SAC3303Q5

GaAs MMIC 6-BIT DIGITAL PHASE SHIFTER
2.2~2.6GHz

Rev 1.4

Features

- Frequency：2.2~2.6GHz
- RMS of Phase Accuracy：1.0°
- Low Insertion Loss：4.8dB
- Positive Voltage Control
- Package Size：QFN 5mm×5mm×1.2mm

Typical Applications

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

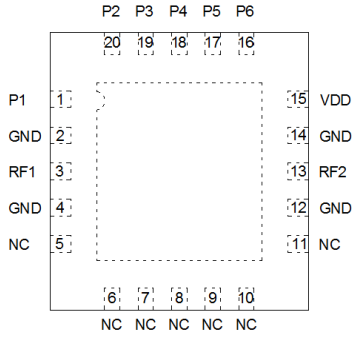
General Description

SAC3303Q5 is a 6-bit digital phase shifter which works from 2.2 to 2.6GHz, providing 360 degrees of phase coverage with a LSB of 5.625 degrees.

SAC3303Q5 features very low RMS of Phase Accuracy of 0.8 degrees and extremely low insertion loss variation of ±0.5 dB across all phase states. This high accuracy phase shifter is controlled with positive control voltage of 0/+5V.

SAC3303Q5 is assembled in a 3mm x 3mm QFN plastic package.

Functional Diagram



Electrical Performance (T_A=+25℃ , V_D=-5V,Control Voltage=0/+5V,Z_O=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency		2.2~2.6		GHz
Input VSWR	—	1.3	—	:1
Output VSWR	—	1.3	—	:1
Insertion Loss	—	-4.8	—	dB
IL Variation	-0.5	—	0.5	dB
Phase Accuracy	-1	—	1	°
RMS of Phase Accuracy	—	1.0	—	°

Truth Table (0 : 0V , 1 : +5V)

Phase	P1	P2	P3	P4	P5	P6
REF	0	0	0	0	0	0
-5.625°	1	0	0	0	0	0
-11.25°	0	1	0	0	0	0
-22.5°	0	0	1	0	0	0
-45°	0	0	0	1	0	0
-90°	0	0	0	0	1	0
-180°	0	0	0	0	0	1
-354.375°	1	1	1	1	1	1

