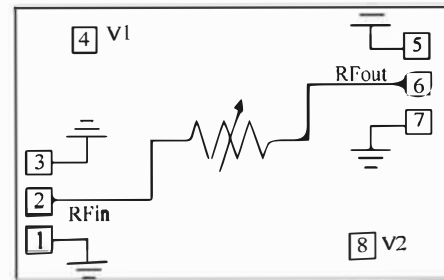


## Performance Characteristics

- Frequency range: 30GHz~80GHz
- Insertion loss: 2dB
- ESC attenuation: 1-35dB
- On state input/output standing wave: 1.6/1.3
- Chip size: 1.65mmx0.85mm x0.07mm

## Functional Block Diagram



## Product Introduction

The working frequency of this chip covers 30GHz~80GHz, with an insertion loss of less than 2.4dB and an attenuation range of 1-35dB. It integrates a power on network on-chip and has a conversion time of less than 20ns.

## Microwave Electrical Parameters ( $T_A = +25^\circ\text{C}$ , $V_t = -5\text{V} \sim 0\text{V}$ )

Index	Symbol	Min	Typ	Max	Unit
Frequency Range	Freq	30~80			GHz
Insertion Loss	IL		2	2.4	dB
Electronic Attenuation	ATT	1-22	1-35		dB
On State Input Standing Wave	VSWR <sub>in</sub>		1.6	1.9	-
On State Output Standing Wave	VSWR <sub>out</sub>		1.3	1.6	-

Note: 1) Either V1 or V2 can be powered on, and different attenuation states can be achieved by controlling the magnitude of the power.

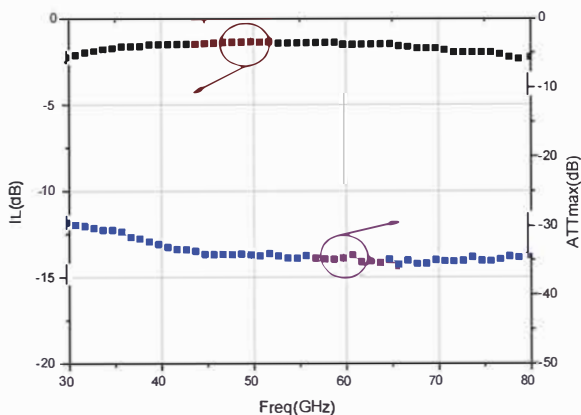
## Use Restriction Parameters

Parameters	Limit Value
Control Voltage Range	-10~0V
Storage Temperature	-65°C ~ +150°C
Operating Temperature	-55°C ~ +125°C

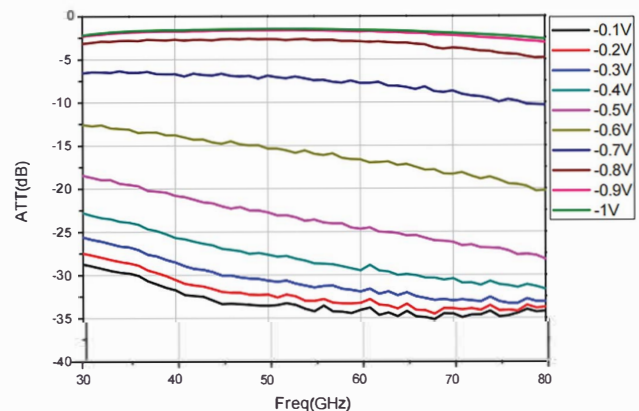
## Typical Curve( $T_A = +25^\circ\text{C}$ , $V_t = -5\text{V} \sim 0\text{V}$ )

In order to provide users with a more intuitive understanding of the performance indicators of the chip, the following are curve graphs for each indicator.

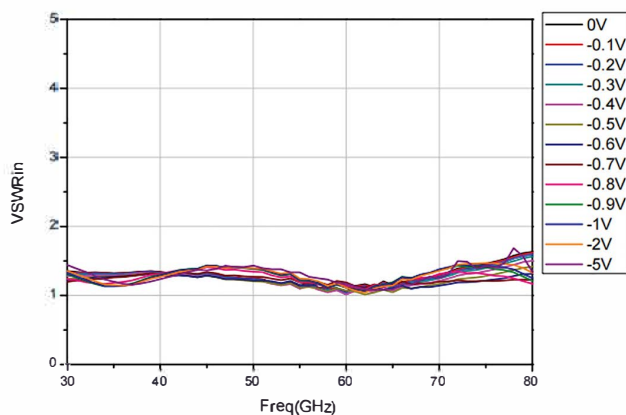
Insertion Loss (-5V)/Max Attenuation Value (0V) VS Frequency



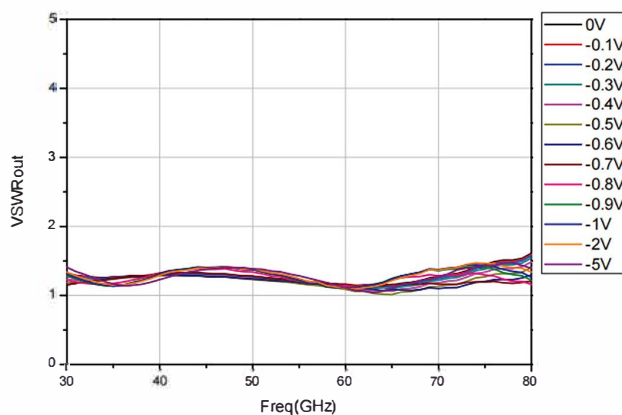
Attenuation Value (-0.1V ~ -1V, interval 0.1V) VS Frequency



