SAC3308Q6

GaAs MMIC 6-BIT DIGITAL PHASE SHIFTER
14~18GHz

Rev 1.1

Features

- Frequency：14~18GHz
- RMS of Phase Accuracy：2.5°
- Low Insertion Loss：10dB
- Positive Voltage Control
- Size：6mm×6mm×1.2mm

Typical Applications

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

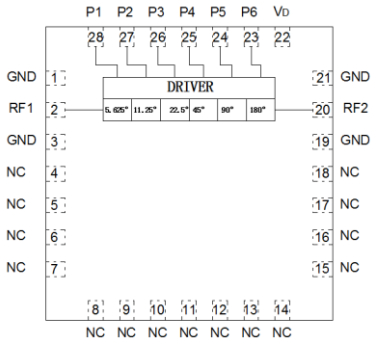
General Description

SAC3308Q6 is a 6-bit digital phase shifter which works from 14 to 18 GHz, providing 360 degrees of phase coverage with a LSB of 5.625 degrees.

SAC3308Q6 features very low RMS phase error of 2.5 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.

The bare chip is assembled in 6×6mm of QFN package.

Functional Diagram



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

Parameter	Min.	Typ.	Max.	Units
Frequency		14~18		GHz
RF1 Return Loss	—	-15	—	dB
RF2 Return Loss	—	-15	—	dB
Insertion Loss	—	-10	—	dB
IL Variation	—	±0.5	—	dB
Phase Accuracy	—	±4.0	—	°
RMS of Phase Accuracy	—	2.5	—	°

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

RoHS

SuperApex, LLC
2801 Lakeside Drive, Suite 208, Bannockburn, IL 60015, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55℃~+85℃
Maximum Input Voltage	-8V	Storage Temperature	-65℃~+150℃

