

# RESISTOR

## CVD DIAMOND CHIP 50 WATT



DATA SHEET

PART SERIES: CR0505D X, 5

SHEET 1 OF 3  
Dwg 1010775

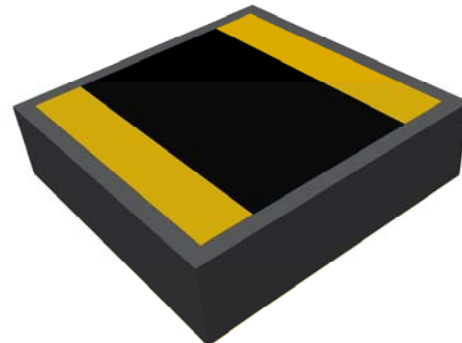
EN 13-3904  
Revision -

### FEATURES

- Small Size - Light Weight
- Highest Thermal Performance Possible
- Excellent Peak Power Capability
- Rugged Passivated TaN Film
- Moisture Resistant
- Pure Gold Input Pads
- Wire Bondable or Solderable
- High Power

### APPLICATIONS

- Broadcast
- Higher Power Filters
- High Power Amplifiers
- Instrumentation
- Isolators
- Military
- Satellite Communications
- Phased Array Radar



### GENERAL DESCRIPTION

CVD Diamond Chip Resistors offer extremely high power ratings and smallest size watt-per-watt of any resistor configuration on the planet. These resistors may be used in applications up to 30 GHz and are ideal for military and space applications because of their high power capability, broad frequency response and small, light-weight size. These resistors are processed using all thin film construction and have pure thin film gold terminals that are both wire bondable and solderable. They are ideal for peak power applications. High reliability tested versions per MIL-PRF-55342 are also available. Select from tape and reel or waffle packaging. These products are S-level approved. They also meet NASA out-gassing requirements for space applications.

### ORDERING INFORMATION

#### Part Identifier:

CR0505D X, 5  
└ Resistance Value

### SPECIFICATIONS

#### 1.0 ELECTRICAL

Resistance:	50 & 100 $\Omega$ , $\pm$ 5%
Frequency Range:	DC – 18 GHz
Capacitance:	0.1 pF Typical
Input Power CW:	50 Watts
Peak Power:	500 Watts (1 $\mu$ s pulse width/1% duty cycle)

#### 2.0 ENVIRONMENTAL

Operating Temperature:	-55 $^{\circ}$ C To +125 $^{\circ}$ C
Storage Temperature:	-55 $^{\circ}$ C To +150 $^{\circ}$ C
Temperature Coefficient:	$\pm$ 200 PPM/ $^{\circ}$ C Max

#### 3.0 MARKING

Unit Marking:	None
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#### 4.0 QUALITY ASSURANCE

Sample Inspect Per MIL-STD-105, Level II, 1.0% AQL.  
Visual and Mechanical Inspection for Conformance to Outline Drawing  
Measure DC Resistance  
Data Retention - Standard

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### 5.0 PACKAGING

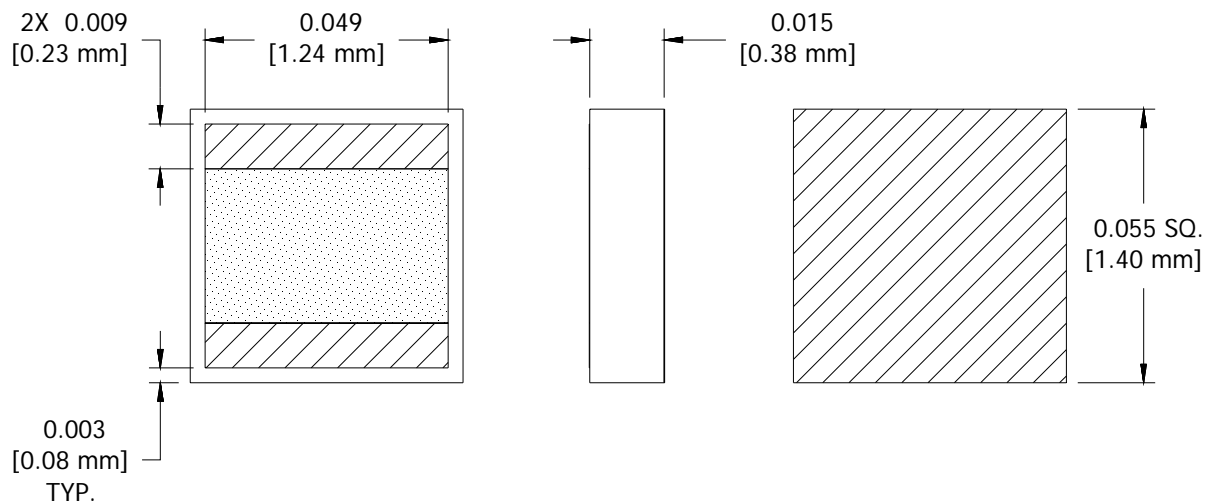
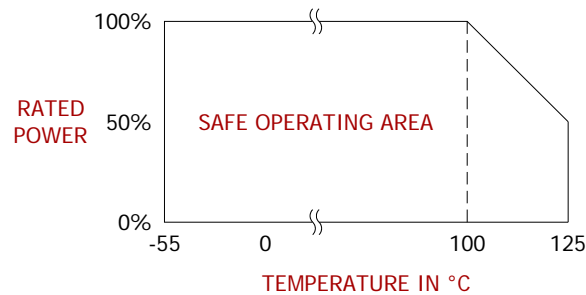
Standard:  
Optional:

Waffle Packaging  
Tape and Reel

### 6.0 MECHANICAL

Substrate Material:  
Resistive Element:  
Terminal:  
Ground Plane Material:  
Metric Dimensions:

CVD Diamond  
Thin Film  
Gold over Nickel  
Gold over Platinum  
Provided for reference only



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Unless Otherwise Specified: TOLERANCE: X.XX =  $\pm 0.01$  X.XXX =  $\pm 0.005$