

# MDRR-DT 14.7mm Miniature Changeover Reed Switch



## Description

The MDRR-DT Reed Switch is a miniature changeover switch with a 14.73mm long x 2.54mm diameter (0.580" x 0.100") glass envelope, capable of switching 175Vdc at 5W. It has insulation resistance of  $10^8$  ohms minimum, and contact resistance less than 100 milli-ohms. The MDRR-DT is available in surface mount version, that is, MDSM-DT.

## Features

- Miniature SPDT changeover switch
- Capable of switching 175Vdc or 0.25A at up to 5W
- Available sensitivity range 10-30 AT

## Benefits

- Hermetically sealed switch contacts are not affected by and have no effect on their external environment
- Can be used as changeover or normally closed contact
- Zero operating power required for contact closure
- Excellent for switching microcontroller logic level loads

## Agency Approvals

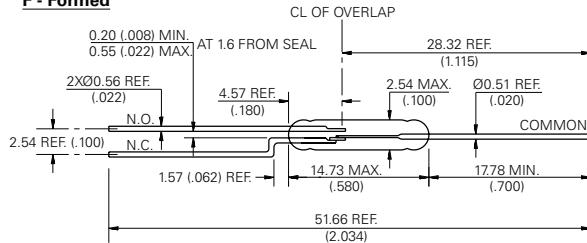
| Agency       | Agency File Number | Ampere-Turns Range |
|--------------|--------------------|--------------------|
| <b>cULUS</b> | E47258<br>E471070  | 10-30 AT           |

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

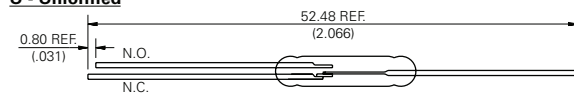
## Dimensions

Dimensions in mm (inch)

### F - Formed



### U - Unformed



## Applications

- Position Sensing
- Reed Relays
- Industrial Controls
- Office Equipments
- Home Appliances
- Security

## 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

## 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       | $\Omega$ - max.    | 0.100       |
|                             | Insulation             | $\Omega$ - min.    | $10^8$      |
| Capacitance                 | Contact                | pF - typ.          | 1           |
| Temperature                 | Operating              | $^{\circ}\text{C}$ | -40 to +125 |
|                             | Storage <sup>5</sup>   | $^{\circ}\text{C}$ | -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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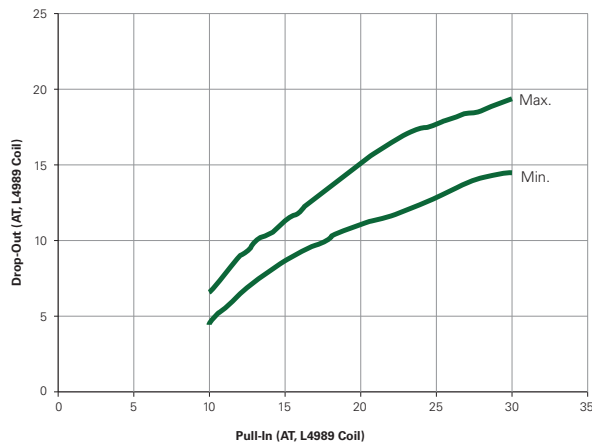
### Product Characteristics

| Operating Characteristics       |                    |                |
|---------------------------------|--------------------|----------------|
| Operate Time <sup>1</sup>       |                    | 0.7ms - max.   |
| Release Time <sup>1</sup>       |                    | 1ms - 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       | 10-30          |
| Rating Sensitivity <sup>4</sup> | Ampere Turns       | 20             |
| Test Coil                       |                    | L4989          |

#### Notes:

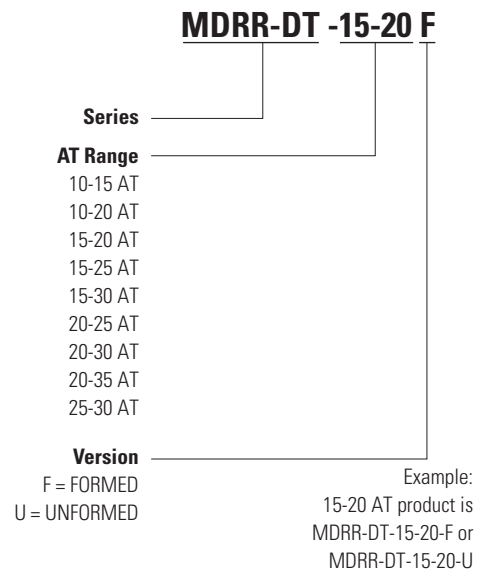
1. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
2. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available.
4. Rating Sensitivity - The value at which contact ratings and operating characteristics are determined. Derating may be required below this value.
5. Custom modifications of forming and/or cutting of reed switches are available. Please contact Littelfuse.

### Drop-Out vs. Pull-In Chart



**Note:** Chart represents the range of Drop-Out, min to max for a given Pull-In value.

### 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 |
|------------------|-------------------------|----------|-----------------------------|--------------|
| Bulk             | Bulk                    | 1000     | N/A                         | N/A          |