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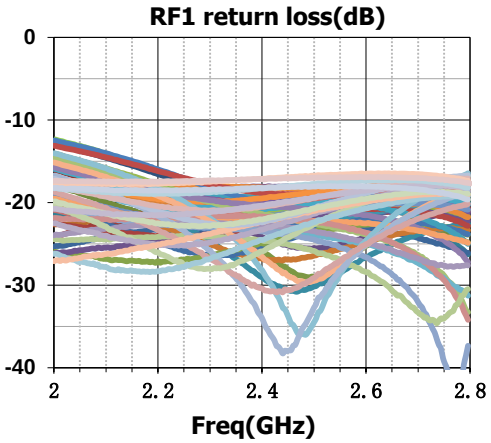
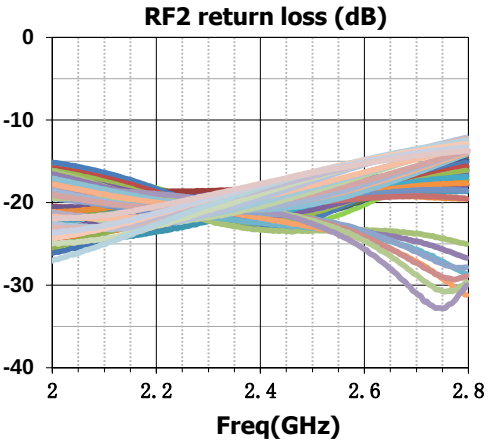
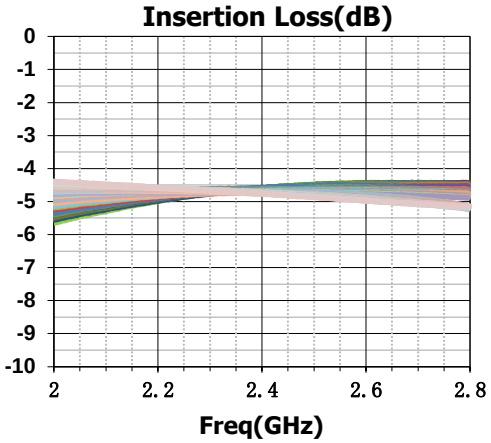
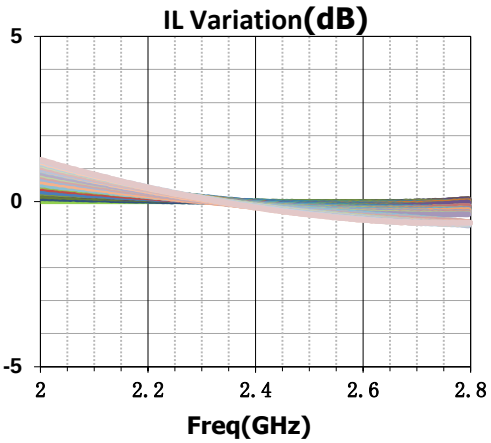
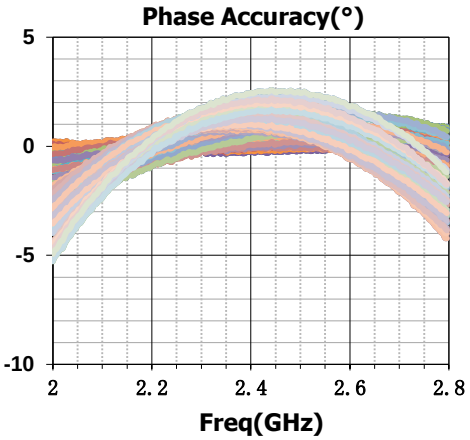
Typical Performance Curve

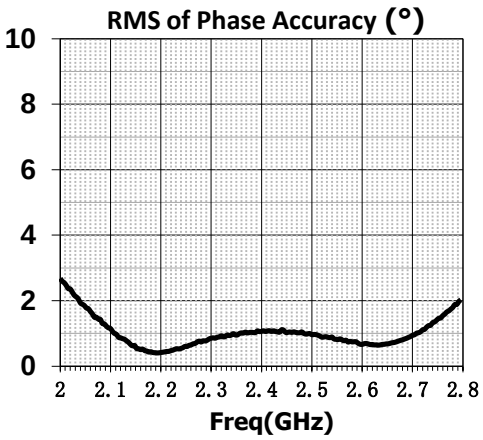












Absolute Maximum Ratings

Maximum Input Power	+23dBm	Operating Temperature	-55℃~+85℃
Maximum Input Voltage	-8V	Storage Temperature	-65℃~+150℃

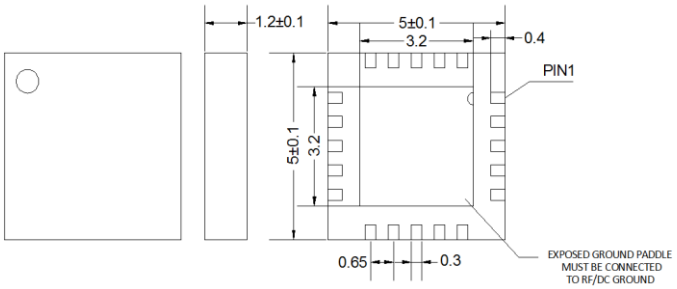
Control Voltage

State	Bias
Low	0~ 0.2V
High	4.5~ 5.5V

Power Supply

V_D	I_D
-5V	8mA

Outline Drawing
(all dimensions in mm)



Attention:

1. The moisture resistant grade of products is 2A, the storage environment ≤30° C/60% RH，The surrounding workshop Life is 4 weeks. 2. After un-packing, It is necessary to bake the parts for 6 hours in 125+/-5 degree environment before soldering.