

## Voltage Controlled Attenuator

### 2-18 GHz/50dB Attenuation Range

**Model: TLVA2G18G-50-10**

The TLVA2G18G-50-10 is an broadband voltage controlled electrical attenuator operating from 2 to 18 GHz. The attenuator exhibits 2 dB typical insertion loss and 0 to 50 dB nominal attenuation range across the frequency range of 2 to 18 GHz while applying 0 to +13 V DC control voltage. The RF input and output ports are female SMA coax connectors.

#### Features:

- Ultra Wide Band: 2-18GHz
- Attenuation Range: 50 dB Typ
- Insertion Loss: 2 dB Typ
- High Attenuator Accuracy

#### Applications:

- Radar Systems
- Communication Systems
- Testing Equipment

#### Electrical Characteristics:

| Parameter         | Min  | Typ | Max | Units |
|-------------------|------|-----|-----|-------|
| Frequency range   | 2-18 |     |     | GHz   |
| Insertion Loss    |      | 2   | 3   | dB    |
| Attenuation Range | 50   |     |     | dB    |
| Input IP3         |      | 43  |     | dBm   |
| Input VSWR        |      | 1.6 | 2   | :1    |
| Output VSWR       |      | 1.6 | 2   | :1    |
| Switich Speed     |      |     | 2.5 | us    |
| Input Max Power   |      | 30  |     | dBm   |
| Control Voltage   | 0    | 10  | 13  | V DC  |
| DC Supply Current |      | 30  |     | mA    |
| Impedance         | 50   |     |     | Ohms  |

#### Mechanical Specifications:

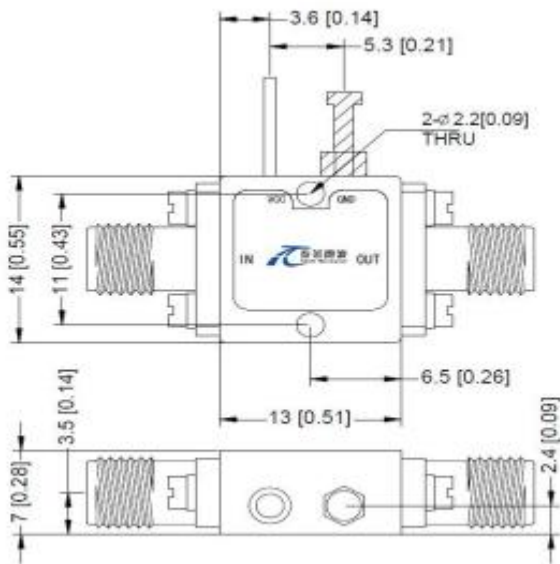
| Description             | Parameter             | Units |
|-------------------------|-----------------------|-------|
| Input /Output Connector | SMA Female/SMA Female |       |
| Control Connector       | Pin                   |       |
| Size                    | 14*13*7               | mm    |
| Material                | Copper                |       |

## Absolute Maximum Ratings :

| Description           | Parameter            | Units |
|-----------------------|----------------------|-------|
| Supply Bias Voltage   | TBD                  |       |
| RF Input Power        | 30 dBm               |       |
| ESD sensitivity (HBm) | Class 0, passed 150V |       |

## Outline Drawing:

Unit:mm



OBSERVE PRECAUTIONS  
ELECTROSTATIC SENSITIVE  
DEVICES

### Environmental Conditions:

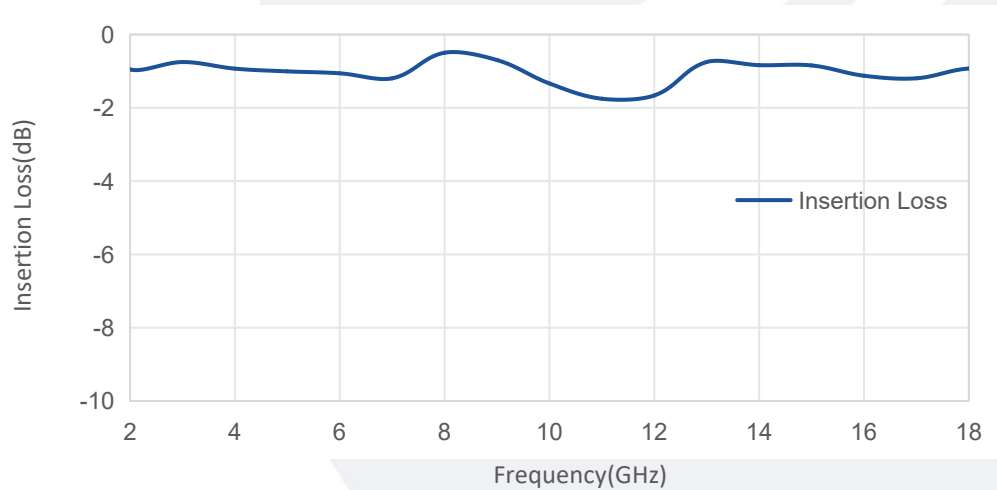
| Parameter                       | Min                                                 | Typ | Max  | Units |
|---------------------------------|-----------------------------------------------------|-----|------|-------|
| Operating Temperature           | -45                                                 |     | +85  | °C    |
| Non-operating Temperature       | -55                                                 |     | +125 | °C    |
| Relative humidity               |                                                     | 95  |      | %     |
| Altitude                        | 50,000                                              |     |      | feet  |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis |     |      |       |
| Shock(non operating)            | 20G for 11msc half sin wave,3 axis both directions  |     |      |       |

