

### DESCRIPTION

Coto Technology's FR dry reed switch series is ideally suited for small switching signal applications. This switch has sputtered ruthenium contacts and an extraordinary seal strength, achieved by a patented laser sealing of the glass. In low level or dry switching environments, the FR reed switch typically provides > 1 billion operations.

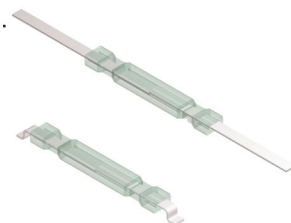
#### FEATURES

- Small size
- SMT-compatible
- Easily formed leads
- Sputtered ruthenium contacts
- Hermetically sealed contacts
- Fast switching speed - up to 500Hz
- Wide range of available magnetic sensitivities
- Rectangular glass for superior pick and place performance
- Lead-free Tin plating
- UL Recognized under UL File BP6039
- RoHS Compliant

Pb

#### APPLICATIONS

- Security
  - proximity sensing
  - smoke alarms
- Automotive
  - level sensor
  - lamp current sensor
- Relays



### SPECIFICATIONS

| Parameters                     | Conditions                                   | Min             | Typ              | Max  | Units                |
|--------------------------------|----------------------------------------------|-----------------|------------------|------|----------------------|
| <b>Contact Ratings</b>         |                                              |                 |                  |      |                      |
| Operate ampere turns range     | +/-1.5 NI                                    | 10              |                  | 30   | NI                   |
| Release ampere turns range     | +/-1.5 NI                                    | 5               |                  | 30   | NI                   |
| Switching Voltage              | Max DC/PeakAC Resistive                      |                 |                  | 200  | VDC                  |
| Switching Current              | Max DC/PeakAC Resistive                      |                 |                  | 0.5  | Amps                 |
| Carry Current                  | Max DC/PeakAC Resistive                      |                 |                  | 1.5  | Amps                 |
| Contact Rating                 | Max DC/PeakAC Resistive                      |                 |                  | 10   | VA                   |
| Life Expectancy                | 1V, 10mA Signal Level                        |                 | 1000             |      | x10 <sup>6</sup> Ops |
|                                | 10V, 10mA Low Level                          |                 | 500              |      | x10 <sup>6</sup> Ops |
|                                | 50V, 100mA Telecom Load                      |                 | 2                |      | x10 <sup>6</sup> Ops |
|                                | 100V, 100mA Rated Loads                      |                 | 2                |      | x10 <sup>6</sup> Ops |
| Static Contact Resistance      | 50mV, 10mA                                   |                 | 80               | 150  | mOhms                |
| Contact Material               |                                              |                 | Ru               |      |                      |
| <b>Switch Specifications</b>   |                                              |                 |                  |      |                      |
| Insulation Resistance          | 100V, 25°C, 40% RH                           | 10 <sup>9</sup> | 10 <sup>11</sup> |      | Ohms                 |
| Capacitance                    | Across Open Contacts                         |                 | 0.3              |      | pF                   |
| Dielectric Strength            | Between Contacts                             | 250             | 300              |      | VDC/Peak AC          |
| Operate Time, including bounce | At nominal coil voltage,<br>10Hz Square Wave |                 |                  | 0.5  | ms                   |
| Release Time                   | Zener-Diode Suppression                      |                 |                  | 0.2  | ms                   |
| <b>Environmental Ratings</b>   |                                              |                 |                  |      |                      |
| Storage Temperature            |                                              | -40             |                  | +125 | °C                   |
| Operating Temperature          |                                              | -40             |                  | +125 | °C                   |
| Soldering Temperature          |                                              |                 |                  | +260 | °C                   |
| Vibration Resistance           |                                              |                 |                  | 20   | Gs                   |
| Shock Resistance               | 11+/-1ms, 1/2 sine wave                      |                 |                  | 100  | Gs                   |
| Weight                         |                                              |                 | 0.13             |      | grams/unit           |

### ORDERING INFORMATION

A complete part number is represented by the digits below



#### Surface Mount

Refer to operating characteristics table for a complete part number.

#### DYAD

| Part #   | Operate Range (NI) <sup>1</sup> |
|----------|---------------------------------|
| FR2S1015 | 10 to 15                        |
| FE2S1020 | 10 to 20                        |
| FR2S1030 | 10 to 30                        |
| FR2S1520 | 15 to 20                        |
| FR2S1525 | 15 to 25                        |
| FR2S2025 | 20 to 25                        |

<sup>1</sup> Tolerance = +/-1.5NI

#### DYAD Surface Mount

| Part # | Operate Range (NI) <sup>1,2,3</sup> |
|--------|-------------------------------------|
| FR2024 | 10 to 15                            |
| FR2259 | 10 to 20                            |
| FR2282 | 10 to 30                            |
| FR2025 | 15 to 20                            |
| FR2249 | 15 to 25                            |
| FR2026 | 20 to 25                            |

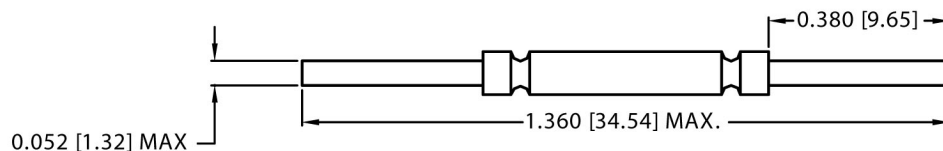
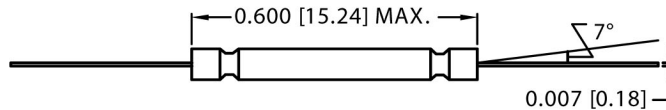
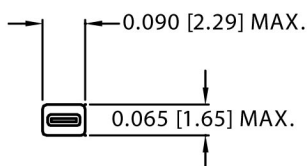
<sup>1</sup> Tolerance = +/-1.5NI

<sup>2</sup> Full Blade Sensitivity

<sup>3</sup> Surface Mount switches are packaged 3,000 parts per reel

### MECHANICAL DIMENSIONS

Dimensions in inches [mm]



## MECHANICAL DIMENSIONS

Dimensions in inches [mm]

