SRC DEVICES

DESCRIPTION

SRC Devices' Overmolded 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 Overmolded Ultra Mini DYAD has sputtered ruthenium contacts and an extraordinary strength achieved by a patented laser sealing of the leads. In low level or dry switching enviroments, switches typically exceed 1 billion operations. In addition, the molding process provides a solid plastic outer shell. This plastic shell provides superior mechanical strength, eliminates concerns over handling glass switches; and provides an ideal solution for high speed, automated assembly environments.
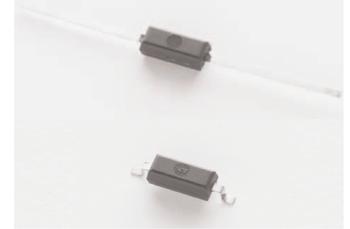
FEATURES
- Small size
- SMT-compatible
- Easily formed leads
- Sputtered ruthenium contacts
- Hermetically sealed contacts
- Fast switching speed - up to 500Hz
- Wide range of available magnetic sensitivities
- Superior mechanical strength
- Enhanced for better auto placement

APPLICATIONS
- Security
  - proximity sensors
  - smoke alarms
- Automotive
  - level sensor
  - lamp current sensor
- Relays

SPECIFICATIONS

All parameters are at 25°C unless otherwise stated

Parameters	Conditions	Min	Typ	Max	Units
Contact Ratings					
Operate ampere turns range	Full Blade Tolerance = +/-1.5 NI	10		30	NI
Release ampere turns range	Full Blade Tolerance = +/-1.5 NI	5		30	NI
Switching Voltage	Max DC/PeakAC Resistive			175	VDC
Switching Current	Max DC/PeakAC Resistive			0.25	Amps
Carry Current	Max DC/PeakAC Resistive			0.5	Amps
Contact Rating	Max DC/PeakAC Resistive			5	VA
Life Expectancy	1V, 10mA Signal Level		1000		$\times 10^6$ Ops
	10V, 10mA Low Level		500		$\times 10^6$ Ops
	50V, 100mA Telecom Load		2		$\times 10^6$ Ops
	100V, 100mA Rated Loads		2		$\times 10^6$ Ops
Static Contact Resistance	50mV, 10mA[1]		120	300	mOhms
Contact Material			Ru		
Switch Specifications					
Insulation Resistance[2]	100V, 25°C, 40% RH	10^9	10^{11}		Ohms
Capacitance	Across Open Contacts		0.3		pF
Dielectric Strength[4]	Between Contacts	200			VDC/Peak AC
Operate Time, including bounce	At nominal coil voltage, 10Hz Square Wave			0.4	ms
Release Time	Zener-Diode Suppression[3]			0.1	ms
Enviromental Ratings					
Storage Temperature		-40		+125	°C
Operating Temperature		-40		+125	°C
Soldering Temperature				+265	°C
Vibration Resistance	5Hz - 200Hz			20	Gs
Shock Resistance	11+/-1ms, sine wave			30	Gs
Shock Resistance - survivablility	11+/-1ms, sine wave			500	Gs

[1] Contact resistance measured with 4 terminal method, 1.1" between test leads

[2] >10^{12} ohms is available upon request

[3] A 24V zener in series with a diode across the coil

[4] 15 ampere turn minumum

Details provided on this datasheet are subject to change without notice

ORDERING INFORMATION

A complete part number is represented by the digits below

CM5S XX XX

Series
S = straight switch
Blank = SMT

Minimum Operate Value (NI)

Maximum Operate Value (NI)
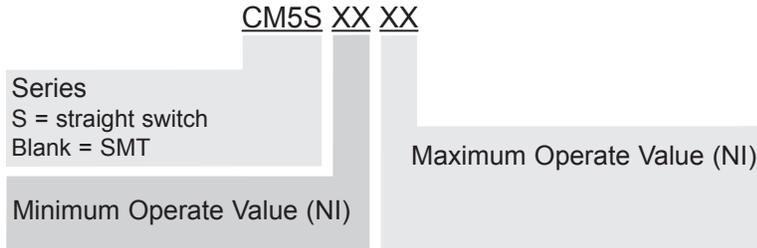
Surface Mount
Refer to operating characteristics
table for a complete part number.

