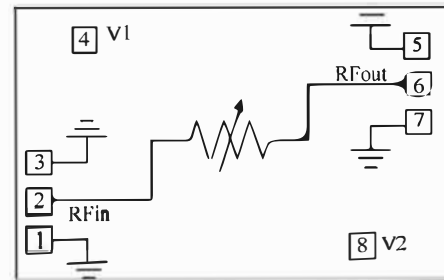


Performance Characteristics

- Frequency range: 30GHz~80GHz
- Insertion loss: 2dB
- 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
Attenuation	ATT	1-22	1-35		dB
On State Input Standing Wave	VSWRin		1.6	1.9	-
On State Output Standing Wave	VSWRout		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.

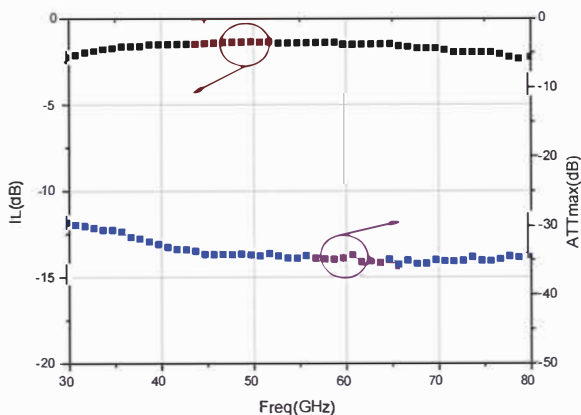
Use Restriction Parameters

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

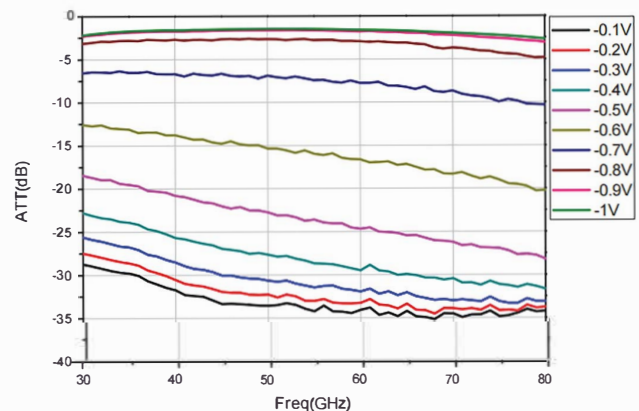
Typical Curve ($T_A = +25^\circ\text{C}$, $V_t = -5\text{V} \sim 0\text{V}$)

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.

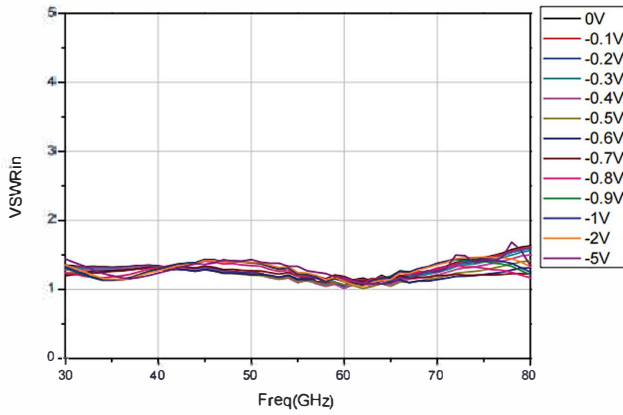
Insertion Loss (-5V)/Max Attenuation Value (0V) VS Frequency



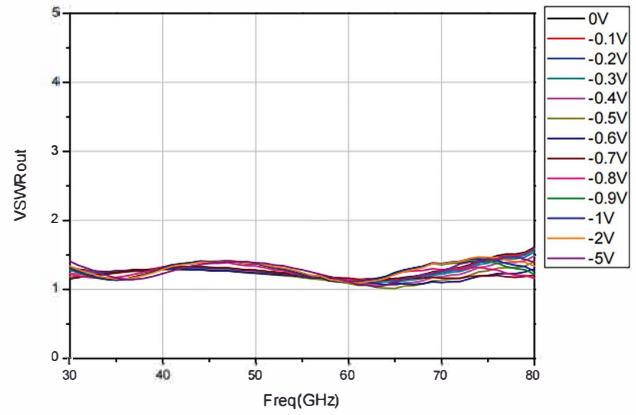
Attenuation Value (-0.1V ~ -1V, interval 0.1V) VS Frequency



Different Attenuation States Input Standing Wave VS Frequency



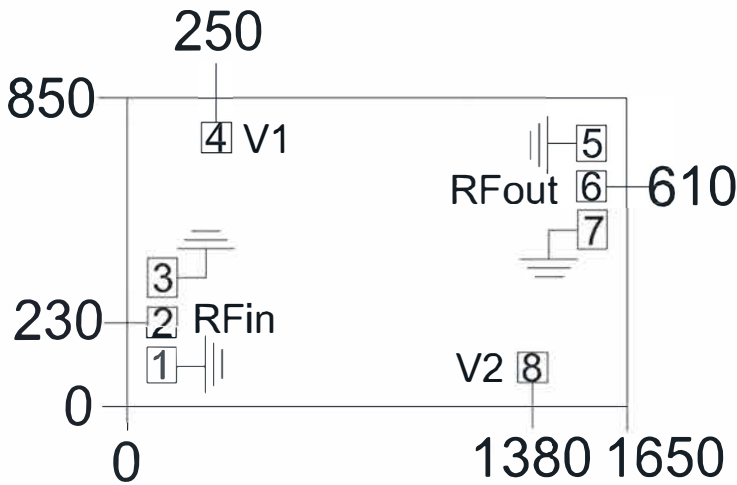
Different Attenuation States Output Standing Wave VS Frequency



Truth Table

Chip	V1/V2	RFin-RFout
All	-5V	ON: Insertion loss state
	0V	OFF: Max attenuation state

Outline Dimensions and Pressure Point Arrangement Diagram



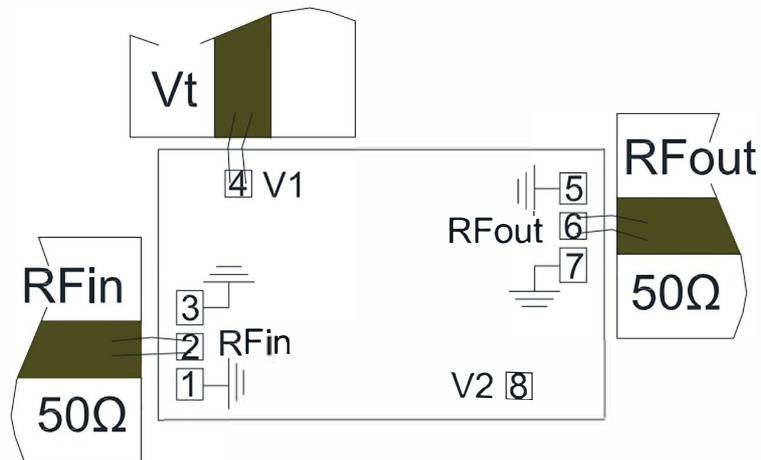
Note: The units in the figure are all micrometers (μm); The tolerance of the external dimensions is $\pm 100 \mu\text{m}$.

Pressure Point Arrangement Diagram

No.	Symbol	Function	Dimensions $\mu\text{m} \times \mu\text{m}$	Coordinate	
				X μm	Y μm
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 μm diameter gold wire) for input and output, with bonding wires as short as possible and not larger than 250 μm ;
- 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.