### Ordering Information:

| Base Number     | Description                                                       | Revision |
|-----------------|-------------------------------------------------------------------|----------|
| TLVA2G18G-50-10 | Voltage Controlled Attenuator<br>2-18 GHz, 50 dB Range,SMA Female | Rev.1.1  |

### Typical Performance Data:

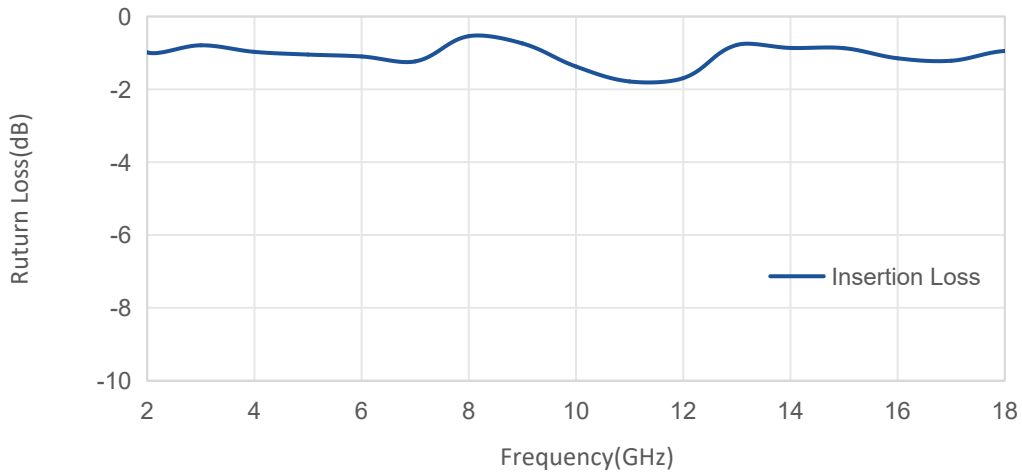
Insertion Loss vs Frequency@Pin=0dBm



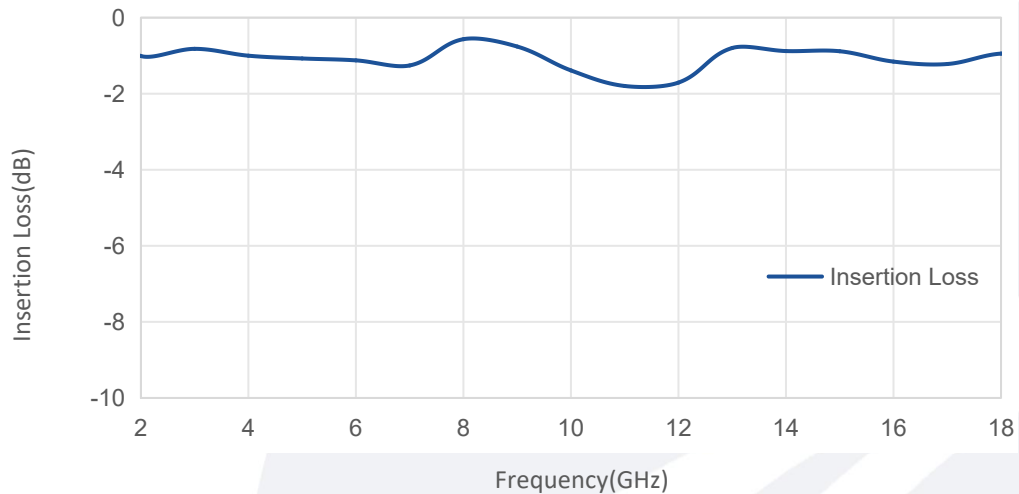
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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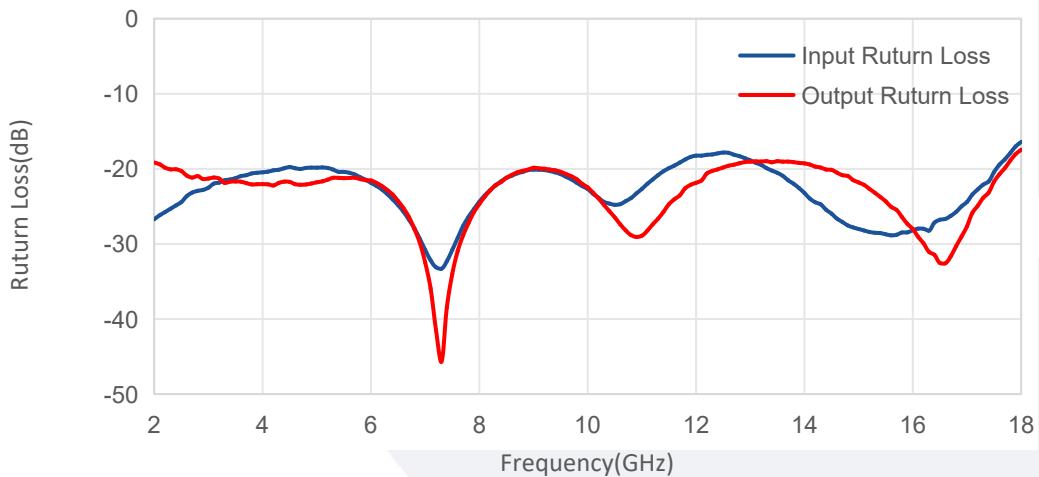
### Insertion Loss vs Frequency@Pin=5dBm



