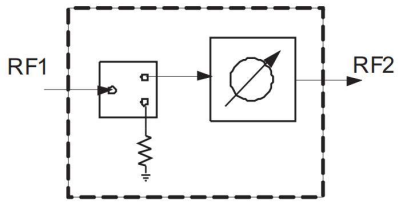
Performance

- Frequency: 32-38GHz
- Insertion loss: 7.5dB
- Phase Shift Error (RMS): 2°
- Amplitude Ripple: ±0.5dB
- Chip size: 2.3*1.6*0.1mm

Function Diagram

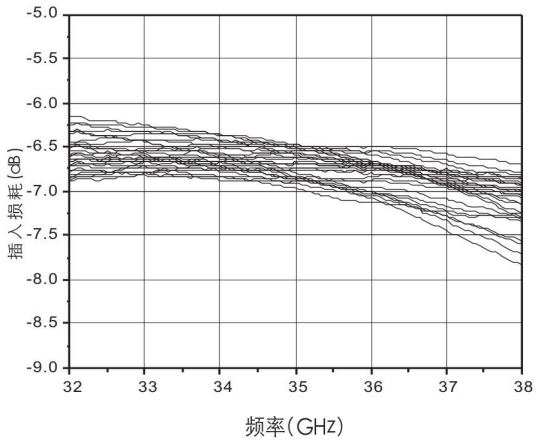


Electrical Specifications (Ta=+25℃, 0/-5V control, 50Ω system)

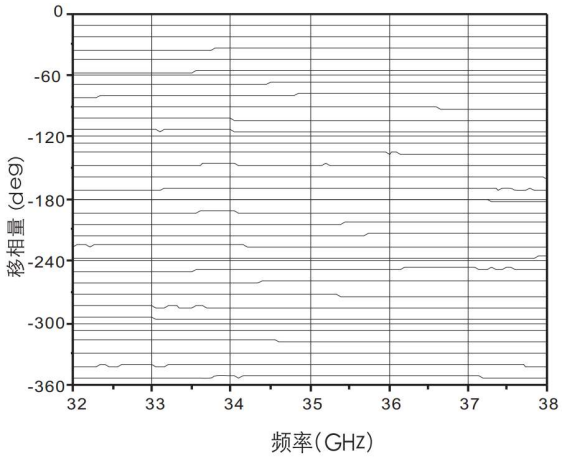
Parameter	Test Frequency	Min	Typical	Max	Unit
Insertion Loss	32-38GHz	-	7.5	8	dB
Amplitude Ripple	32-38GHz	-	±0.5	±0.6	dB
Phase shift error (RMS)	32-38GHz	-	2	2.5	deg
Phase shift state return loss (RF1、RF2)	32-38GHz		12		dB
Standby state Return loss (RF1)	32-38GHz	-	12		dB
Standby state Isolation	32-38GHz		35		dB
Input P-1	32-38GHz	-	-	-	dBm
Input IP3	32-38GHz	-	-	-	dBm
Switch time	-	-	10	-	ns

