

Features

- RoHS compliant*
- Small package dimensions
- Power rating at 70 °C = 1/16 W
- Three layer termination process with nickel barrier helps prevent leaching and provides excellent solderability

- Suitable for most types of soldering processes
- Standard packaging on paper tape and reel
- Sulfur-resistant design

CR0402-AS Series - Sulfur-Resistant Thick Film Chip Resistors

General Characteristics

Characteristic	CR0402-AS
Power Rating @ 70 °C per Resistor	0.063 W
Resistor Tolerance	±1 %, ±5 %
Resistance Range - 1 % Tolerance (E24 + E96)	10 ohms to 1 megohm
Resistance Range - 5 % Tolerance (E24), Zero-ohm Jumper	1 ohm to 10 megohms, 0 ohms
Temperature Coefficient of Resistance (TCR) 1 % Tolerance 5 % Tolerance Zero-ohm Jumper	±100 ppm/°C ±200 ppm/°C** N/A
Maximum Overload Voltage	50 V
Maximum Working Voltage	100 V
Operating Temperature Range	-55 to +155 °C
Storage Conditions	+5 ~ +40 °C, 25~75 % RH, 1 year
Derating Temperature	+70 °C
Packaging (Paper Tape)	10,000 pcs. per reel
Zero-ohm Jumper: Current Rating Maximum Resistance	1 A per element 50 milliohms

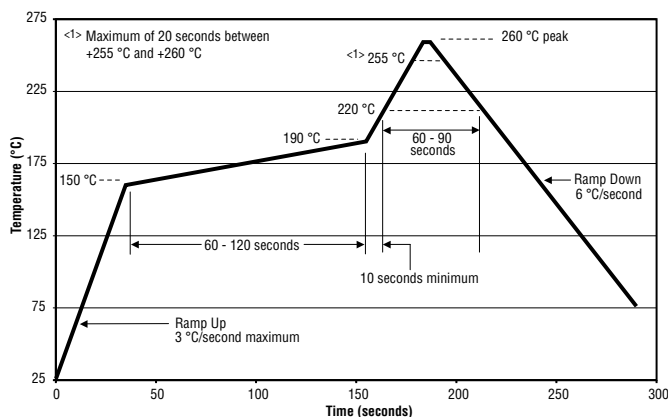
**TCR for 1 ohm to 9.1 ohm resistance range, 5 % tolerance is ±300 ppm/°C.

Environmental Characteristics

Specification	Test Method (JIS C 5201-1)	Characteristics
Short Time Overload	Rated voltage x 2.5, 5 seconds	±(2 % +0.1 ohm)
Soldering Heat	+260 °C ±5 °C, 10 ±1 seconds	±(1 % +0.05 ohm)
Temperature Cycling	-55 °C (30 minutes) - normal (2~3 minutes) +125 °C (30 minutes) - normal (2~3 minutes), 5 cycles	±(1 % +0.05 ohm)
Moisture Load Life	+40 °C, 90~95 % RH, 1000 hours, 1.5 hours ON, 0.5 hours OFF	±(3 % +0.1 ohm)
Load Life	+70 °C, 1000 hours, 1.5 hours ON, 0.5 hours OFF	±(3 % +0.1 ohm)
Sulfur Test	3 ppm H ₂ S, +50 °C, 90~95 % RH, 100 hours	±(5 % +0.1 ohm)

NOTE: Zero-ohm jumper ≤100 milliohms.

Soldering Profile



How To Order

CR 0402 - F X - 1002 G AS

Chip Resistor

Size

- 0402

Tolerance

- F = 1 %
- J = 5 %

TCR (ppm/°C)

- X = ±100
- W = ±200
- / = N/A (for Jumper)

Resistance Code

- For 1 % Tolerance
<100 ohms:
"R" designates decimal point
(example: 24R3 = 24.3 ohms)
≥100 ohms:
First three digits are significant,
fourth digit represents number of
zeros to follow
(example: 8252 = 82.5K ohms)
- For 5 % Tolerance
<10 ohms:
"R" designates decimal point
(example: 4R7 = 4.7 ohms)
≥10 ohms:
First two digits are significant,
third digit represents number of
zeros to follow
(example: 474 = 470K ohms;
000 = Zero-ohm jumper)

Packaging

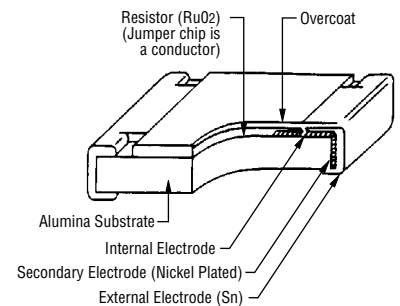
- G = Paper Tape
(10,000 pcs. on 7-inch plastic reel)

Special Characteristics

- AS = Sulfur-resistant, Tin-plated terminations (RoHS compliant)

For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

Construction



* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice.

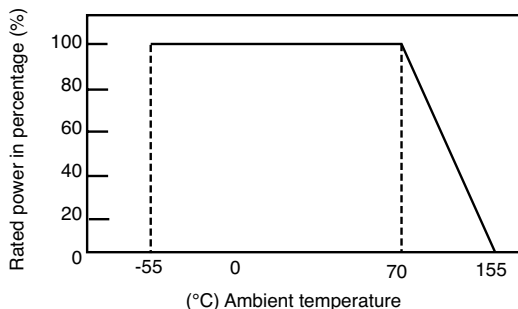
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

CR0402-AS Series - Sulfur-Resistant Thick Film Chip Resistors



Derating Curve



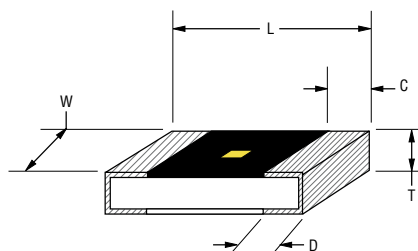
Typical Part Marking

(See Product Dimensions)

1 % & 5 % Tolerance Yellow dot
Zero-ohm Jumper 000

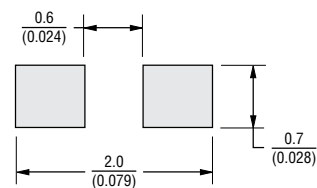
Product Dimensions

Dim.	CR0402-AS
L	$\frac{1.00 \pm 0.05}{(0.039 \pm 0.002)}$
W	$\frac{0.50 \pm 0.05}{(0.020 \pm 0.002)}$
C	$\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$
D	$\frac{0.25 \pm 0.10}{(0.010 \pm 0.004)}$
T	$\frac{0.35 \pm 0.05}{(0.014 \pm 0.002)}$

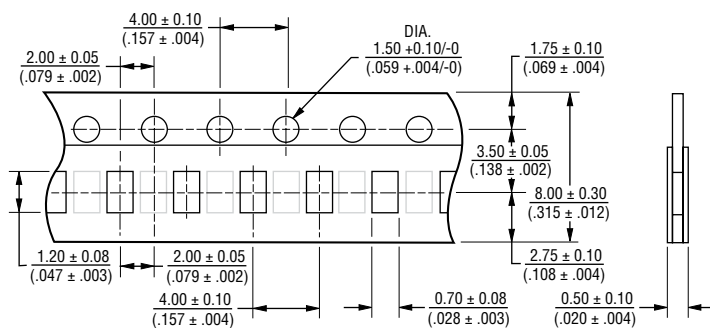


DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Recommended Land Pattern



Packaging Specifications



Reel Diameter: $\frac{180}{(7.087)}$

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$



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