### Insertion Loss vs Frequency@Pin=10dBm



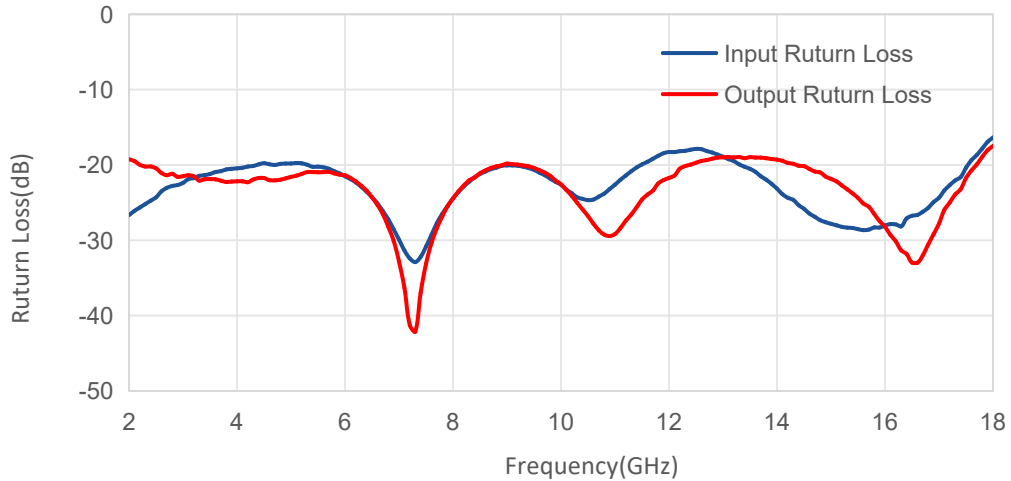
### Return Loss vs Frequency@Pin=0dBm



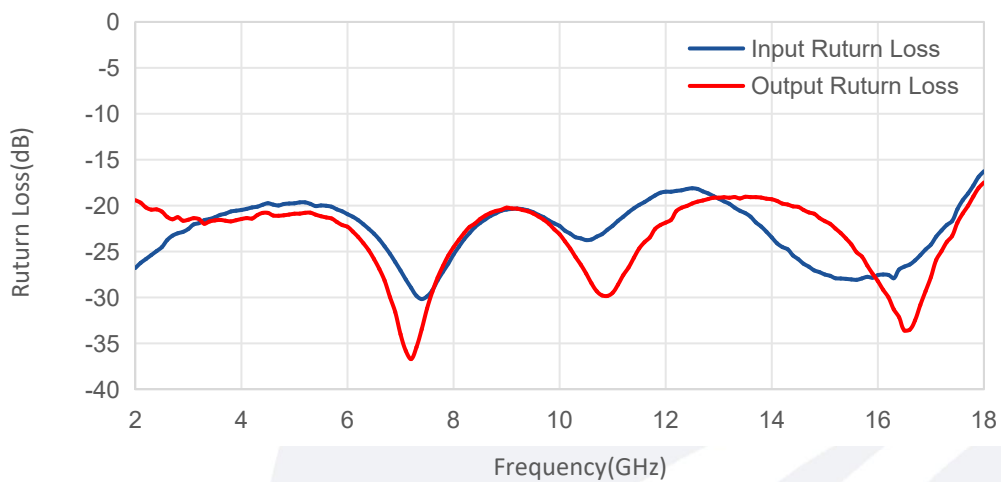
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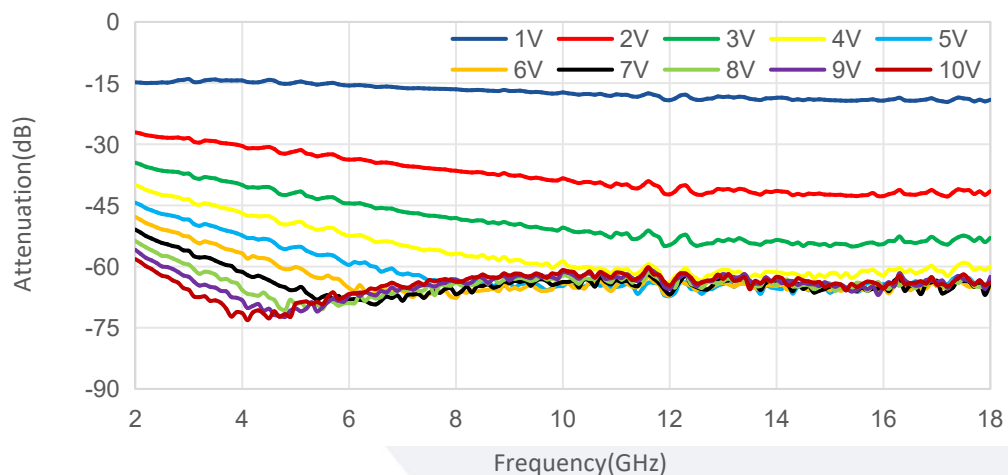
### Return Loss vs Frequency@Pin=5dBm



