

# ATTENUATOR CVD DIAMOND CHIP 20 WATTS, BENT TAB



DATA SHEET

PART SERIES: CA0505D XXTB

SHEET 1 of 3  
Dwg 1013395

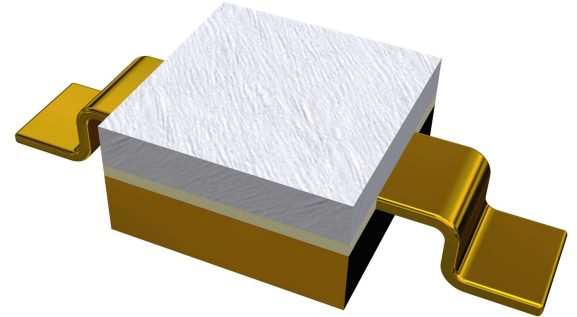
EN 19-0336  
Revision C

## 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:

CA0505D XXTB

Attenuation Value

## SPECIFICATIONS

### 1.0 ELECTRICAL

Nominal Impedance:  
Frequency Range:  
Attenuation Values Available:  
Attenuation Accuracy:

50  $\Omega$   
DC - 18 GHz  
0-10, 15, 20, 30 dB

ATTENUATION ACCURACY (dB)			
dB VALUE	DC – 8 GHz	8 -12.4 GHz	12.4 – 18 GHz
0	+ 0.25	+ 0.30	+ 0.50
1 – 3	$\pm$ 0.25	$\pm$ 0.30	$\pm$ 0.50
4 – 6	$\pm$ 0.25	$\pm$ 0.30	$\pm$ 0.50
7 – 10	$\pm$ 0.25	$\pm$ 0.30	$\pm$ 0.50
15, 20	$\pm$ 0.50	$\pm$ 0.50	$\pm$ 0.75
30	$\pm$ 0.50	$\pm$ 0.50	$\pm$ 1.00

Input Power CW:  
Peak Power:  
VSWR:

20 Watts  
200 Watts (1  $\mu$ s pulse width / 1% duty cycle)

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

### 2.0 ENVIRONMENTAL

Operating Temperature:  
Non-operating Temperature:

-55°C to +150°C  
-65°C to +150°C

# ATTENUATOR CVD DIAMOND CHIP 20 WATTS, BENT TAB



DATA SHEET

PART SERIES: CA0505D XXTB

SHEET 2 of 3  
Dwg 1013395

EN 19-0336  
Revision C

## 3.0 MARKING

Unit Marking: None

## 4.0 QUALITY ASSURANCE

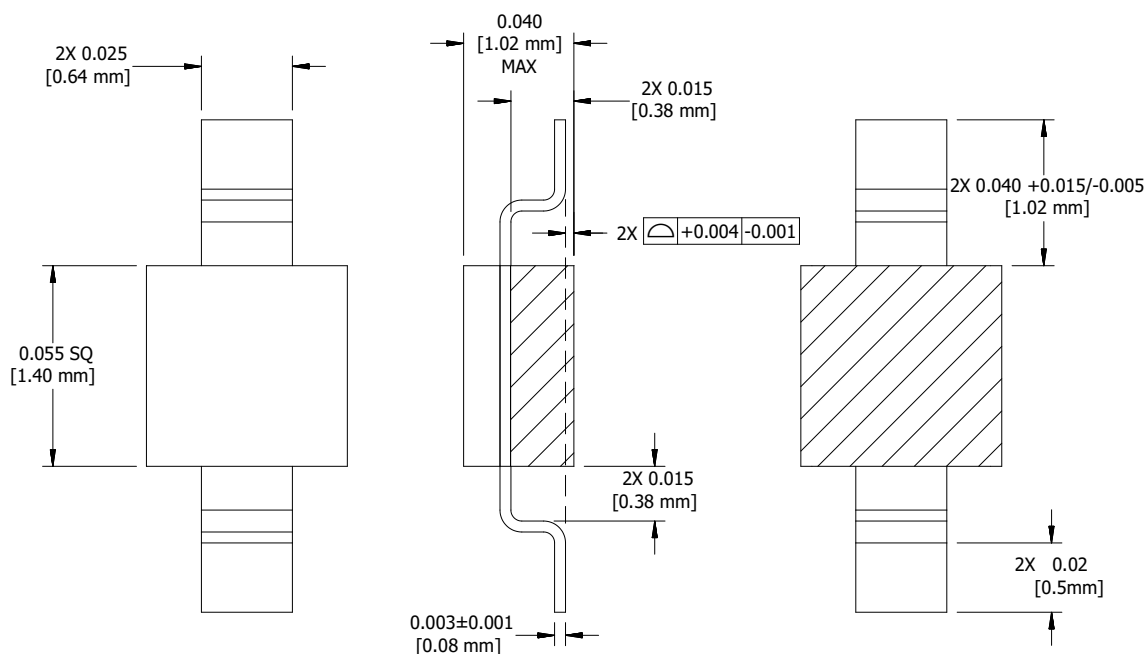
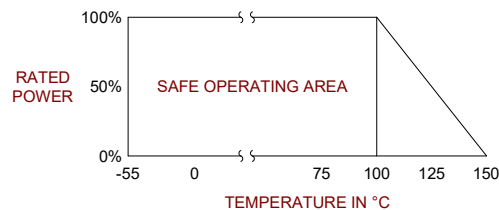
Sample Inspect Per MIL-STD-105, Level II, 1.0% AQL.  
Visual and Mechanical Inspection for Conformance to Outline Drawing  
Measure DC Attenuation  
Data Retention - Standard

## 5.0 PACKAGING

Standard: Tape and Reel  
Optional: Waffle Packaging

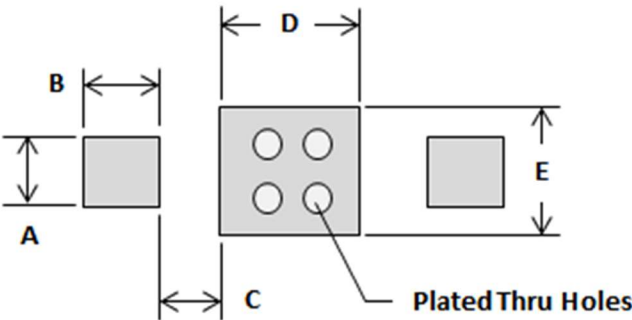
## 6.0 MECHANICAL

Substrate Material: CVD Diamond  
Cover: Alumina, "Allow  $\pm 0.010$  on Top Plate for misalignment"  
Resistive Film: Tantalum Nitride  
Tabs: Beryllium Copper,  
Gold Plated 20  $\mu$ -inch MIN  
Over Nickel Layer 50  $\mu$ -inch Min / 100  $\mu$ -inch Max,  
Over Copper Layer 10  $\mu$ -inch Min  
Construction Material: Thin Film  
Metric Dimensions: Provided for reference only



# ATTENUATOR

## CVD DIAMOND CHIP 20 WATTS, BENT TAB



Part Number	Inches					mm				
	A	B	C	D	E	A	B	C	D	E
CA0505D XXTB	0.03	0.025	0.02	0.06	0.06	0.76	0.63	0.51	1.52	1.52
CR0505D XXX,5TB	0.03	0.025	0.02	0.06	0.06	0.76	0.63	0.51	1.52	1.52

Unless Otherwise Specified: TOLERANCE: X.XX = ± 0.01    X.XXX = ± 0.005