Description

The MLSM-3 Reed Switch is a miniature, surface mounting, normally open switch with a 15.24mm long x 2.54mm diameter (0.600” x 0.100”) glass envelope, and capable of switching 200Vdc at 20W with close differential (CD) characteristics. This reed switch is a surface mount version of the MLRR-3. It has high insulation resistance of $10^{10}$ ohms minimum and contact resistance less than 100 milli-ohms. It can handle light inductive loads with no suppression circuitry.

Features

- Surface mount, miniature size, normally open switch
- Available sensitivity 17-38 AT
- Capable of switching 200Vdc or 1A at up to 20W
- Close differential AT between PI and DO value
- Maximum switched current of 1.0Amps
- 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

Benefits

- Position Sensing
- Limit Switching
- Security
- Office Equipment
- Light inductive loads

Applications

- Switch Type
  - A (SPST-NO)

Materials

- Body: Glass
- Leads: Tin-plated Ni-Fe wire

Electrical Ratings

<table>
<thead>
<tr>
<th>Contact Rating ¹</th>
<th>W/VA - max.</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage ³</td>
<td>Vdc - max.</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Vac - max.</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>Vdc - min.</td>
<td>250</td>
</tr>
<tr>
<td>Current ³</td>
<td>Adc - max.</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Aac - max.</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Adc - max.</td>
<td>1.2</td>
</tr>
<tr>
<td>Resistance</td>
<td>Ω - max.</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Ω - min.</td>
<td>$10^{15}$</td>
</tr>
<tr>
<td>Capacitance</td>
<td>pF - typ.</td>
<td>0.4</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating °C</td>
<td>-40 to +125</td>
</tr>
<tr>
<td></td>
<td>Storage °C</td>
<td>-65 to +125</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.
MLSM-3 15.2mm Surface Mount Reed Switch

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>Ampere Turns</td>
</tr>
<tr>
<td>Rating Sensitivity</td>
<td>Ampere Turns</td>
</tr>
<tr>
<td>Test Coil</td>
<td>L4989</td>
</tr>
</tbody>
</table>

Part Numbering System

MLSM-3R - 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-3B-17-23

Note: These AT values are the before-modification AT of the MLRR-3.

Additional Information

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-3 prior to modification into the MLSM-3.

Part Numbering System

MLSM-3R - 17-23

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R = Tape and Reel
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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-3B-17-23

Note: These AT values are the before-modification values of the bare reed switch.

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>
MLSM-3 15.2mm Surface Mount Reed Switch

**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 ±(0.004) 0.10mm
3. ALL DIMENSIONS ARE TO INSIDE OF POCKET