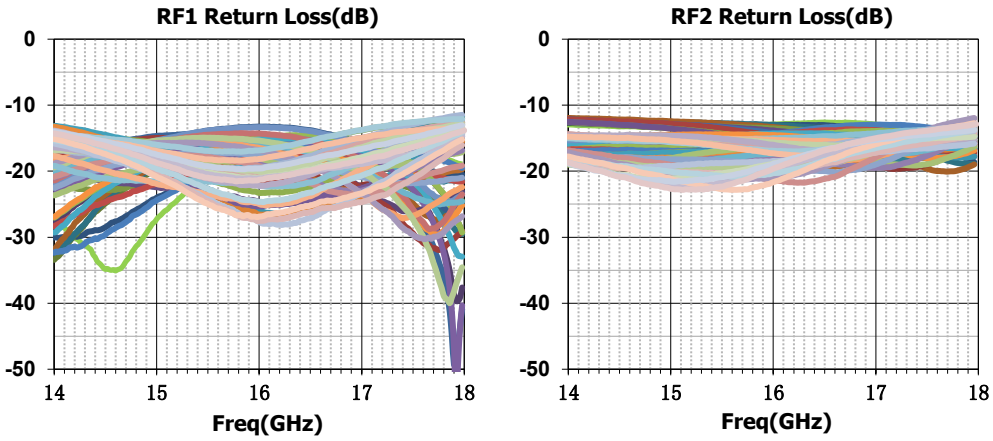
Control Voltage

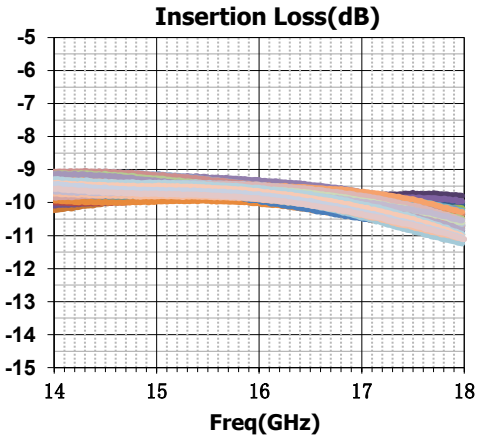
State	Bias
Low	0~ 0.2V
High	4.5~ 5.5V

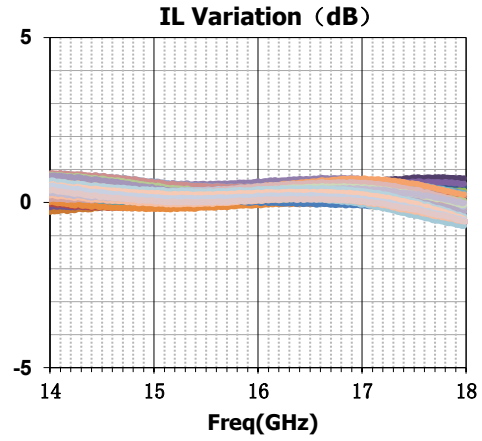
Power Supply

V_D	I_D
-5V	8mA

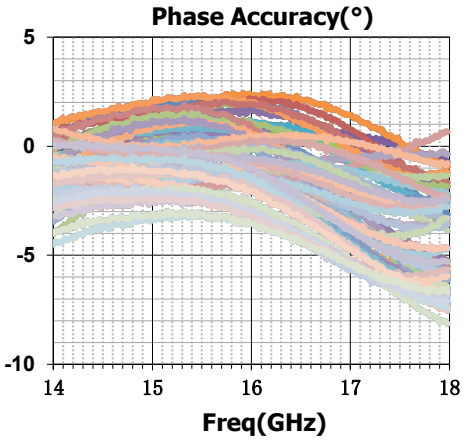
Typical Performance Curve

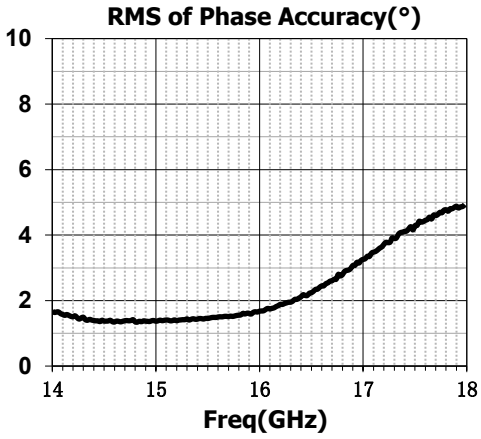




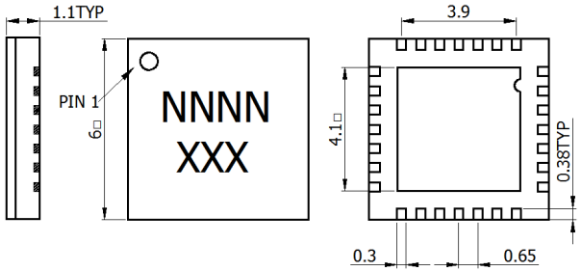


SuperApex, LLC
2801 Lakeside Drive, Suite 208, Bannockburn, IL 60015, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

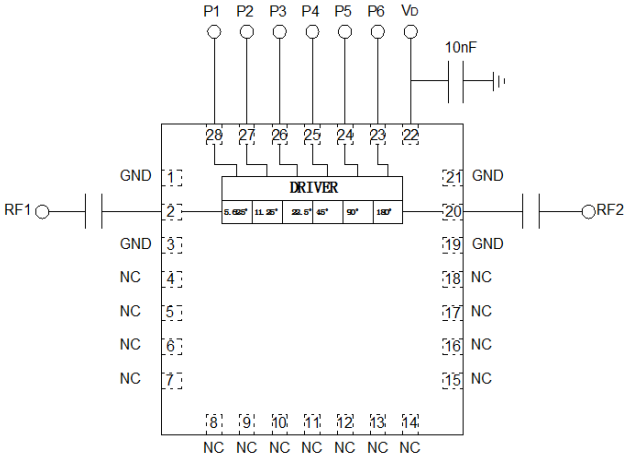




Outline Drawing
(All dimensions in mm)



Assembly Diagram



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.