



### Features

- Small size  
Easily surface mountable
- Hermetically sealed
- Easily formed leads

### Applications

- Proximity Sensors
- Relays
- Telecommunications
- Automation control
- Medical

### Description

Clare's Ultra-Mini Dyad™ is well suited for small, signal switching applications. The small size lends itself to surface mountable applications; working well on higher density PC boards. The Ultra-Mini Dyad™ has sputtered ruthenium contacts and an extraordinary seal strength achieved by a patented laser sealing of the leads. In low level or dry switching environments, switches typically exceed 1 billion operations.

### Ordering Information

A complete part number is represented by the digits to the right. For example, UM2S1030 is an ULTRA-MINI DYAD™ with a minimum operate value of 10, and a maximum of 30. Refer to the switch operating specification charts for available ranges. Special ranges are available upon request.

UM2 S XX XX

Minimum Operate Value (NI) ——— Maximum Operate Value (NI)

Surface Mount Ultra-Mini Dyad  
Refer to operating characteristics table for complete part number.

### Standard Test Coil

	UM2
Part #	Coil-1
Coil Definition	NARM1 CTC01
Coil Resistance	1200Ω
Number of Turns	5,000
Wire Size	0.0399mm (AWG 46)
Bobbin Diameter (inside cell)	3.96mm
Winding Length	10.4mm

### Ultra-Mini DYAD™

Part #	Operate Range (NI) <sup>1</sup>
UM2S1015	10 to 15
UM2S1020	10 to 20
UM2S1030	10 to 30
UM2S1520	15 to 20
UM2S1525	15 to 25
UM2S2025	20 to 25

### Ultra-Mini DYAD™ Surface Mount

Part #	Operate Range (NI) <sup>1,2,3</sup>
UM2319	10 to 15
UM2315	10 to 20
UM2376	10 to 30
UM2325	15 to 20
UM2341	15 to 25
UM2378	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

## UM2

## Ratings (@ 25° C)

Parameter	Min	Typ	Max	Units
Switching Voltage	—	—	175	Volts
Switching Current	—	—	0.25	Amps
Carry Current	—	—	0.50	Amps
Switching Frequency	—	500	—	Hz
Contact Resistance	—	—	300	mΩ

<sup>1</sup> Derate Linearly 1.33 mw / °C<sup>2</sup> Derate Linearly 3.67 mw / °C

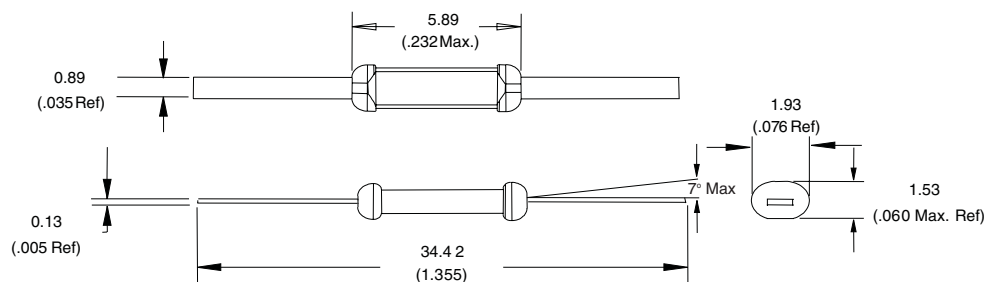
*Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for extended period may degrade the device and effect its reliability.*

## Specifications

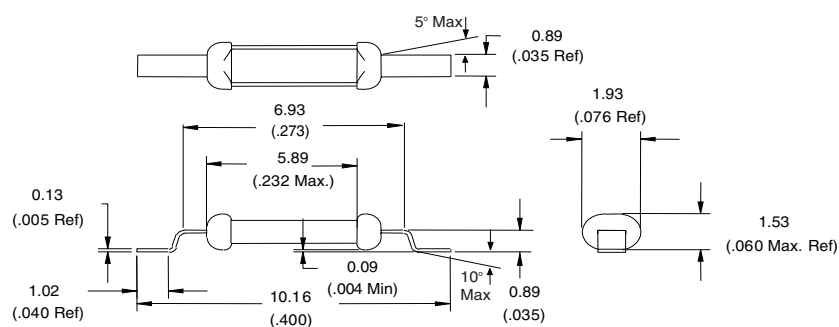
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
<b>Contact Ratings</b>						
Switching Voltage	Max DC/Peak AC Resist	VL	-	-	175	Volts
Switching Current	Max DC/Peak AC Resist	IL	-	-	0.25	Amps
Carry Current	Max DC/Peak AC Resist	IC	-	-	0.50	Amps
Contact Rating	Max DC/Peak AC Resist	-	-	-	5	VAs
Static Contact Resistance	100mV, 20mA	CR	-	.120	0.30	Ω
Contact Material		-	-	Ru	-	-
<b>Electrical Ratings</b>						
Operate Sensitivity	Full Blade Tolerance = ±1.5 NI	-	10	-	30	NI
Release Sensitivity	Full Blade Tolerance = ±1.5 NI	-	5	-	30	NI
Insulation Resistance	Between all isolated pins at 100V, 25°C, 40%RH	IR	10 <sup>9</sup>	10 <sup>11</sup>	-	W
Capacitance Across Open Contacts		-	-	0.3	-	pF
Dielectric Strength	Between Contacts	-	200	-	-	VDC/peak AC
Operate Time, including bounce	At Nominal coil voltage, 30 Hz Square Wave	TOP	-	0.4	-	msec.
Release Time	Zener-Diode Suppression	TREL	-	0.1	-	msec.
<b>Environmental Ratings</b>						
Operating Temperature		TO	-40	-	125	°C
Storage Temperature		TA	-40	-	125	°C
Soldering Temperature		-	-	-	260	°C
Vibration Resistance	10Hz-1000Hz	G	-	-	20	Gs
Shock Resistance	11±1ms, 1/2 Sine Wave	S	-	-	30	Gs

## Mechanical Dimensions

**Ultra-Mini DYAD™**

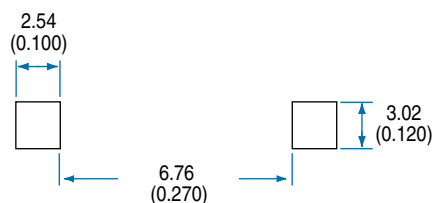


**Ultra-Mini DYAD™ SMT**



## Recommended Pad Sizes

**Ultra-Mini DYAD™ SMT**



Dimensions  
mm  
inches

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