

# MDSM-DT 14.7mm Surface Mount Changeover Reed Switch



## Description

The MDSM-DT Reed Switch is a miniature, surface mounting, changeover switch with a 14.73mm long x 2.54mm diameter (0.580" x 0.100") glass envelope. It is capable of switching 175Vdc at 5W. The MDSM-DT has an insulation resistance of  $10^9$  ohms minimum and contact resistance less than 100 milli-ohms. This reed switch is a surface mount version of the MDRR-DT.

## Features

- Surface mount SPDT changeover switch
- Capable of switching 175Vdc or 0.25A at up to 5W
- Available sensitivity 15-30 AT

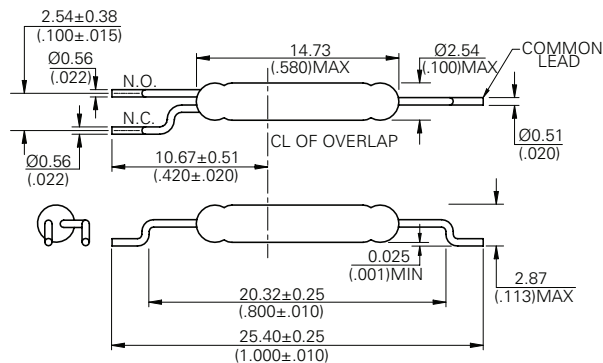
## Agency Approvals

| Agency | Agency File Number | Ampere-Turns Range |
|--------|--------------------|--------------------|
| cULUS  | E47258<br>E471070  | 15-30 AT           |

**Note:** Contact Littelfuse for specific agency approval ratings.

## Dimensions

Dimensions in mm (inch)



**Note:** Land pattern is Littelfuse recommendation only. User is responsible for proper PCB design.

## Benefits

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

## Applications

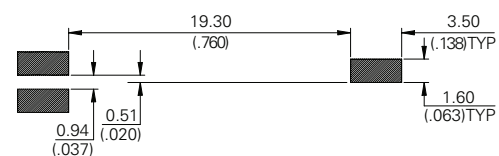
- Position Sensing
- Level Sensing
- Industrial Controls
- Office Equipments
- Mobile Phones

## Switch Type

|              |                                             |
|--------------|---------------------------------------------|
| Contact Form | C (SPDT-CO)                                 |
| Materials    | Body: Glass<br>Leads: Tin-plated Ni-Fe wire |

**Note:** SPDT-CO = Single-Pole, Double-Throw, Change-Over

### RECOMMENDED LAND PATTERN



## Electrical Ratings

|                             |                             |             |             |
|-----------------------------|-----------------------------|-------------|-------------|
| Contact Rating <sup>1</sup> |                             | W/VA - max. | 5           |
| Voltage <sup>3</sup>        | Switching <sup>2</sup>      | Vdc - max.  | 175         |
|                             |                             | Vac - max.  | 120         |
|                             | Breakdown <sup>4</sup>      | Vdc - min.  | 200         |
| Current <sup>3</sup>        | Switching <sup>2</sup>      | Adc - max.  | 0.25        |
|                             |                             | Aac - max.  | 0.18        |
|                             | Carry                       | Adc - max.  | 1.50        |
| Resistance                  | Contact, Initial Insulation | Ω - max.    | 0.100       |
|                             |                             | Ω - min.    | $10^9$      |
| Capacitance                 | Contact                     | pF - typ.   | 1.0         |
| Temperature                 | Operating                   | °C          | -40 to +125 |
|                             | Storage <sup>5</sup>        | °C          | -65 to +125 |

### 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.
4. Breakdown Voltage - per MIL-STD-202, Method 301.
5. Storage Temperature - Long time exposure at elevated temperature may degrade solderability of the leads.

