RI-02 SMD Series Dry Reed Switch

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Ultra-miniature dry-reed switch hermetically sealed in a gas filled envelope. Single-pole, single-throw (SPST) type, having normally open contacts, and containing two magnetically actuated reeds.

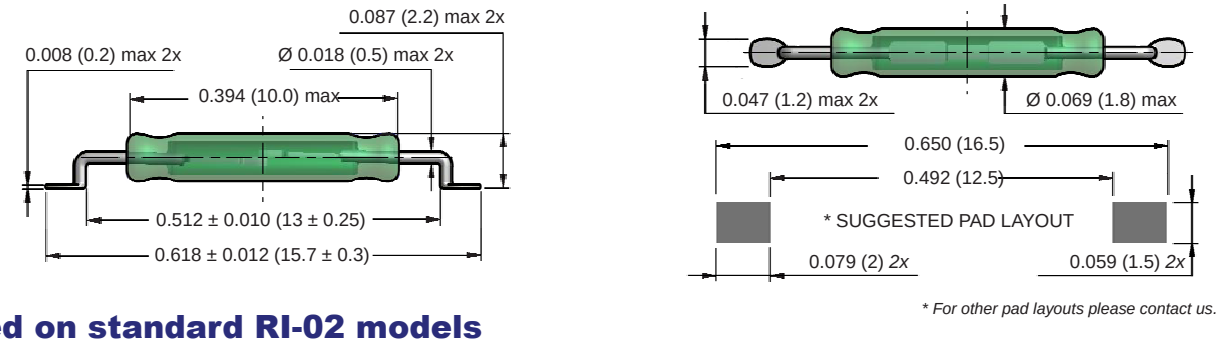
The switch is of the double-ended type and may be actuated by an electro-magnet, a permanent magnet or combination of both. The device is intended for use in senors, relays, pulse counters or similar devices.

RI-02 SMD Series Features

- Ideal for general purpose reed relays and sensors.
- Contact layers: ruthenium on gold
- Superior glass-to-metal seal and blade alignment
- RoHS Compliant

Dimensions for RI-02 SMD Series

All Dimension in inches (mm) nominal



** For other pad layouts please contact us.*

Based on standard RI-02 models

Coils

All characteristics are measured using the Philips Standard Coil. For definitions of the Philips Standard Coil, refer to *"Application Notes"* in the *Reed Switch Technical & Application Information* Section of this catalog.

Life expectancy and reliability

The life expectancy data given below are valid for a coil energized at 1.25 times the published maximum operate value for each type in the RI-02 series.

No load conditions (operating frequency: 100Hz)

Life expectancy: min. 10^8 operations with a failure rate of less than 2 x 10^{-10} with a confidence level of 90%.
End of life criteria:
Contact resistance > 1Ω after 2 ms
Release time > 2 ms (latching or contact sticking).

Loaded conditions (resistive load: 5 V; 100 mA; operating frequency: 125 Hz)

Life expectancy: min. 2 x 10^6 operations with a failure rate of less than 10^{-8} with a confidence level of 90%.
End of life criteria:
Contact resistance > 1Ω after 2.5 ms
Release time > 1 ms (latching or contact sticking).

Loaded conditions (resistive load: 20 V; 500 mA; operating frequency: 125 Hz)

Life expectancy: min. 2 x 10^6 operations with a failure rate of less than 10^{-7} with a confidence level of 90%.
End of life criteria:
Contact resistance > 2Ω after 2.5 ms
Release time > 2.5 ms (latching or contact sticking).
Switching different loads involves different life expectancy and reliability data. Further information is available on request.

Mechanical Data

Contact arrangement is normally open; lead finish is tinned; net mass is approximately 90mg; and can be mounted in any position.

Shock

The switches are tested in accordance with "IEC 68-2-27", test Ea (peak acceleration 100 G; half sinewave; duration 11ms). Such a shock will not cause an open switch (no

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Technical Specifications

Parameters	Test Conditions	Units	RI-02
Operating Characteristics			
Operate Range		AT	7-21
Release Range		AT	3 (min)
Operate Time - including Bounce (typ.)		ms	0.30
Bounce Time (typ.)		ms	0.10
Release Time (max)		μs	70
Resonant Frequency (typ.)		Hz	10800
Electrical Characteristics			
Switched Power (max)		W	10
Switched Voltage DC (max)		V	200
Switched Voltage AC, RMS value (max)		V	140
Switched Current DC (max)		mA	500
Switched Current AC, RMS value (max)		mA	500
Carry Current DC (max)		A	0.5
Breakdown Voltage (min)		V	200 - 230
Contact Resistance (initial max.)		mΩ	150
Contact Resistance (initial typ.)		mΩ	120
Contact Capacitance (max)	without test coil	pF	0.3
Insulation Resistance (min)	RH ≤ 45%	MΩ	10^6

magnetic field present) to close, nor a switch kept closed by an 80 AT coil to open.

Vibration

The switches are tested in accordance with “IEC 68-2-26”, test Fc (acceleration 10G; below cross-over-frequency 57 to 62 Hz; amplitude 0.75 mm; frequency range 10 to 2000 Hz; duration 90 minutes.) Such a vibration will not cause an open switch (no magnetic field present) to close, nor a switch kept closed by an 80 AT coil to open.

Mechanical Strength

The robustness of the terminations is tested in accordance with “IEC 68-2-21”, test Ua1 (load 10 N).

Operating and Storage Temperature

Operating ambient temperature; min: -55°C; max: +125°C. Storage temperature; min: -55°; max: +125°C. Note: Temperature excursions up to 150°C may be permissible. For more information contact your nearest Comus Group sales office.

Soldering

The switch can withstand soldering heat in accordance with “IEC 68-2-20”, test Tb, method 1B: solder bath at 350 ± 10°C for 3.5 ± 0.5 s. Solderability is tested in ac- cordance with “IEC 68-2-20” test Ta, method 3: solder globule temperature 235°C; ageing 1b: 4 hours steam.