### Return Loss vs Frequency@Pin=10dBm



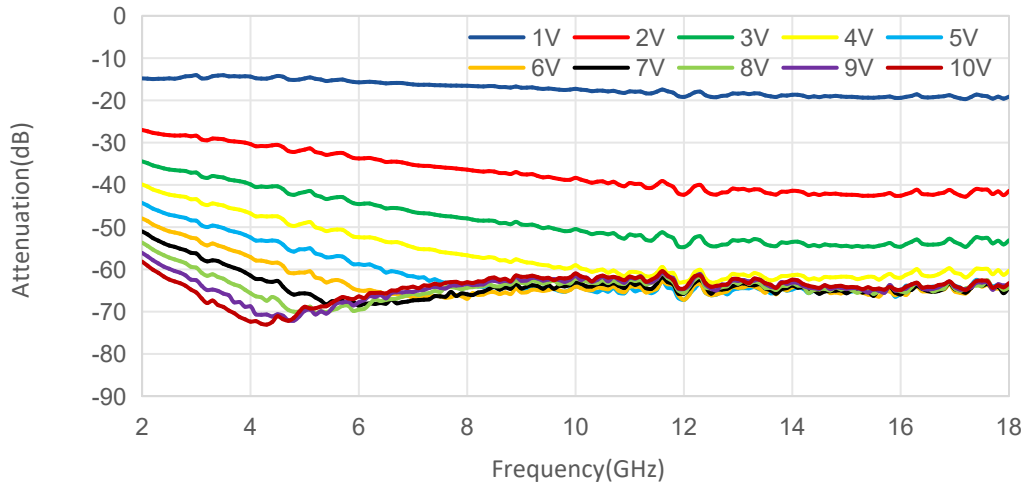
### Attenuation@Voltage Pin=0dBm



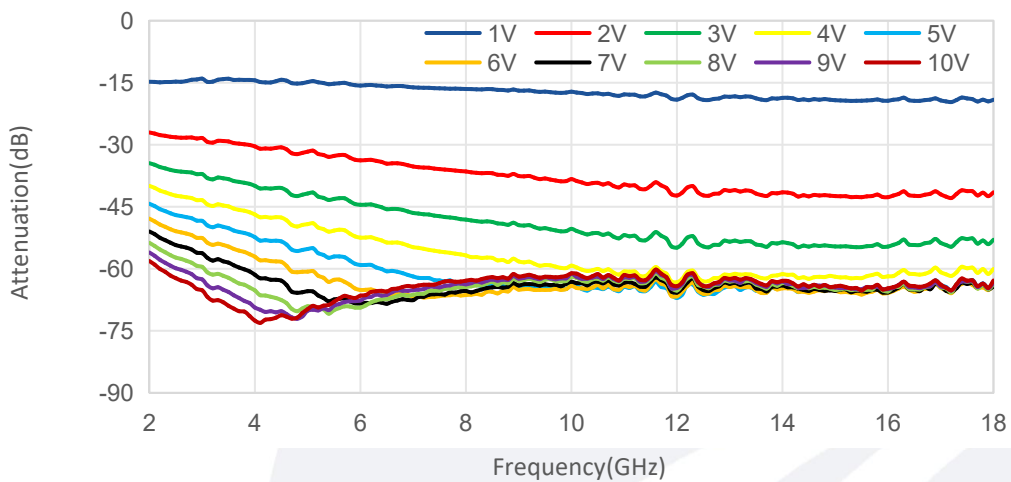
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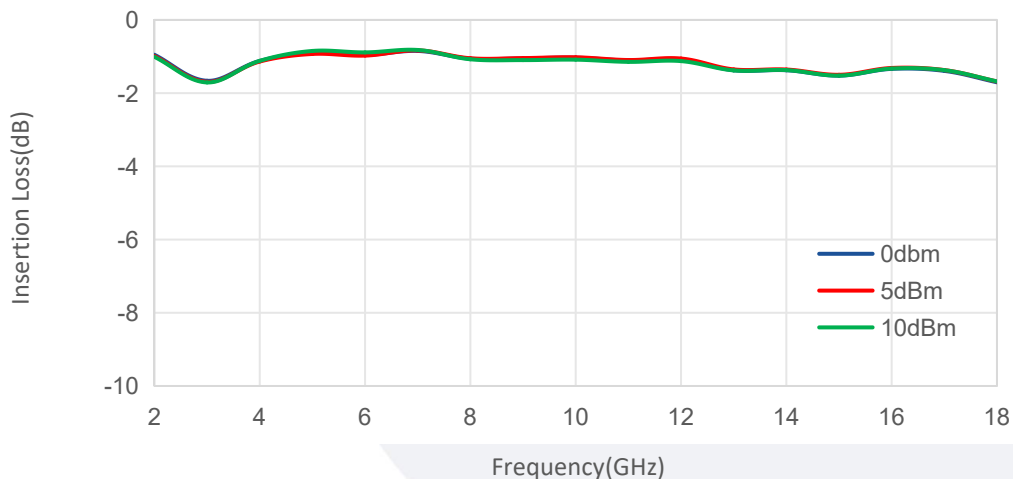
### Attenuation@Voltage Pin=5dBm



