

SAC3323

GaAs MMIC 5-BIT DIGITAL PHASE SHIFTER
32~38GHz

Rev 1.2

Features

- Frequency : 32~38GHz
- Low Insertion Loss: 9dB
- Die Size: 2.1mmx1.25mmx0.1mm

Typical Applications

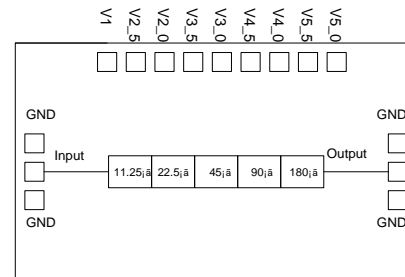
- EW
- Radar and Weather Radar
- SATCOM
- Beamforming Modules
- Phase Cancellation

General Description

SAC3323 is a 5-bit digital phase shifter which works from 32 to 38 GHz, providing 360 degrees of phase coverage with a LSB of 11.25 degrees.

SAC3323 features extremely low insertion loss variation of ± 1 dB across all phase states.

Functional Diagram



Electrical Performance

($T_A = +25^\circ\text{C}$, Control Voltage=0/-5V, $Z_O = 50\Omega$)

Parameter	Min.	Typ.	Max.	Units
Frequency	32~38			GHz
Input VSWR	—	1.8	—	:1
Output VSWR	—	2	—	:1
Insertion Loss	—	-9	—	dB
IL Variation	—	2	—	dB

Truth Table

Phase	V1	V2_5	V2_0	V3_5	V3_0	V4_5	V4_0	V5_5	V5_0
REF	1	1	0	1	0	1	0	1	0
-11.25°	0	1	0	1	0	1	0	1	0
-22.5°	1	0	1	1	0	1	0	1	0
-45°	1	1	0	0	1	1	0	1	0
-90°	1	1	0	1	0	0	1	1	0
-180°	1	1	0	1	0	1	0	0	1
-348.75	0	0	1	0	1	0	1	0	1

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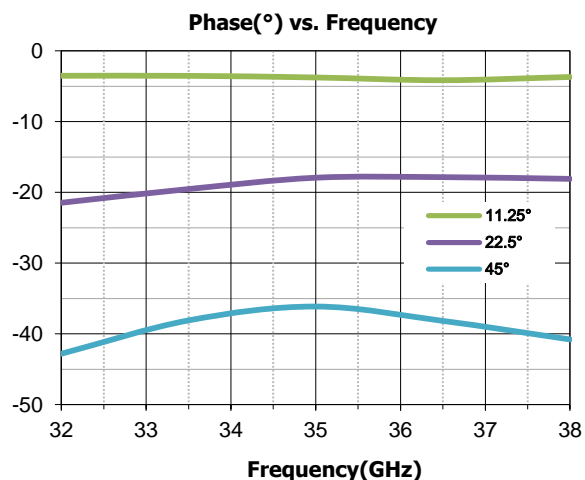
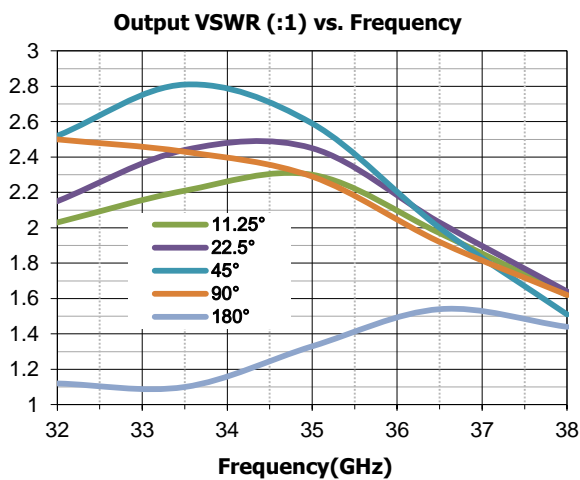
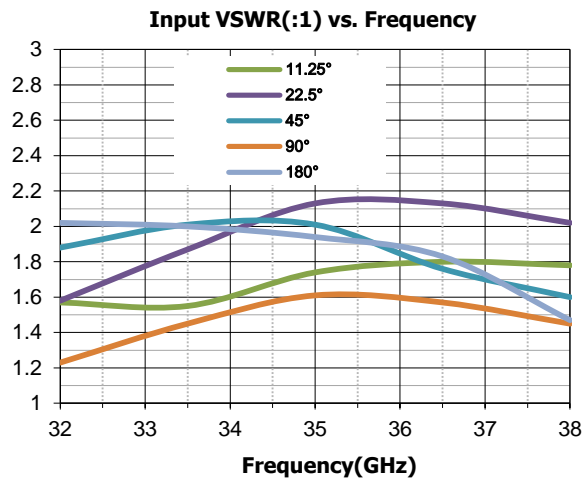
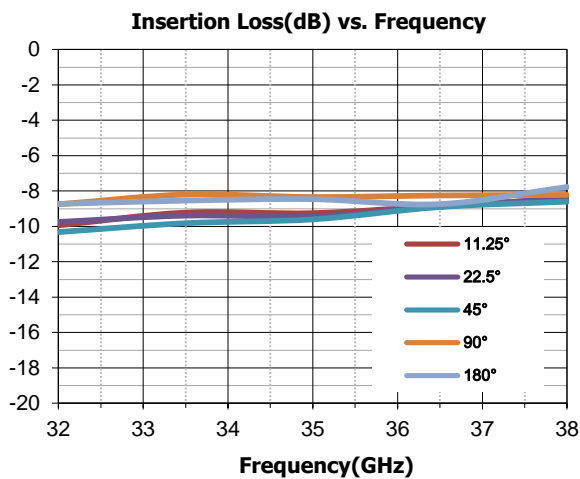
Absolute Maximum Ratings