Test Curves

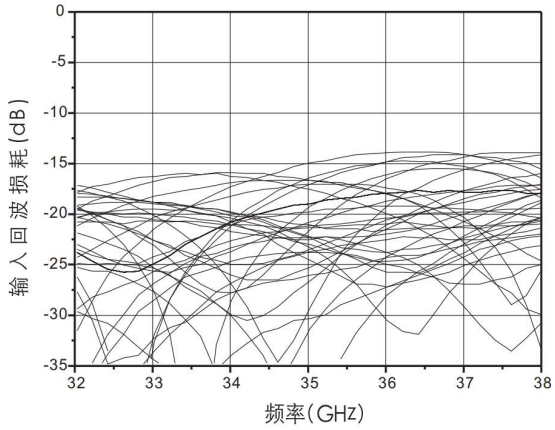
Insertion Loss



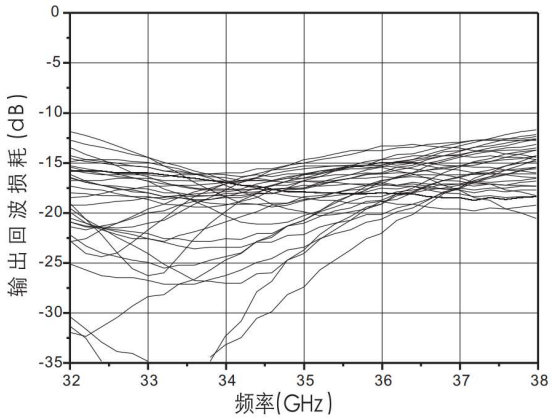
Phase Shift



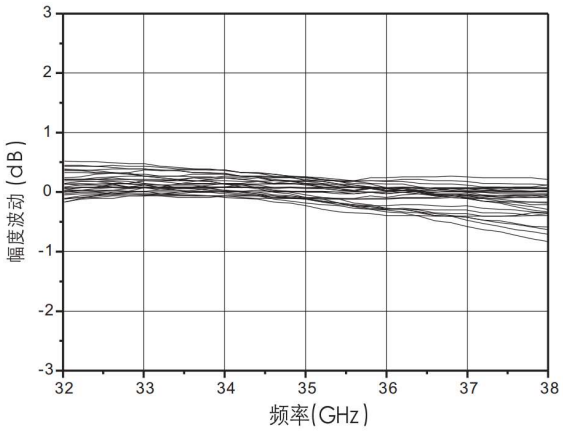
RF1 Return Loss



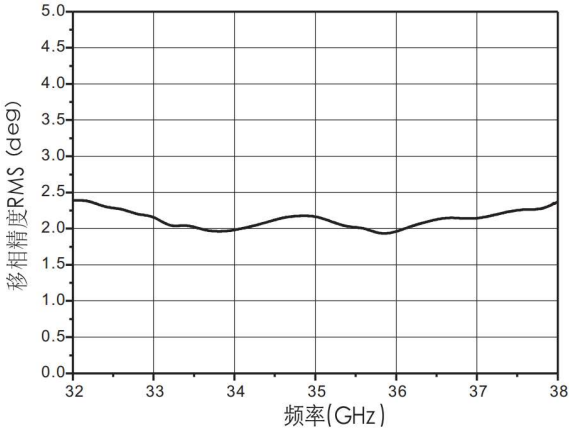
RF2 Return Loss



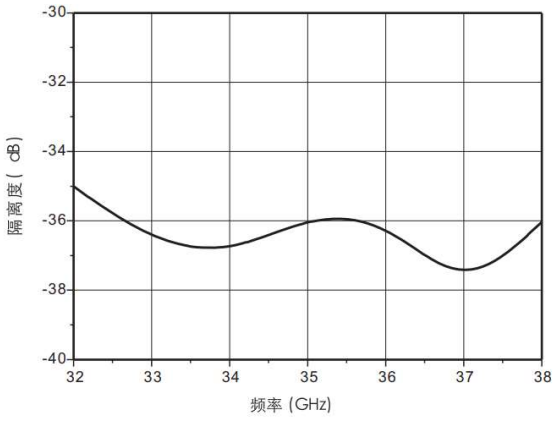
Amplitude Ripple



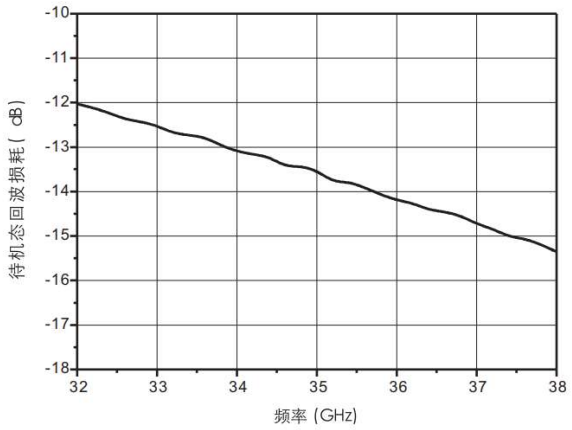
Phase Shift Error RMS



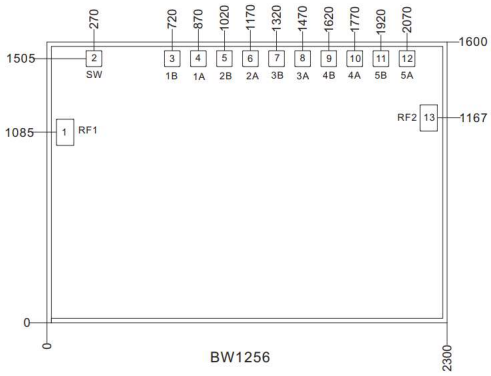
Standby state isolation (Switch off)



Standby state RF1 Return Loss (switch off)



Outline Size



Note:

1. Unit: um
2. Bottom side is gold plated
3. Bottom side is GND
4. Bonding pads is gold plated, size:
   1,13: 100*150(um); 2-12: 90*90(um)
5. Don't bonding on thru holds
6. Tolerance: ±50um

Truth Table

-11.25°		-22.5°		-45°		-90°		-180°		Phase shift Status
1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	
1	0	1	0	1	0	1	0	1	0	Reference
0	1	1	0	1	0	1	0	1	0	-11.25°
1	0	0	1	1	0	1	0	1	0	-22.5°
1	0	1	0	0	1	1	0	1	0	-45°
1	0	1	0	1	0	0	1	1	0	-90°
1	0	1	0	1	0	1	0	0	1	-180°

Bonding Pads Definition

Number	Symbol	Description
1,13	RF1, RF2	RF port, 50ohm
2	SW	Switch control port
3~12	Ctrl	Phase shift control port
-	GND	Bottom must be GND

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Control Voltage

Status	Bias
Low (0)	0~-0.2V
High (1)	-4.8~-5V

Truth Table 1

SW	Function
0	Standby state
1	Phase shift state

Absolute Max Ratings

Input Power	
CTRL Range (V1 to V6)	+0.5V~-7V
Junction Temperature	175℃
Storage Temperature	-65 ~ +150℃
Operating Temperature	-55 ~ +125℃
Static Protection (HBM)	Class 1A

Application