### Attenuation@Voltage Pin=10dBm



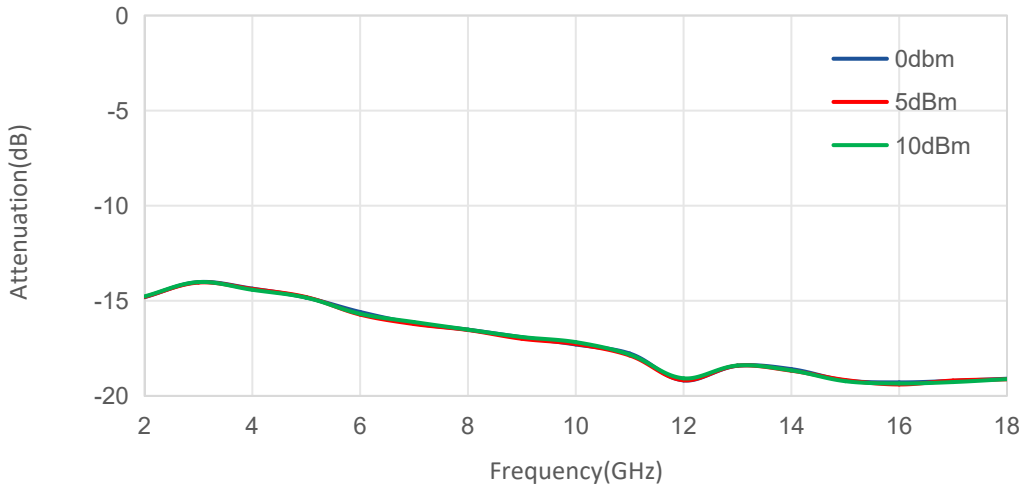
### Insertion Loss@Pin VT=0V



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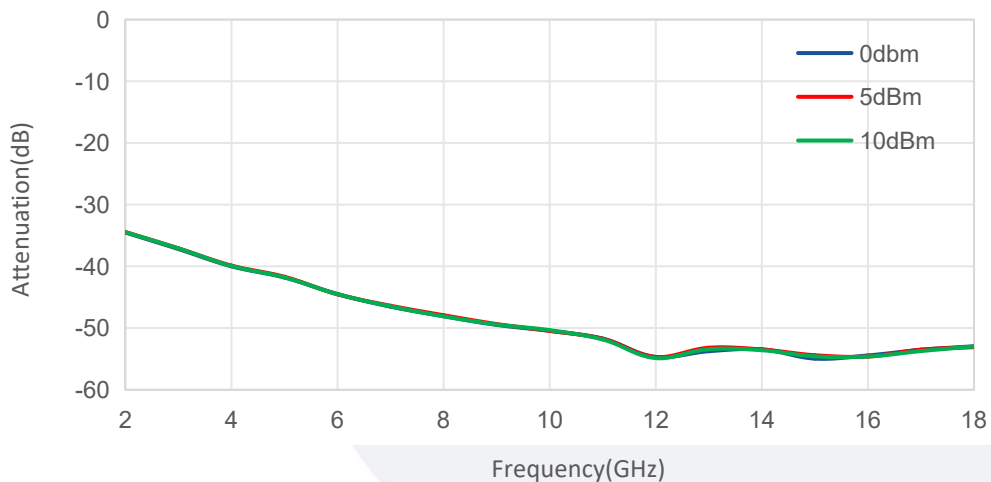
**Attenuation@Pin  $V_T=1V$**



