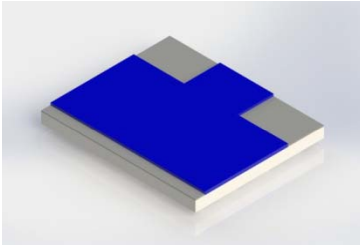


# Attenuator, Chip

Frequency Range: DC to 12 GHz, Power: 2 Watts



## Features

- Reduced Attenuation at Elevated Temperature
- Linear Resistive Design
- Broadband Operation

N05 series of temperature variable attenuators are designed to compensate reduction of gain by 0.5dB/dB for a temperature increase from 25°C to 125°C without requiring a bias or control voltage. TCA chip attenuators are manufactured using thick film resistor elements on an alumina ceramic substrate. Blank backside TCA chips are designed for flip-chip mount applications and available in various attenuation values and terminal finish options.

## Technical Specifications

Parameter	Value					
Frequency Range	DC to 12 GHz					
Impedance	50 Ohms Nominal					
Attenuation Accuracy*	Frequency (GHz)					
<u>dB Value</u>	<u>DC - 4</u>	<u>4 - 6</u>	<u>6 - 8</u>	<u>8 - 10</u>	<u>10 - 12</u>	
1 - 6 dB	±0.5	±0.5	±0.5	±0.75	±0.75	
7 & 8 dB	±0.5	±0.5	±0.75	±0.75	±1.0	
9 dB	±0.5	±0.75	±1.0	±1.0	±1.0	
10 dB	±0.75	+1.5/-1	+2/-1	+2/-1	N/A	
VSWR (Max.)	Frequency (GHz)					
<u>dB Value</u>	<u>DC - 4</u>	<u>4 - 6</u>	<u>6 - 8</u>	<u>8 - 10</u>	<u>10 - 12</u>	
1 - 8 dB	1.35:1	1.35:1	1.35:1	1.50:1	1.50:1	
9 dB	1.35:1	1.35:1	1.50:1	1.50:1	1.50:1	
10 dB	1.35:1	1.50:1	1.50:1	1.50:1	N/A	
Rated Power**	2 Watts Avg.					
Temperature Coefficient of Attenuation	-0.005 dB/dB/°C					
Temperature Coefficient Tolerance	±0.001 dB/dB/°C					
Operating Temp. Range	-55°C to +150°C					

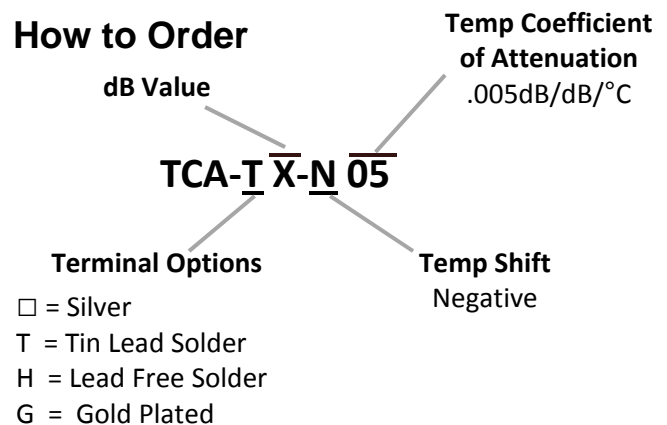
\*Performance is based on device mounted in matched 50Ω line.

\*\*Mounting surfaces shall not exceed 100°C. Max.

## Material

Feature	Material
Substrate	Alumina
Resistor Material	Proprietary Thick Film
Terminal Finish	Silver – (See “How to Order” for tinning & other options)