Overmolded Ultra Mini DYAD

Part #	Operate Range (NI)[1]
CM5S1015	10 to 15
CM5S1020	10 to 20
CM5S1030	10 to 30
CM5S1520	15 to 20
CM5S1525	15 to 25
CM5S2025	20 to 25

[1] Tolerance = +/-1.5NI

### Overmolded Ultra Mini DYAD Surface Mount

Part #	Operate Range (NI)[1,2,3]
CM5-2319	10 to 15
CM5-2315	10 to 20
CM5-2376	10 to 30
CM5-2325	15 to 20
CM5-2341	15 to 25
CM5-2378	20 to 25

[1] Tolerance = +/-1.5NI
[2] Full Blade Sensitivity
[3] Surface Mount switches are packaged 3,000 parts per reel

MECHANICAL DIMENSIONS

Dimensions in inches [mm]

Overmolded Ultra Mini DYAD

1.360 [34.54]
0.071 [1.80]
Ø0.063 [Ø1.60]
0.039 [1.00]
13.42 - 14.42 [0.528 - 0.568]
5°
8°
0.094 [2.40]
0.64 [R.025]
0.115 [2.92]
0.265 [6.73]
0.007 [0.17]
7°
8°
0.64 [R.025]
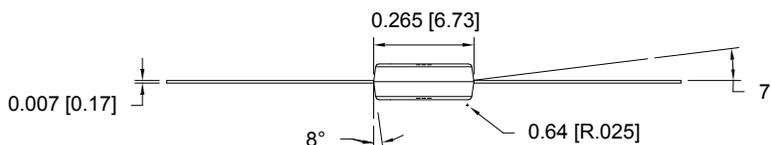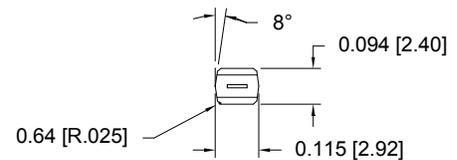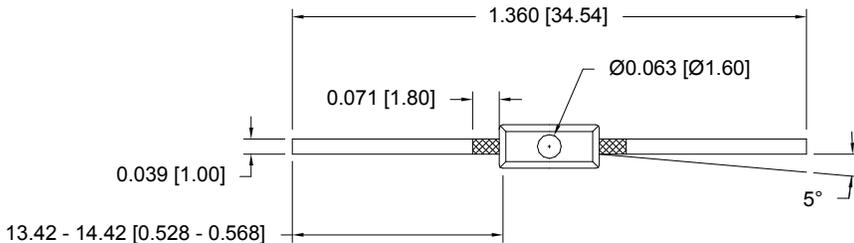
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MECHANICAL DIMENSIONS

Dimensions in inches [mm]

Overmolded Ultra Mini DYAD SMT

0.265 [6.73]

5° MAX ALLOWED BOTH ENDS

18.7° MAX ALLOWED BOTH ENDS

0.394 [10.00]

R.025

0.057 [1.44]

0.038 [0.97]

5° MAX ALLOWED BOTH ENDS

0.115 [2.92]

0.120 [3.05]

0.052 [1.32]
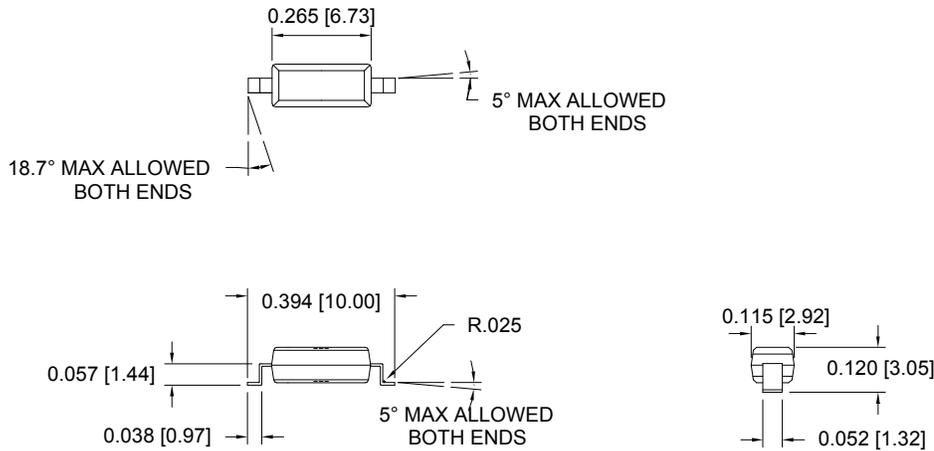
TAPE & REEL PACKAGING

Dimensions in mm [inches]

4.00 [0.157]

2.00 [0.079]

Ø1.50 $^{+0.10}_{-0.00}$ [Ø0.0591 $^{+0.0039}_{-0.0000}$]

1.75 [0.069]

11.50 [0.453]

24.00 [0.945] NOMINAL

24.30 [0.957] MAX

22.25 [0.876] MIN

8.00 [0.315]

Ø1.50 [Ø0.059]

3°

6.88 [0.271]

11.00 [0.433]

0.36 [0.014]

3°

2.66 [0.105]

3.20 [0.126]

3.07 [0.121]

1.81 [0.071]

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