

# ATTENUATOR

## CVD DIAMOND CHIP 20 WATTS



DATA SHEET

PART SERIES: HRXCA0505D XX

SHEET 1 OF 2  
Dwg 1015275

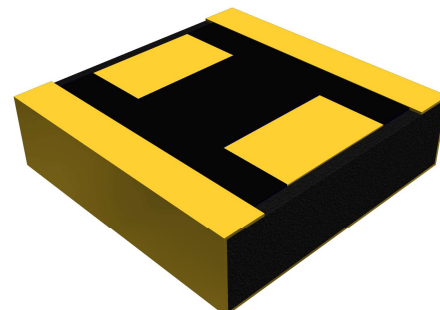
EN 19-0237  
Revision C

### FEATURES

- CVD Diamond Substrate
- Small Size
- Highest Thermal Performance
- Excellent Peak Power Capability
- Self Passivated Thin Film Resistors
- Pure Gold Input/Output Pads
- Wire Bondable or Solderable
- Meets NASA Out-Gassing Requirements

### APPLICATIONS

- Stabilize Amplifiers
- Improve VSWR Between Stages
- Protect Inputs from Overload
- Set Amplification Gain/Power
- Isolate Oscillators
- Isolate Couplers
- Sample Output Power
- Ideal for Space and Military



### GENERAL DESCRIPTION

CVD Diamond Chip Attenuators offer extremely high power ratings and smallest size watt-per-watt of any attenuator configuration on the planet. These attenuators 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 attenuators 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:

HRXCA0505D XX

Group Testing (A, B, C)      Attenuation Value

### SPECIFICATIONS

#### 1.0 ELECTRICAL

Nominal Impedance: 50 ohms  
Frequency Range: DC – 26.5 GHz  
Attenuation Values Available: 0-10, 15, 20 , 30 dB  
Attenuation Accuracy:

ATTENUATION ACCURACY (dB)				
dB VALUE	DC – 8 GHz	8 -12.4 GHz	12.4 – 18 GHz	18 – 26.5 GHz
0	+ 0.25	+ 0.30	+ 0.50	+ 0.70
1 – 6	± 0.25	± 0.30	± 0.50	± 0.75
7 - 10	± 0.25	± 0.30	± 0.50	± 1.00
15	± 0.30	± 0.30	± 0.50	± 1.00
20	± 0.50	± 0.50	± 0.75	± 1.00
30	± 0.50	± 0.50	± 1.00	± 1.50

Input Power CW: 20 Watts  
Peak Power: 200 Watts (1 µs pulse width/1% duty cycle)  
VSWR:

VSWR (MAX)				
dB VALUE	DC – 8 GHz	8 -12.4 GHz	12.4 – 18 GHz	18 – 26.5 GHz
0-10, 15, 20	1.25:1	1.30:1	1.40:1	1.50:1
30	1.25:1	1.35:1	1.45:1	1.50:1

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### 2.0 ENVIRONMENTAL

Operating Temperature: -55°C to +150°C  
Non-operating Temperature: -65°C to +150°C

### 3.0 MARKING

Unit Marking: None

### 4.0 QUALITY ASSURANCE

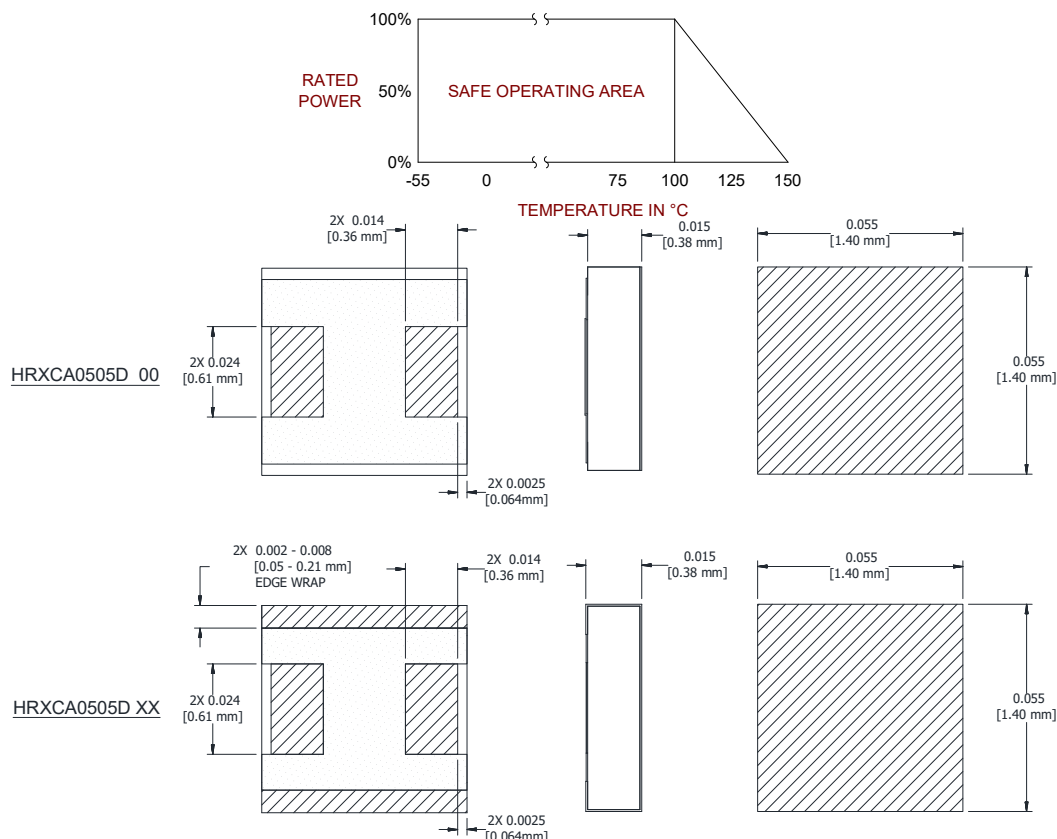
Verify 100% visual pre-cap inspection performed per TP-9046  
Perform A, B or C testing as indicated by the part number, per TP-9046  
Test data requirements:  
Test data required for customer – see TP-9046  
Data retention – 24 months  
Test samples required for customer – see TP-9046

### 5.0 PACKAGING

Standard: Waffle Packaging

### 6.0 MECHANICAL

Substrate Material: CVD Diamond  
Resistive Film: Tantalum Nitride  
Terminal Material: Gold over Nickel  
Metric Dimensions: Provided for reference only



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