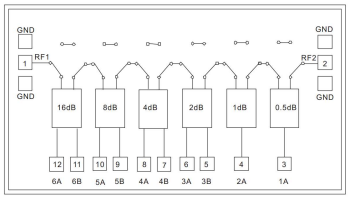
Performance

- Frequency: 0.1-8GHz
- Insertion loss: 2.5dB
- Attenuation range: 0.5~31.5dB
- Handling Power: +24dBm
- Chip size: 2.40*1.00*0.10mm

Functional Diagram

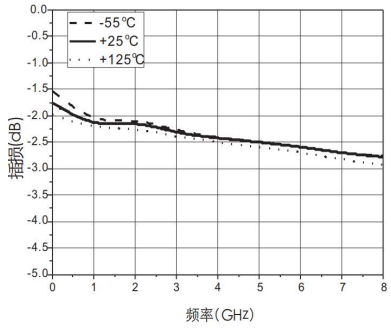


Electrical Specifications (Ta=+25℃, 0/-5V control, 50Ω system)

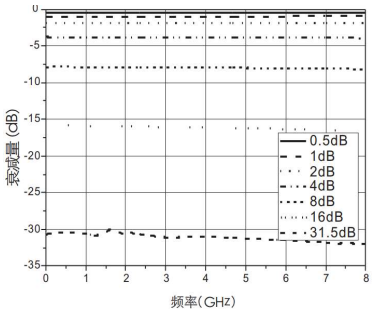
Parameter	Test Frequency	Min	Typical	Max	Unit
Insertion Loss	0.1GHz-8GHz	-	2.5	3.5	dB
Attenuation Range	0.1GHz-8GHz	0.5	-	31.5	dB
Return Loss (RF1, RF2)	0.1GHz-8GHz	-	15	-	dB
Attenuation Accuracy RMS	0.1GHz-8GHz	-	0.5	1	dB
Add phase shift	0.1GHz-8GHz	-	±5	-	Deg
Input P1dB	0.1GHz-8GHz	-	20	-	dBm
Input IP3	0.1GHz-8GHz	-	35	-	dBm
Switch time	0.1GHz-8GHz	-	10	-	ns

Test Curves (Two bonding lines which are Ø25um, 400um length applied to the RF ports)

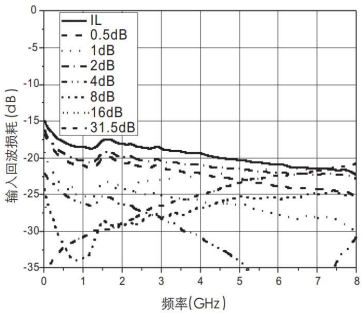
Insertion Loss



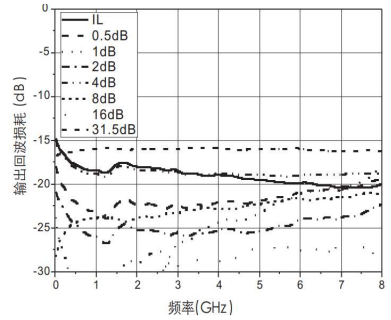
Attenuation



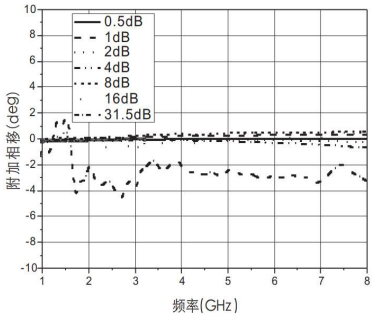
Input Return Loss



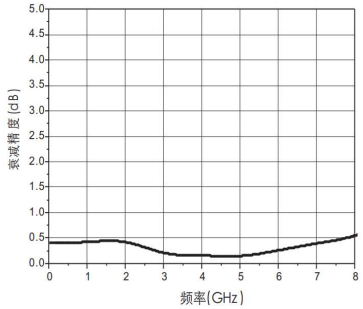
Output Return Loss



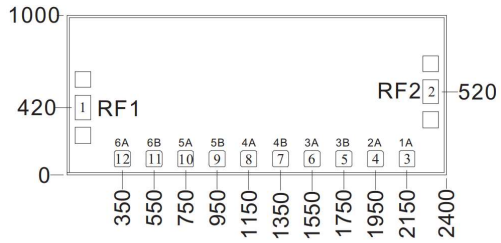
Add phase shift



Attenuation accuracy RMS



Outline Size



Note:

1. Unit: μm
2. Bottom side is gold plated
3. Bottom side is GND
4. Bonding pads is gold plated:
   1,2 size: 150*100μm, 3~12 size: 100*100μm
5. Don't bonding on thru holds
6. Tolerance: ±50μm

Truth Table

0.5dB	1dB	2dB		4dB		8dB		16dB		Attenuation
1A	2A	3A	3B	4A	4B	5A	5B	6A	6B	Status
1	1	1	0	1	0	1	0	1	0	Reference
0	1	1	0	1	0	1	0	1	0	0.5dB
1	0	1	0	1	0	1	0	1	0	1dB
1	1	0	1	1	0	1	0	1	0	2dB
1	1	1	0	0	1	1	0	1	0	4dB
1	1	1	0	1	0	0	1	1	0	8dB
1	1	1	0	1	0	1	0	0	1	16dB
0	0	0	1	0	1	0	1	0	1	31.5dB

Bonding Pads Description

Number	Symbol	Description
1,2	RF1, RF2	RF ports, 50 Ohm, external capacitor needed
3,4,6,8,10,12	CTRL A	Control port
5,7,9,11	CTRL B	Control port
-	GND	Bottom must be grounded

Control Voltage

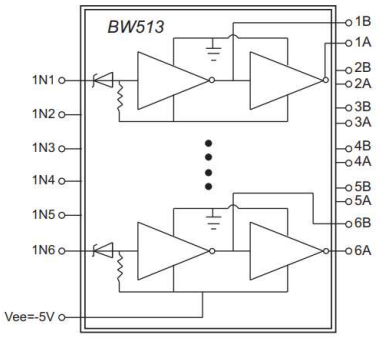
Status	Bias Condition
Low	0~-0.2V
High	-3~-5V

Absolute Max Ratings

RF Input Power (Vctl=-5V)	+24dBm
Control Voltage Range (A, B)	+0.5V ~ -7.0V
Junction Temperature	175℃
Storage Temperature	-65 ~ +150℃
Operating Temperature	-55 ~ +125℃
Static Protection Grade (HBM)	Class 1A

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Recommended Drive Circuits



Assembly Diagram