RI-80 SMD Series Dry Reed Switch

**RI-80 SMD Series**

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

**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 $2 \times 10^{-9}$ 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 $1 \times 10^{-8}$ 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 sinewave; 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

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Test Conditions</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI-80 SMD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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) µs 20 (20 AT)
- **Resonant Frequency (typ.)**: Hz 21300

**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 ≤ 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 crossover 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 ±10°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.

**ORDERING INFORMATION**

RI80SMD-XXXX-YY

- **Lead Configuration Subset**:
  - G1 for Gull Wing version 1
  - G2 for Gull Wing version 2
  - J for J-Lead version
- **Series**
- **AT Ranges**

**Customer specific AT ranges and modifications are also possible. Please contact your local sales representative.**