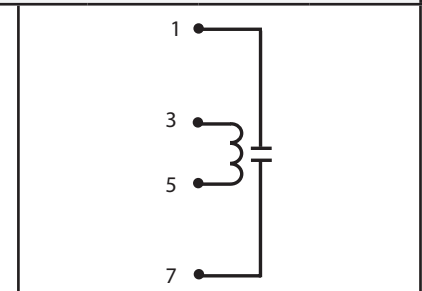


Ordering Information

| | | |
|---------------------|------------------------|------------------------------------------------------------|
| Part Number | 9XXX-XX-XX | General Options |
| Model Number | 9104 | 0=No Diode 1=Diode ² |
| Coil Voltage | 05=5 volts 12=12 volts | Dielectric Strength (Min) / Contacts Shield to Coil |
| | | 1=2000/3000 3=3000/3000 4=4000/4000 |

| MODEL NUMBER | | | 9104 ² | |
|-----------------------------------------------|----------------------------------------------------|----------------------------|----------------------------|--------------|
| Parameters | Test Conditions | Units | 4 Pin SIP | |
| COIL SPECS. | | | | |
| 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 | 175 500 | 140 500 |
| Operate Voltage | Must Operate by | VDC - Max. | 3.75 9.0 | 3.75 9.0 |
| Release Voltage | Must Release by | VDC - Min. | 0.5 1.0 | 0.5 1.0 |
| CONTACT RATINGS | | | | |
| Switching Voltage ³ | Max DC/Peak AC Resist. | Volts | 1000 | |
| Switching Current | Max DC/Peak AC Resist. | Amps | 0.5 | |
| Carry Current | Max DC/Peak AC Resist. | Amps | 1.3 | |
| Contact Rating | Max DC/Peak AC Resist. | Watts | 10 | |
| Life Expectancy-Typical ¹ | Signal Level 1.0V, 10mA | x 10 ⁶ Ops. | 300 | |
| Static Contact Resistance (max. init.) | 50mV, 10mA | Ω | 0.150 | |
| Dynamic Contact Resistance (max. init.) | 0.5V, 50mA at 100 Hz, 1.5 msec | Ω | 0.200 | |
| RELAY SPECIFICATIONS | | | | |
| Insulation Resistance (minimum) | Between all Isolated Pins at 100V, 25°C, 40% RH | Ω | 10 ¹¹ | |
| Capacitance - Typical Across Open Contacts | No Shield | pF | 1.0 | |
| Open Contact to Coil | No Shield | pF | - | |
| Dielectric Strength ⁴ (minimum) | Between Contacts Contacts/Shield to Coil | VDC/peak AC VDC/peak AC | 2000 / 3000 2000 / 3000 | 4000 4000 |
| Operate Time - including bounce - Typical | At Nominal Coil Voltage, 30 Hz Square Wave | msec. | 0.75 | |
| Release Time - Typical | | msec. | 0.5 | |

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



Notes:

- ¹ Consult factory for life expectancy at other switching loads.
- ² Optional diode is connected to pin #3(+) and pin #5(-). Correct coil polarity must be observed.
- ³ Switch current limited to 1.0mA @ 1000V.

| Dielectric Strength | 9104-XX-1X | 9104-XX-3X | 9104-XX-4X |
|---------------------|------------|------------|------------|
| VDC/peak AC | 2000/3000 | 3000/3000 | 4000/4000 |

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

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