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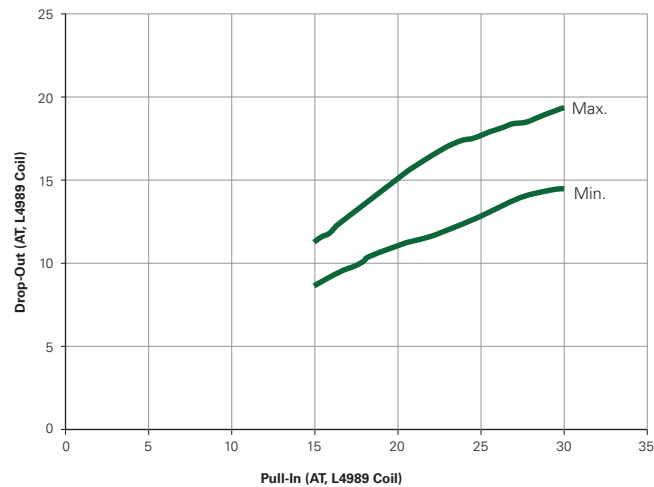
### Product Characteristics

| Operating Characteristics       |                    |                |
|---------------------------------|--------------------|----------------|
| Operate Time <sup>1</sup>       |                    | 0.7ms - max.   |
| Release Time <sup>1</sup>       |                    | 1.0ms - max.   |
| Shock <sup>2</sup>              | 11ms 1/2 sine wave | 50G - max.     |
| Vibration <sup>2</sup>          | 50-2000 Hertz      | 30G - max.     |
| Resonant Frequency              |                    | 11.0kHz - typ. |
| Magnetic Characteristics        |                    |                |
| Pull-In Range <sup>3</sup>      | Ampere Turns       | 15-30          |
| Rating Sensitivity <sup>4</sup> | Ampere Turns       | 20             |
| Test Coil                       |                    | L4989          |

#### Notes:

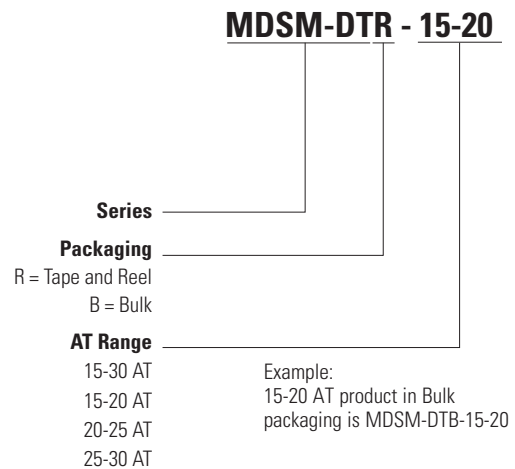
1. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
2. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available. These AT values are the before modification AT of the MDRR-DT.
4. 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 MDRR-DT prior to modification into the MDSM-DT.

### Part Numbering System



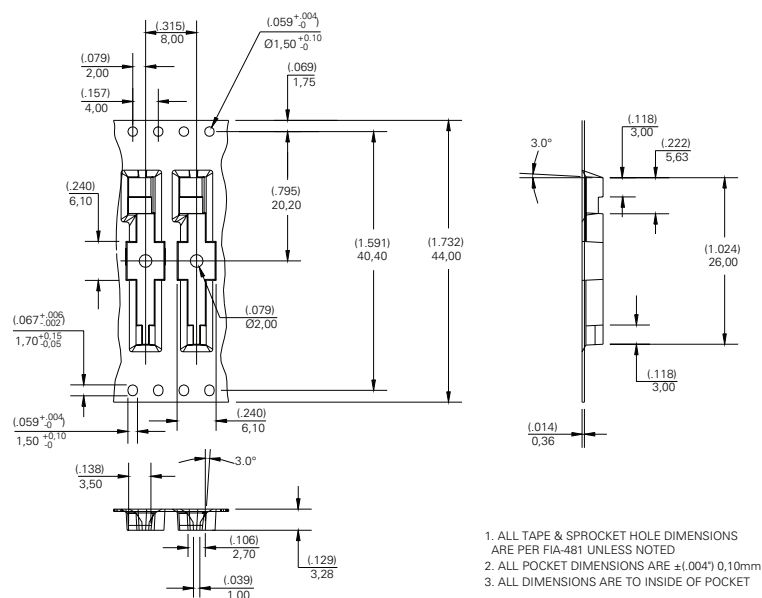
**Note:** These AT values are the before-modification values of the bare reed switch.