Different Attenuation States Input Standing Wave VS Frequency



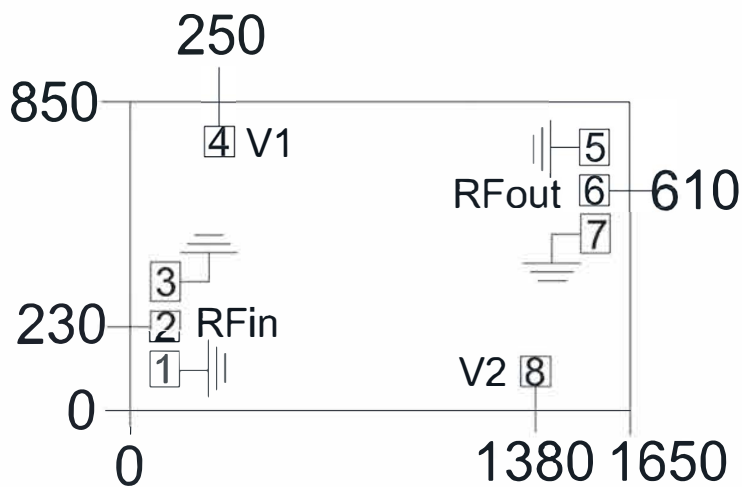
Different Attenuation States Output Standing Wave VS Frequency



**Truth Table**

芯片	V1/V2	RFin-RFout
全部	-5V	ON: 插损态
	0V	OFF: 最大衰减态

**Outline Dimensions and Pressure Point Arrangement Diagram**



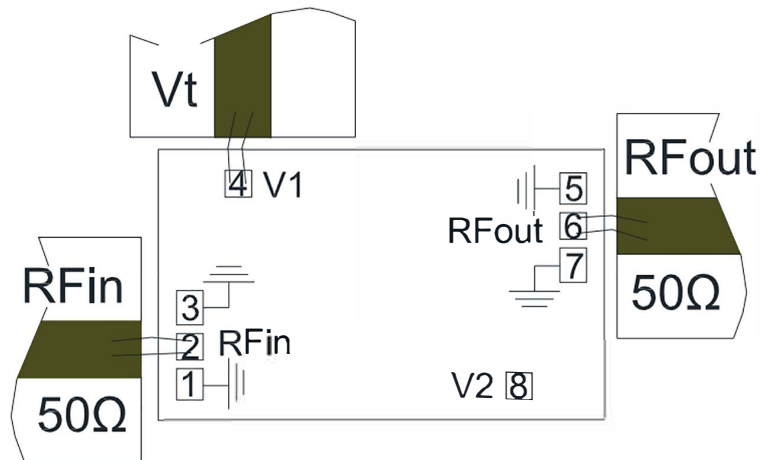
Note: The units in the figure are all micrometers ( $\mu\text{m}$ ); The tolerance of the external dimensions is  $\pm 100 \mu\text{m}$ .

**Pressure Point Arrangement Diagram**

No.	Symbol	Function	Dimensions $\mu\text{m}\times\mu\text{m}$	Coordinate	
				X $\mu\text{m}$	Y $\mu\text{m}$
2	<i>RFin</i>	RF signal input terminal	80×80	100	230
6	<i>RFout</i>	RF signal output terminal	80×80	1540	610
8	<i>V1</i>	Power terminal	80×80	250	750
4	<i>V2</i>	Power terminal	80×80	1390	100
1, 3, 5, 7	<i>GND</i>	Grounding point (for probe testing only)	80×100	-	-

Note: 1. Taking the bottom left corner of the chip as the origin, the horizontal direction is the x-axis, and the vertical direction is the y-axis.  
2. Either of the bonding areas 4 and 8 with the same function can be used.

Suggested Assembly Diagram



Note:

- 1) Assemble and use in a purified environment;
- 2) GaAs material is very brittle and the chip surface is easily damaged (do not touch the surface), so caution must be taken when using it;
- 3) Use 1-2 bonding wires (25  $\mu\text{m}$  diameter gold wire) for input and output, with bonding wires as short as possible and not larger than 250  $\mu\text{m}$ ;
- 4) The back of the chip must be grounded;
- 5) Use 80/20 gold tin sintering, with a sintering temperature not exceeding 300°C and a sintering time as short as possible, not exceeding 30 seconds;
- 6) This product belongs to electrostatic sensitive devices, please pay attention to anti-static measures during storage and use;
- 7) Dry and nitrogen storage environment;
- 8) Do not attempt to clean the surface of the chip using dry or wet chemical methods;
- 9) During use, Vt can be selected as Y1 or Y2, choose one from the two;
- 10) Please contact the supplier if you have any questions.



This product is sensitive to static electricity, please pay attention to anti-static measures during use.