# MDSM-10
## 10.2mm Sub-miniature Surface Mount
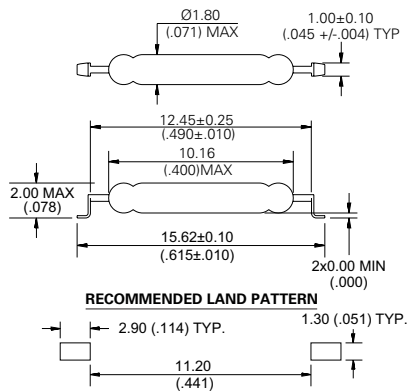
RoHS  c**UL**us

## Description

The MDSM-10 Reed Switch is a sub-miniature, surface mounting, normally open switch with a 10.16mm long x 1.80mm diameter (0.400" x 0.071") glass envelope, capable of switching 200Vdc at 10W.

This reed switch is a surface mount version of the MDSR-10. It has high insulation resistance of $10^{12}$ ohms minimum and low contact resistance of less than 120milli-ohms.

## Features & Benefits

- Surface mounting normally open switch
- Capable of switching 200Vdc or 0.5A at up to 10W
- Low, stable contact resistance
- Available sensitivity 10-25 AT
- Hermetically sealed switch contacts are not affected by

and have no effect on their external environment
- Low space requirement
- Zero operating power required for contact closure
- Excellent for switching microcontroller logic level loads

## Applications

- Position Sensing
- Level Sensing
- Security
- Metering

### Agency Approvals

| Agency | Agency File Number | Ampere-Turns Range |
|---|---|---|
| c**UL**us | E47258 E471070 | 10-25 AT |

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

## Dimensions

Dimensions in mm (inch)

Ø1.80 (.071) MAX
1.00±0.10 (.045 +/-.004) TYP
12.45±0.25 (.490±.010)
10.16 (.400)MAX
2.00 MAX (.078)
15.62±0.10 (.615±.010)
2x0.00 MIN (.000)

**RECOMMENDED LAND PATTERN**

2.90 (.114) TYP.
1.30 (.051) TYP.
11.20 (.441)

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

### Switch Type

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

**Note:** SPST-NO = Single-pole, single-throw, normally open

## Electrical Ratings

| | | | |
|---|---|---|---|
| **Contact Rating** [1] | | W/VA - max. | 10 |
| **Voltage** [3] | Switching [2] | Vdc - max. Vac - max. | 200 140 |
| | Breakdown [4] | Vdc - min. | 250 |
| **Current** [3] | Switching [2] | Adc - max. Aac - max. | 0.50 0.35 |
| | Carry | Adc - max. | 1.00 |
| **Resistance** | Contact, Initial Insulation | Ω - max. Ω - min. | 0.12 $10^{12}$ |
| **Capacitance** | Contact | pF - typ. | 0.2 |
| **Temperature** | Operating Storage [5] | °C °C | -40 to +125 -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.

**Littelfuse**®

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## 10.2mm Sub-miniature Surface Mount

## Product Characteristics

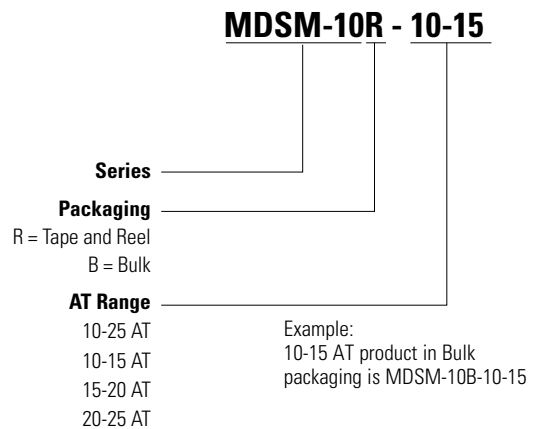| Operating Characteristics | | |
|---|---|---|
| Operate Time [1] | | 0.5ms - max. |
| Release Time [1] | | 0.1ms - max. |
| Shock [2] | 11ms 1⁄2 sine wave | 100G - max. |
| Vibration [2] | 50-2000 Hertz | 30G - max. |
| Resonant Frequency | | 6.5kHz - typ. |
| **Magnetic Characteristics** | | |
| Pull-In Range [3] | Ampere Turns | 10-25 |
| Rating Sensitivity [4] | Ampere Turns | 15 |
| 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 MDSR-10.
**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
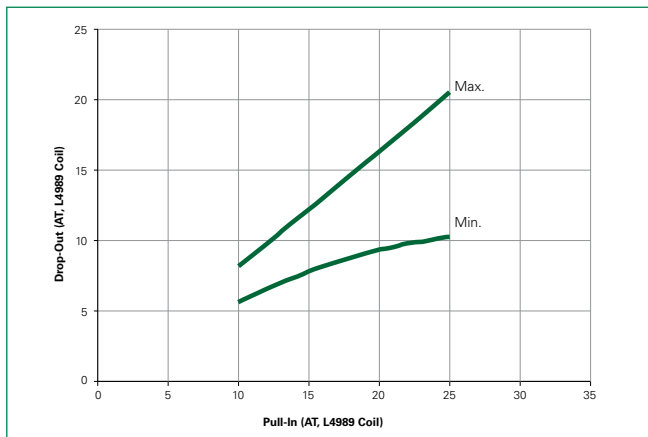