**Attenuation@Pin  $V_T=2V$**



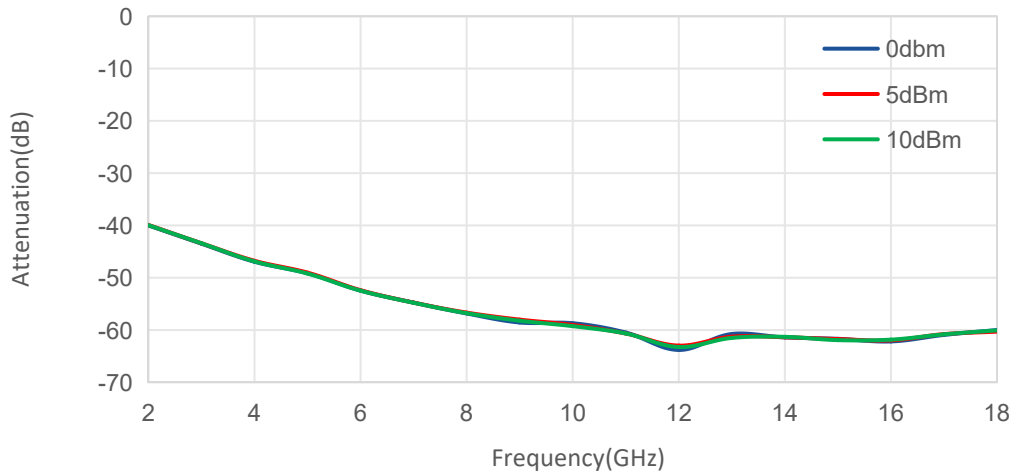
**Attenuation@Pin  $V_T=3V$**



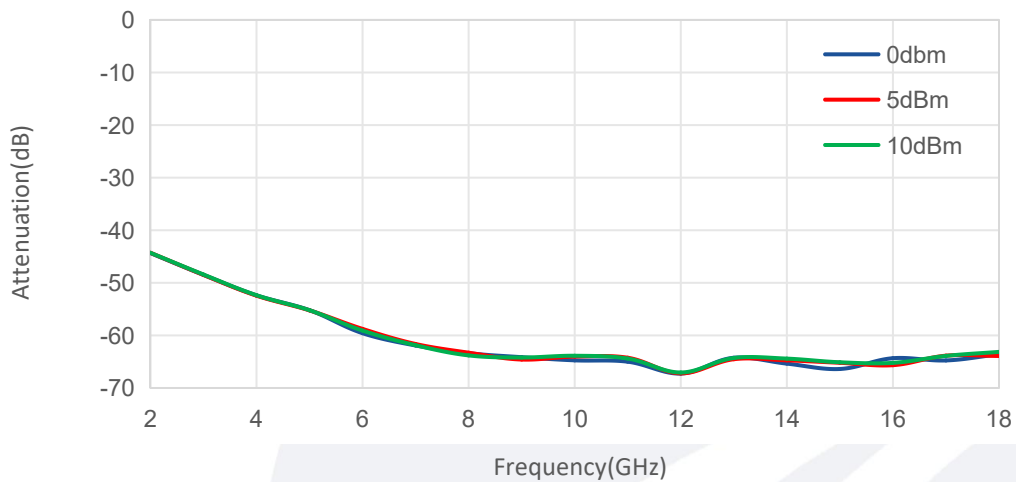
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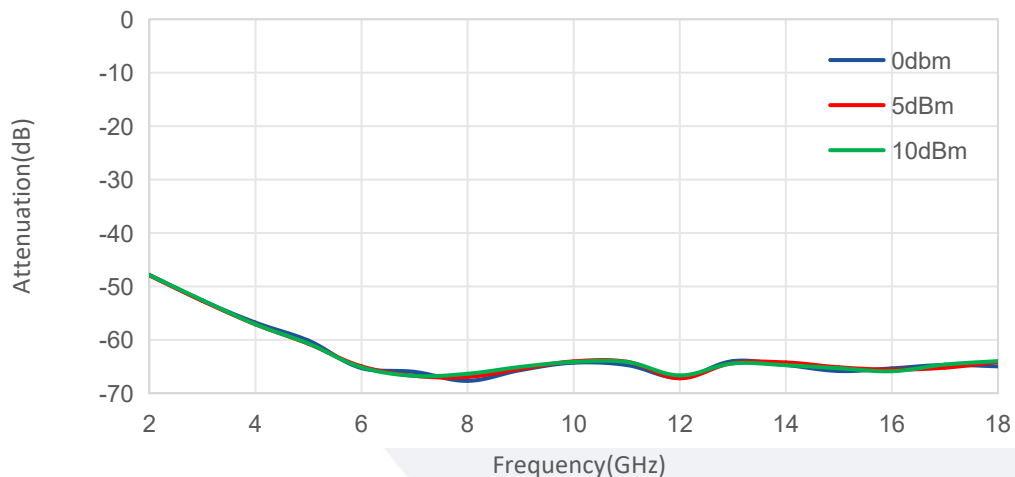
**Attenuation@Pin  $V_T=4V$**