### Packaging

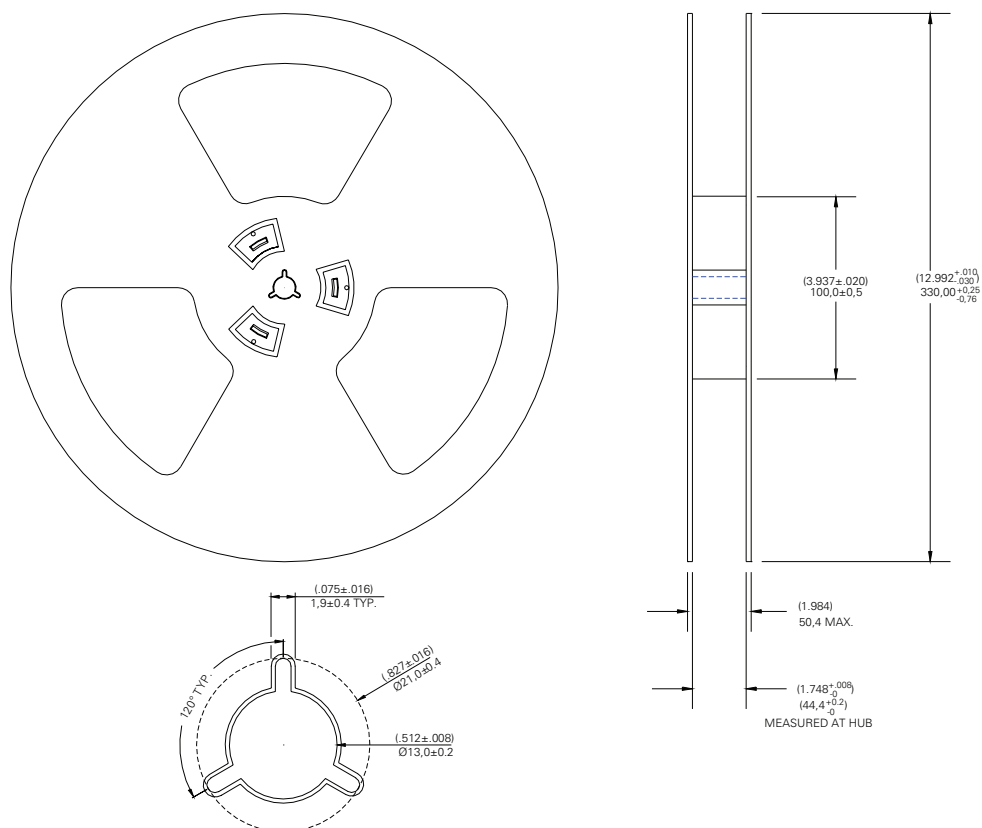
| Packaging Option | Packaging Specification | Quantity | Quantity and Packaging Code | Taping Width |
|------------------|-------------------------|----------|-----------------------------|--------------|
| Tape and Reel    | EIA-RS-481-1            | 3000     | R                           | 32mm         |
| Bulk             | N/A                     | 200      | B                           | N/A          |

# MDSM-DT 14.7mm Surface Mount Changeover Reed Switch

### TAPE DIMENSIONS mm (inch)



## REEL DIMENSIONS mm (inch)



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| <u><a href="#">MDSM-DTB 25-30</a></u> | <u><a href="#">MDSM-DTR 15-20</a></u> | <u><a href="#">MDSM-DTB 15-30</a></u> | <u><a href="#">MDSM-DTR 20-30</a></u> | <u><a href="#">MDSM-DTR 25-30</a></u> | <u><a href="#">MDSM-DTB 15-25</a></u> |
| <u><a href="#">MDSM-DTR-15-25</a></u> | <u><a href="#">MDSM-DTR-20-30</a></u> | <u><a href="#">MDSM-DTB-15-25</a></u> | <u><a href="#">MDSM-DTB-20-30</a></u> | <u><a href="#">MDSM-DTB-10-15</a></u> | <u><a href="#">MDSM-DTR-10-15</a></u> |