

Dimensions in mm (inch)
Inward formed J-Shaped


Recommended Soldering Footprint, mm(inch)


## Description

The 59177 is an ultra-miniature overmolded reed switch $9.0 \mathrm{~mm} \times$ $2.5 \mathrm{~mm} \times 2.4 \mathrm{~mm}\left(0.354^{\prime \prime} \times 0.098^{\prime \prime} \times 0.094^{\prime \prime}\right)$ body with smallest type footprint. It is capable of switching 170 Vdc or 0.25 A at up to 10W. Available in select sensitivity ranges.
Note: The part can function with any of the Littelfuse provided magnets or actuators

## Features \& Benefits

- Ultra-miniature size
- Available in select sensitivities (operating distances)
- Thermoset overmold material for added robustness
- Solder reflow compliant to IPC-A-610 standard
- Suitable for pick and place
- No standby power requirement
- Operates through non-ferrous materials such as wood, plastic or aluminum
- Hermetically sealed, magnetically operated contacts
- Tape and reel packaging
- ATEX certified for use in European explosive atmospheres: II 3 G Ex nC IIC Gc


## Applications

| ■ Security and access control | - Process equipment |
| :--- | :--- |
| Metering | Battery powered consumer |
| electronics \& wearables appliances |  |
| ■ Proximity and limit sensing |  |
| Factory automation |  |

## Agency Approvals

| Agency | Agency File Number |
| :---: | :---: |
| ENus | E61760 |
| $\boxed{\varepsilon_{x}}$ | E471070 |

Note: Contact Littelfuse for specific agency approval ratings.

## 59177 Series <br> Ultra-miniature Overmolded Reed Switch

## Electrical Ratings

| Contact Type |  |  | Normally Open |
| :---: | :---: | :---: | :---: |
| Switch Type |  |  | 1 |
| Switch Type |  | VANatt - max. | 10 |
| Voltage ${ }^{3}$ | Switching ${ }^{2}$ <br> Breakdown ${ }^{4}$ | Vdc - max. <br> Vac - max. <br> Vdc - min. | $\begin{aligned} & 170 \\ & 120 \\ & 175 \end{aligned}$ |
| Current ${ }^{3}$ | Switching ${ }^{2}$ <br> Carry | Adc - max. <br> Aac - max. <br> Adc - max. | $\begin{aligned} & 0.25 \\ & 0.18 \\ & 0.50 \end{aligned}$ |
| Resistance | Contact, Initial Insulation | $\begin{aligned} & \Omega-\text { max. } . \\ & \Omega-\text { min. } \end{aligned}$ | $\begin{aligned} & 0.22 \\ & 10^{12} \end{aligned}$ |
| Capacitance | Contact | pF - typ. | 0.30 |
| Temperature | Operating | ${ }^{\circ} \mathrm{C}$ | -40 to +125 |
| Product Characteristics |  |  |  |
| Operate Time ${ }^{5}$ |  | ms - max. | 0.5 |
| Release Time ${ }^{5}$ |  | ms - max. | 0.2 |
| Shock ${ }^{6}$ | $11 \mathrm{~ms} 1 / 2$ sine | G - max. | 100 |
| Vibration ${ }^{6}$ | $50-2000 \mathrm{~Hz}$ | G - max. | 30 |

## 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. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
6. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.

Sensitivity Options (Using 57045 Actuator)

| Select Option |  | S |  |  | T |  |  | U |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Switch Type | Pull-In <br> AT Range | Activate <br> Distance (mm) | Deactivate Distance (mm) | Pull-In <br> AT Range | Activate <br> Distance (mm) | Deactivate Distance (mm) | Pull-In <br> AT Range | Activate <br> Distance (mm) | Deactivate Distance (mm) |
| 1 | Normally Open | 6-10 | 3.8-5.9 | 3.6-6.8 | 10-15 | 3.0-5.5 | 3.6-6.3 | 15-20 | 2.5-4.6 | 3.7-5.8 |

Note:

1. Pull-In AT Range: These AT values are the before molding and modification AT of the 59177.
2. The activation distance is average value post modification for the J type leads option Dv.

## Termination Specification

|  | Termination Options |
| :---: | :---: |
| Select Option | Description |
| D | J type leads, tape and reel |



## Part Numbering System




Note: The 57045 Actuator is sold separately.

Packaging

| Packaging Option | Packaging Specification | Quantity | Termination and Packaging Code | Taping Width |
| :---: | :---: | :---: | :---: | :---: |
| Tape and Reel | EIA-RS-481-1 | $3000 /$ reel | D | $16 \mathrm{~mm}(0.63$ ") |