**Attenuation@Pin  $V_T=5V$**



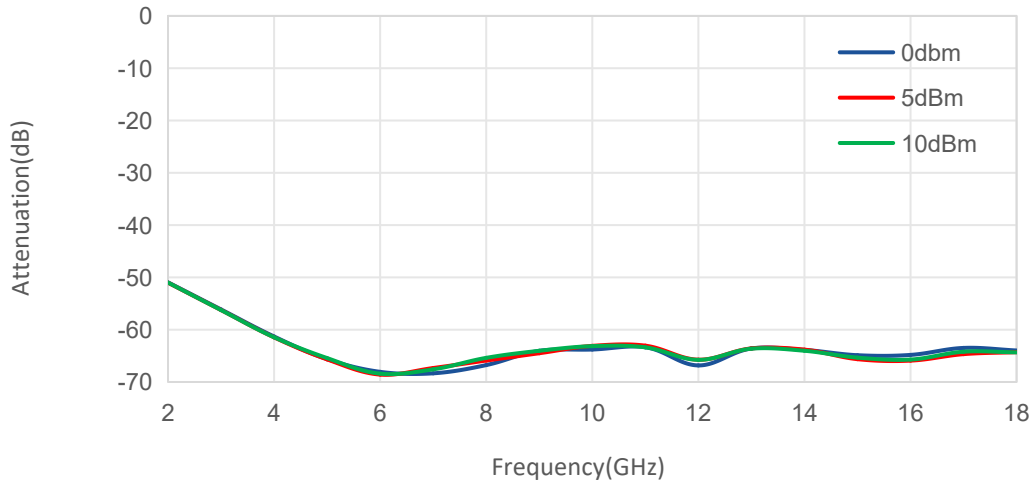
**Attenuation@Pin  $V_T=6V$**



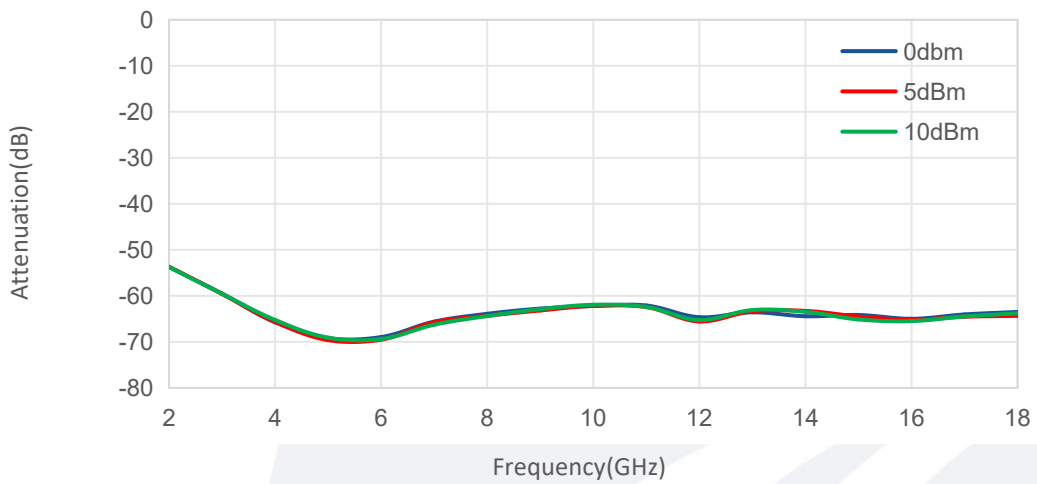
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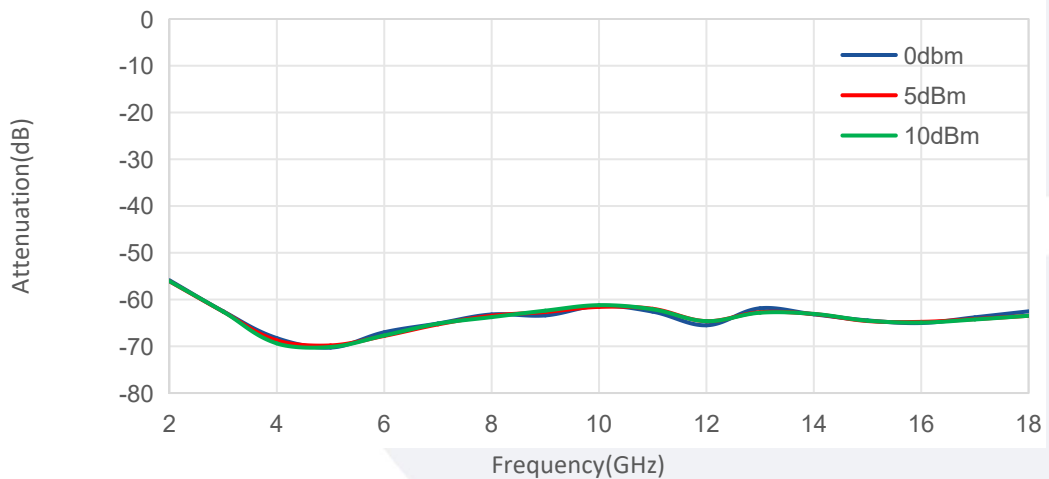