**Note:** Chart represents the range of Drop-Out, min to max, for a given Pull-in value of the MDSR-10 prior to modification into the MDSM-10.

### Part Numbering System

**MDSM-10R - 10-15**

**Series**

**Packaging**
R = Tape and Reel
B = Bulk

**AT Range**
10-25 AT
10-15 AT
15-20 AT
20-25 AT

Example:
10-15 AT product in Bulk
packaging is MDSM-10B-10-15

**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 |

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# MDSM-10
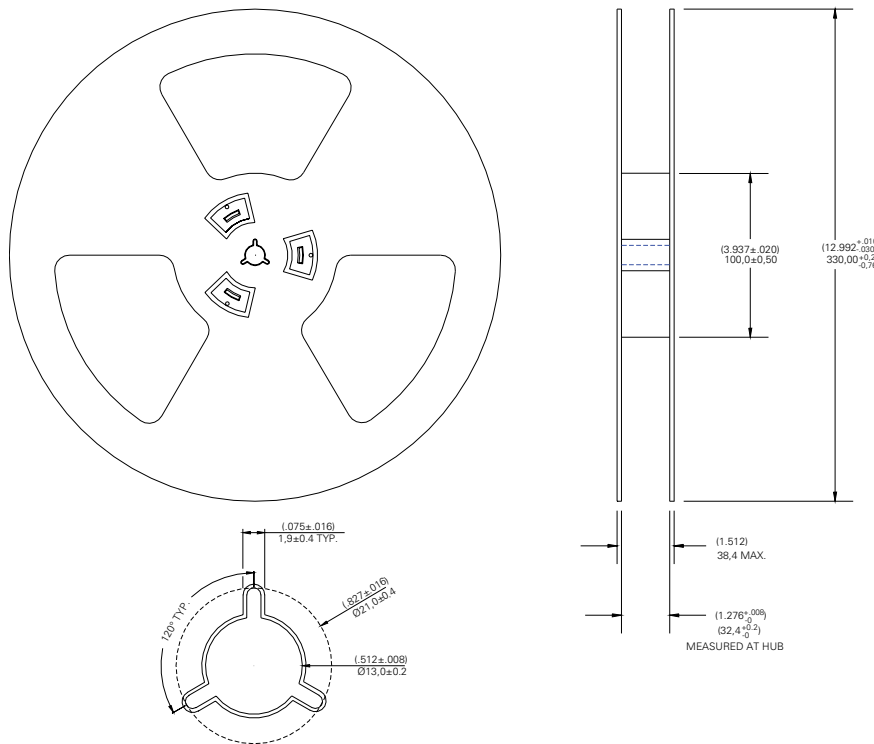## 10.2mm Sub-miniature Surface Mount

## TAPE DIMENSIONS mm (inch)
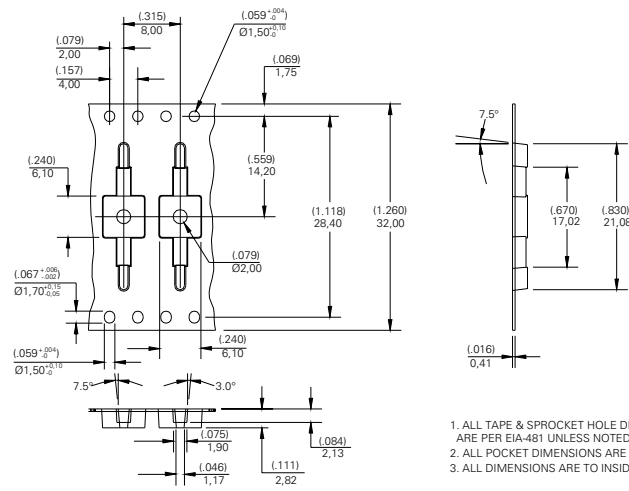


1. ALL TAPE & SPROCKET HOLE DIMENSIONS
   ARE PER EIA-481 UNLESS NOTED
2. ALL POCKET DIMENSIONS ARE ±(.004") 0,10mm
3. ALL DIMENSIONS ARE TO INSIDE OF POCKET

## REEL DIMENSIONS mm (inch)

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