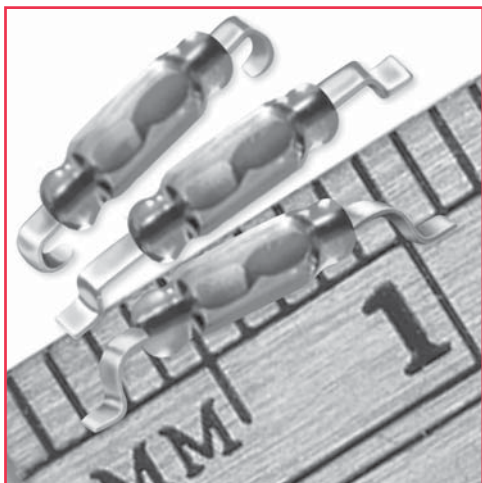


RI-80 SMD Series Dry Reed Switch



RI-80 SMD Series

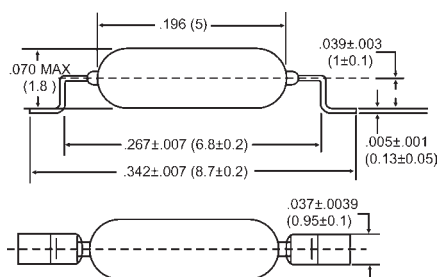
Ultra-micro dry-reed switch hermetically sealed in a gas-filled glass envelope. Single-pole, single-throw (SPST) type, having normally open contacts, and containing two magnetically actuated reeds.

The switch is of the double-ended type and may be actuated by an electromagnet, a permanent magnet or a combination of both.

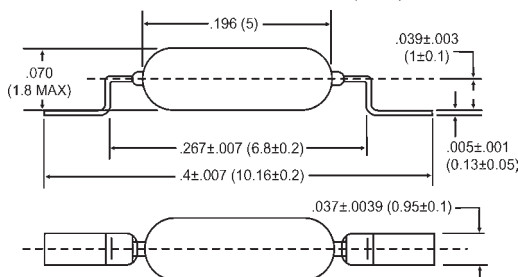
RI-80 SMD Series Features

- ◆ Ideal for proximity sensors, telecom & medical applications
- ◆ World's smallest high quality reed switch
- ◆ Contact layers: Gold, sputtered ruthenium
- ◆ Superior glass-to-metal seal and blade alignment

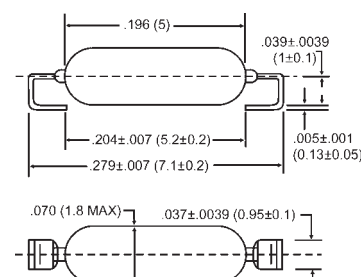
Dimensions in inches (mm)



RI-80 SMD G1 Model



RI-80 SMD G2 Model



RI-80 SMD J-Lead Model

General data for RI-80 SMD

AT-Customization

The RI-80 SMD can be supplied in operate ranges to customer specification.

Coils

All characteristics are based on unmodified switches. The switches are defined using the Philips Standard Coil. For more information, see *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-80 series.

No-load conditions (operating frequency: 100 Hz)

Life expectancy: min. 10^8 operations with a failure rate of less than 2×10^{-9} with a confidence level of 90%.

End of life criteria:

- Contact resistance $> 1\Omega$ after 2 ms
- Release time > 2 ms (latching or contact sticking).

Loaded conditions (Resistive load: 5V; 100 mA; operating frequency: 170 Hz)

Life expectancy: min. 10^7 operations with a failure rate of less than 10^{-8} with a confidence level of 90%.

End of life criteria:

- Contact resistance $> 1\Omega$ after 4 ms
- Release time $> .7$ ms (latching or contact sticking)

Switching different loads involves different life expectancy and reliability data. Further information available upon request.

Mechanical Data

Contact arrangement is normally open; lead finish is tinned; and can be mounted in any position.

Shock

The switches are tested in accordance with "IEC 68-2-27", test Ea (peak acceleration 150 G, half sine wave; duration 11 ms). Such a shock will not cause an open switch (no magnetic field present) to close nor a switch kept closed by an 80 AT coil to open.

RI-80 SMD Series Dry Reed Switch

Model Number		RI-80 SMD	
Parameters	Test Conditions	Units	
Operating Characteristics			
Operate Range**		AT	5-15**
Release Range**		AT	2-13**
Operate Time - including bounce (typ.)	(energization)	ms	0.35 (20 AT)
Bounce Time (typ.)	(energization)	ms	0.1 (20 AT)
Release Time (max)	(energization)	μ s	20 (20 AT)
Resonant Frequency (typ.)		Hz	21.300
Electrical Characteristics			
Switched Power (max)		W	5
Switched Voltage DC (max)		V	175*
Switched Voltage AC, RMS value (max)		V	140
Switched Current DC (max)		mA	350
Switched Current AC, RMS value (max)		mA	250
Carry Current DC; AC, RMS value (max)		A	0.5
Breakdown Voltage (min)		V	230
Contact Resistance (initial max)	(energization)	m Ω	160 (20 AT)
Contact Resistance (initial typ.)	(energization)	m Ω	140 (20 AT)
Contact Capacitance (max)	without test coil	pF	0.45
Insulation Resistance (min)	RH $\leq$ 45%	M Ω	10 ⁶

* 200V for switches with AT-on value $> 10AT$.

** AT values of switches before SMD forming in PSC coil.

Vibration

The switches are tested in accordance with “IEC 68-2-6”, 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 10N).

Operating and Storage Temperature

Operating ambient temperature; min: -55°C;
max: +125°C.

Storage temperature; min: -55°C; max: +125°C.

Note: Temperature excursions up to 150°C may be permissible. For more information contact your nearest Coto Technology sales office.

Soldering

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

Welding

The leads can be welded.