## How to Order



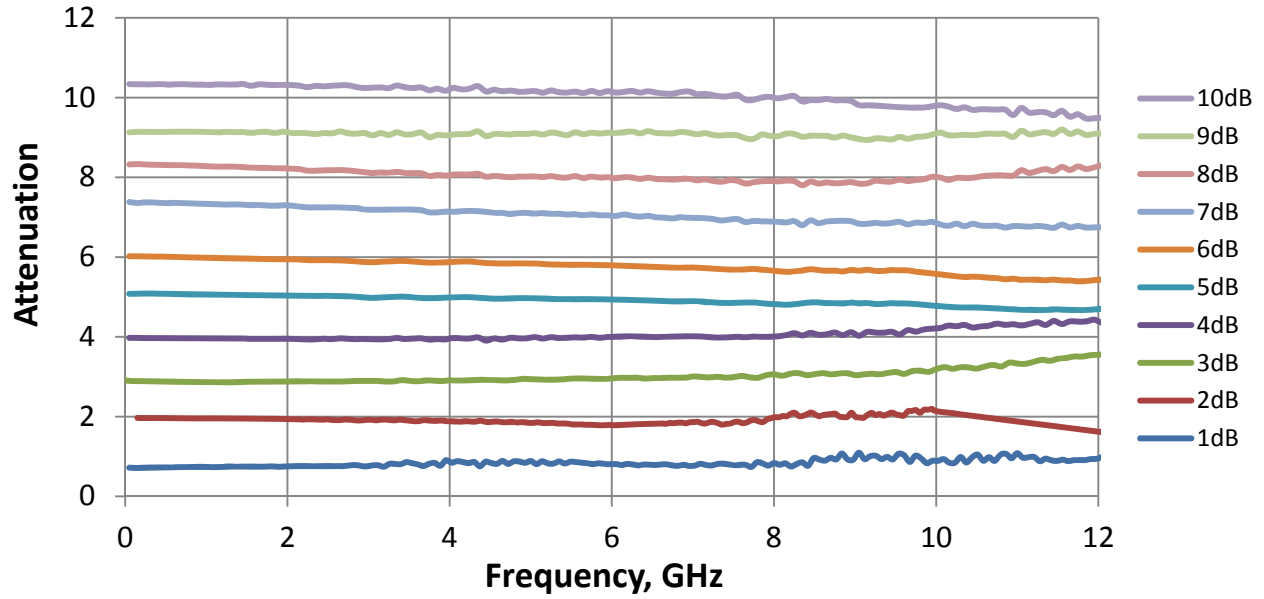
## Ordering Examples

Model Number: TCA-3-N05  
Silver Terminals, 3dB

Model Number: TCA-T2-N05  
Tin lead solder Terminals, 2dB

Performance Characteristics

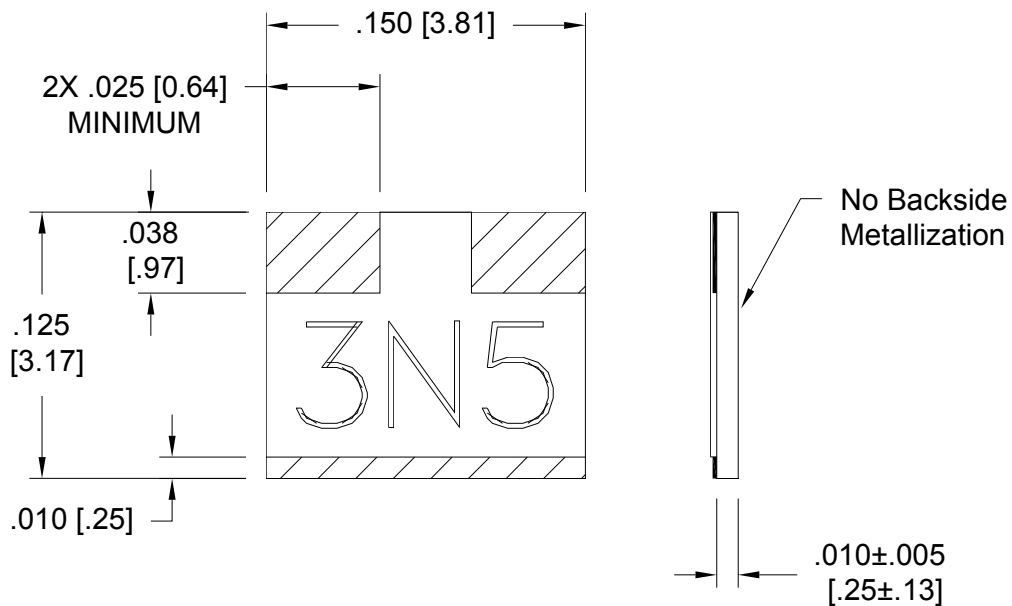
Typical Performance



Physical Dimensions

Model Number: TCA-3-N05 shown

Tolerance .XXX" = ±.010"



Note: Dimensions in Brackets [ ] are expressed in Millimeters and are for reference only