Maximum Input Power	+15dBm	Operating Temperature	-55°C~+85°C
Maximum Input Voltage	-8V	Storage Temperature	-65°C~+150°C

Control Voltage

State	Bias
0	-0.2V~0V
1	-5V~-4.5V

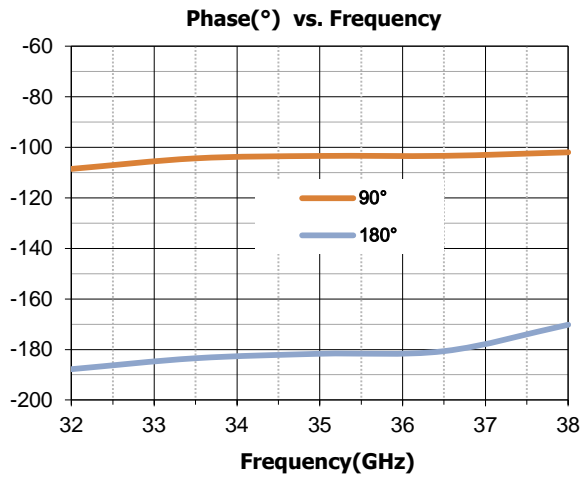
Typical Performance Curve



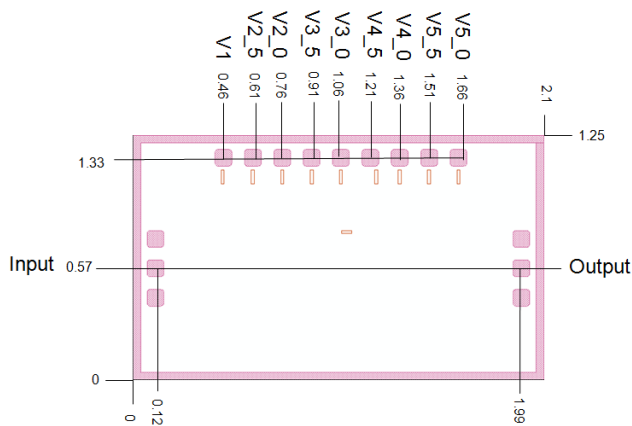
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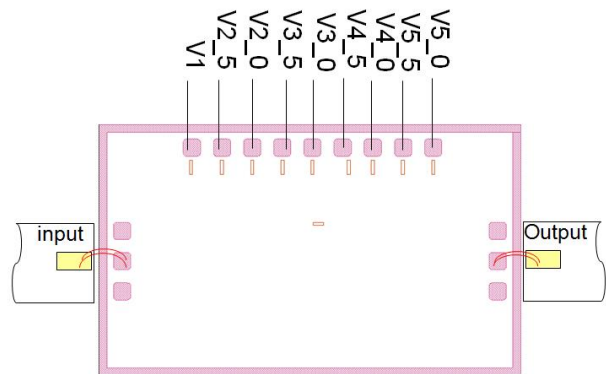
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Die Outline
(all dimensions in mm)



Assembly Diagram



Attention:

GaAs MMIC devices are susceptible to damage from electrostatic discharge. Proper precautions should be observed during handling, assembly and test.