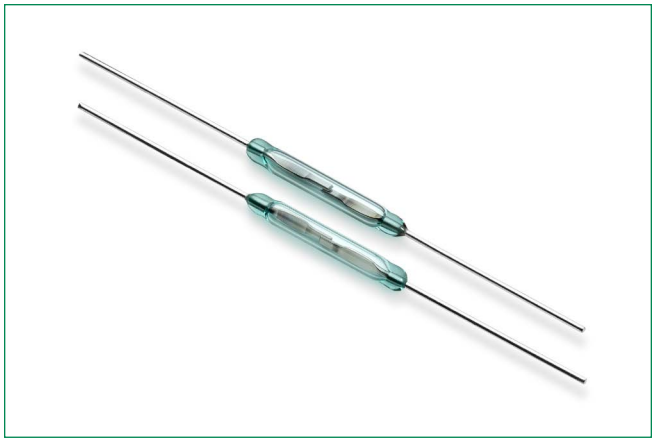
MATE-12B Series

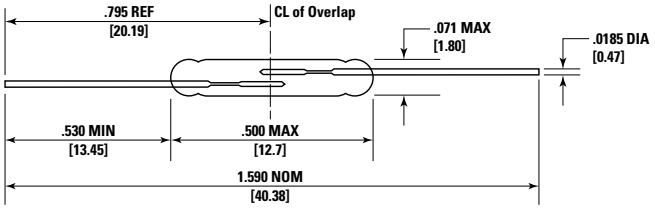
Long life > High Reliability > 12.7mm > Sub-miniature



Additional Information

Resources | Accessories | Samples

Dimension in inch [mm]



Description

The MATE-12B Reed Switch is a sub-miniature, normally open switch with a 12.70 mm long x 1.80 mm diameter (0.500" x 0.071") glass envelope, capable of switching 200 Vdc at 10 W. It has high insulation resistance of 10^{12} Ohms minimum and low contact resistance of less than 100 milli-Ohms.

Features & Benefits

- Prolong operating life cycles
- Hermitically sealed
- Miniature normally open switch
- cULus recognition
- RoHS compliant
- Extending end product operating life and reliability, ideal for Automatic Test Equipment (ATE)
- Suitable for various operating environment/application
- Saves PCB space and reduce overall weight for compact size and light weight end products
- Facilitates end product meeting/passing cULus test/ request
- Environment friendly

Applications

- Reed Relay particularly for ATE application that requires long life
- Limit switching
- Appliance applications that require long life and high reliability switch

Agency Approvals

Agency	Agency File Number	Ampere-Turns Range
c UL us	E47258 E471070	8–25 AT

Note: Contact Littelfuse for specific agency approval ratings.

Switch Type

Contact Form	Materials
A (SPST-NO)	Body: Glass Leads: Tin-plated Nickel Iron

Note:

SPST-NO = Single pole, single-throw, normally open

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Electrical Ratings

Contact Type			Normally Open
Contact Rating [1]		VA/Watt - max.	10
Voltage [3]	Switching [2] Breakdown [4]	Vdc - max. Vac - max. Vdc - min.	200 140 250
Current [3]	Switching [2] Carry	Adc - max. Aac - max. Adc - max.	0.5 0.35 1.0
Resistance	Contact, Initial Insulation	Ω - max. Ω - min.	0.100 10^{12}
Capacitance	Contact	pF - typ.	0.7
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 power 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 soldarability of the leads.

Product Characteristics

Operating Characteristics		
Operate Time [1]		0.6 ms - max.
Release Time [1]		0.2 ms - max.
Shock [2]	11ms 1/2 sine wave	100 G - max.
Vibration [2]	50-2000 Hertz	30 G - max.
Resonant Frequency		6250 Hz - typ.
Magnetic Characteristics		
Pull-In Range [3]	Ampere Turns	8–25 AT
Rating Sensitivity [4]	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.

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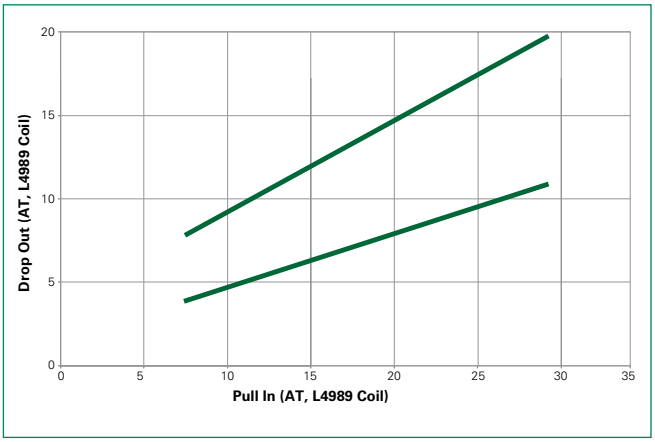
Drop-out vs. Pull-In Chart



Example:
10–20 Ampere turns Pull-In
5–15 Ampere turns Drop-Out
Note: The chart represents the range of Drop-Out, minimum to maximum for a given Pull-In value.

Part Numbering System

MATE-12B-10-15

Series

AT Range
8–13 AT
10–15 AT
12–18 AT
17–23 AT
15–20 AT
20–25 AT

Example:
10-15 AT product is MATE-12B-10-15
Note: These AT values are the before-modification values of the bare Reed Switch.

Life Expectancy

- 5 Vdc, 20 mA, 100 Hz: Life = 100M cycles min
- 5 Vdc, 40 mA, 200 Hz: Life = 150M cycles B10
- 1 Vdc, 10 mA, 200 Hz Life = 1B cycles min

Note: Life test details available upon request.

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
Bulk	Bulk	1000	N/A	N/A

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