Surface Mount Reed Switches
High Power > MLSM-4

MLSM-4 15.2mm Surface Mount Reed Switch

Description
The MLSM-4 Reed Switch is a miniature, surface mounting, normally open switch with a 15.24mm long x 2.66mm diameter (0.600" x 0.105") glass envelope. It is capable of switching 200Vdc at 20W with close differential (CD) characteristics.

This reed switch is the surface mount version of the MLRR-4. It has high insulation resistance of 10^10 ohms minimum and contact resistance less than 100 milli-ohms. It can handle lamp loads up to 2W @ 14V with no suppression circuitry.

Features
- Surface mount, normally open switch
- Capable of switching 200Vdc or 1A at up to 20W
- Available sensitivity 17-38 AT
- Close differential AT between the PI and DO value.
- Capable of switching small Incandescent lamp loads

Benefits
- Hermetically sealed switch contacts are not affected by and have no effect on their external environment
- Excellent for switching microcontroller logic level loads
- Zero operating power required for contact closure

Applications
- Position Sensing
- Level sensing
- Security
- Office Equipment
- Light inductive loads
- Lamp Loads up to 2W @ 14V

Switch Type
- Contact Form: A (SPST-NO)
- Materials: Body: Glass
  Leads: Tin-plated Ni-Fe wire

Electrical Ratings

<table>
<thead>
<tr>
<th>Contact Rating ³</th>
<th>W/V/VA - max.</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage ³</td>
<td>Switching ²</td>
<td>Vdc - max.</td>
</tr>
<tr>
<td></td>
<td>Breakdown ⁴</td>
<td>Vac - max.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vdc - min.</td>
</tr>
<tr>
<td>Current ³</td>
<td>Switching ²</td>
<td>Adc - max.</td>
</tr>
<tr>
<td></td>
<td>Carry</td>
<td>Aac - max.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adc - max.</td>
</tr>
<tr>
<td>Resistance</td>
<td>Contact, Initial Insulation</td>
<td>Ω - max.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ω - min.</td>
</tr>
<tr>
<td>Capacitance</td>
<td>Contact</td>
<td>pF - typ.</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating</td>
<td>°C</td>
</tr>
<tr>
<td></td>
<td>Storage ⁵</td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes:
1. Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
2. When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
3. Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
5. Storage Temperature - Long time exposure at elevated temperature may degrade solderability of the leads.
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Product Characteristics

Operating Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operate Time</td>
<td>0.7ms - max.</td>
</tr>
<tr>
<td>Release Time</td>
<td>0.2ms - max.</td>
</tr>
<tr>
<td>Shock</td>
<td>11ms 1/2 sine wave</td>
</tr>
<tr>
<td>Vibration</td>
<td>50-2000 Hertz</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>6.0kHz - typ.</td>
</tr>
</tbody>
</table>

Magnetic Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pull-In Range</td>
<td>17-38 Ampere Turns</td>
</tr>
<tr>
<td>Rating Sensitivity</td>
<td>20 Ampere Turns</td>
</tr>
<tr>
<td>Test Coil</td>
<td>L4989</td>
</tr>
</tbody>
</table>

Notes:
1. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available. These AT values are the before modification AT of the MLRR-4.
4. Rating Sensitivity - The value at which contact ratings and operating characteristics are determined. Derating may be required below this value.

Drop-Out vs. Pull-In Chart

Note: Chart represents the range of Drop-Out, min to max, for a given Pull-in value of the MLRR-4 prior to modification into the MLSM-4.

Part Numbering System

MLSM-4R - 17-23

Series

Packaging
R = Tape and Reel
B = Bulk

AT Range
17-23 AT
17-28 AT
22-28 AT
22-33 AT
27-33 AT
27-38 AT
32-38 AT

Example: 17-23 AT product in Bulk packaging is MLSM-4B-17-23

Packaging

<table>
<thead>
<tr>
<th>Packaging Option</th>
<th>Packaging Specification</th>
<th>Quantity</th>
<th>Quantity and Packaging Code</th>
<th>Taping Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape and Reel</td>
<td>EIA-RS-481-1</td>
<td>3000</td>
<td>R</td>
<td>32mm</td>
</tr>
<tr>
<td>Bulk</td>
<td>N/A</td>
<td>200</td>
<td>B</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note: These AT values are the before-modification values of the bare reed switch.
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TAPE DIMENSIONS mm (inch)

REEL DIMENSIONS mm (inch)

1. ALL TAPE & SPROCKET HOLE DIMENSIONS ARE PER EIA-481 UNLESS NOTED
2. ALL POCKET DIMENSIONS ARE ±0.10 mm
3. ALL DIMENSIONS ARE TO INSIDE OF POCKET