**Attenuation@Pin  $V_T=7V$**



**Attenuation@Pin  $V_T=8V$**



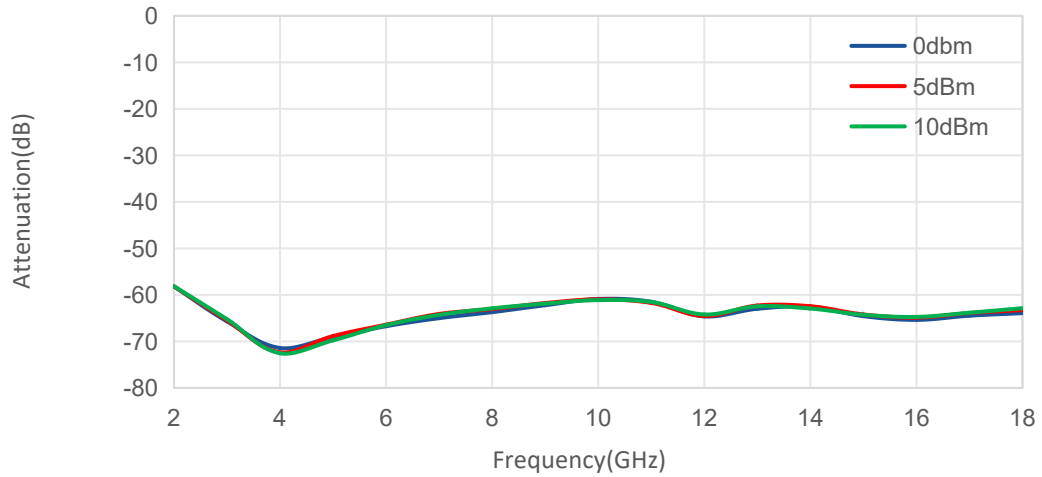
**Attenuation@Pin  $V_T=9V$**



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

Attenuation@Pin  $V_T=10V$



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