SAC3402AQ4

GaAs MMIC Digital Attenuator
DC~6GHz

Rev 1.3

Features

- Frequency：DC~6GHz
- RMS of Attenuation Accuracy：0.8dB
- Low Insertion Loss：2.6dB
- Positive Voltage Control
- Package Size：4mm×4mm×1.2mm

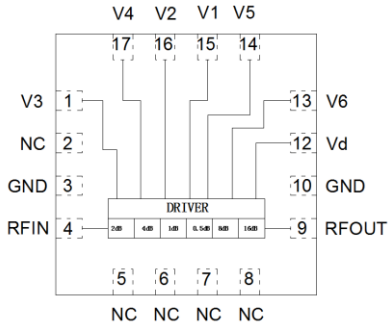
Typical Applications

- EW
- Cellular Infrastructure
- SATCOM
- Beamforming Modules
- Test Equipment and Sensors

General Description

SAC3402AQ4 is a broadband 6-bit GaAs digital attenuator MMIC chip. Covering DC to 6 GHz, the insertion loss is about 2.6dB typically. The attenuator bit values are 0.5dB, 1dB, 2dB, 4dB, 8dB, and 16dB for a total attenuation of 31.5dB. Six LVTTL-Compatible inputs are used to select each attenuation state.

Functional Diagram



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

Parameter	Min.	Typ.	Max.	Units
Frequency		DC~6		GHz
Input VSWR	—	1.4	—	:1
Output VSWR	—	1.4	—	:1
Insertion Loss	—	-2.6	—	dB
A_{TT}-Phase Error	-3	—	2.5	°
Attenuation Accuracy	-0.3	—	1.0	dB
RMS of Attenuation Accuracy	—	0.8	—	dB
Amplitude Settling Time	—	100	—	ns

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

Attenuation	V1	V2	V3	V4	V5	V6
REF	0	0	0	0	0	0
0.5dB	1	0	0	0	0	0
1dB	0	1	0	0	0	0
2dB	0	0	1	0	0	0
4dB	0	0	0	1	0	0
8dB	0	0	0	0	1	0
16dB	0	0	0	0	0	1
31.5dB	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(0.5~6GHz)	+23dBm	Operating Temperature	-55℃~+85℃
Bias Voltage	-5.25V	Storage Temperature	-65℃~+150℃

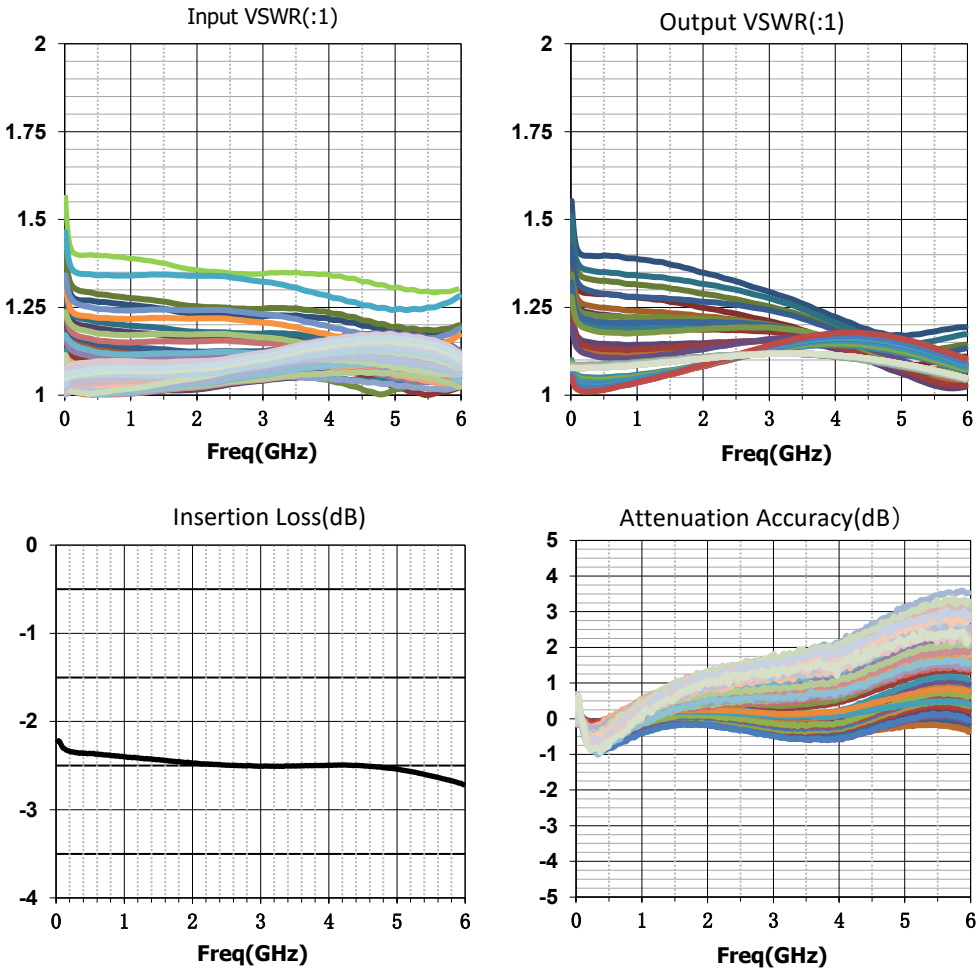
Control Voltage

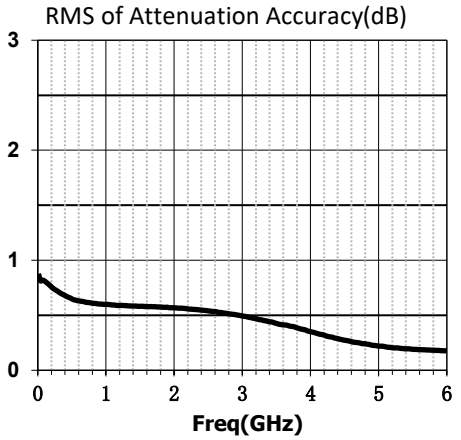
State	Bias
Low	0~ 0.3V
High	3.3~ 5V

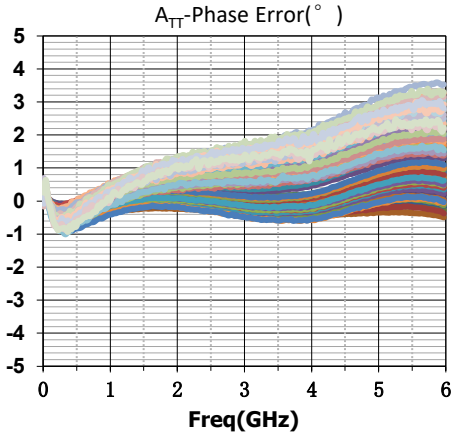
Power Supply

V_D	I_D
-5V	9mA

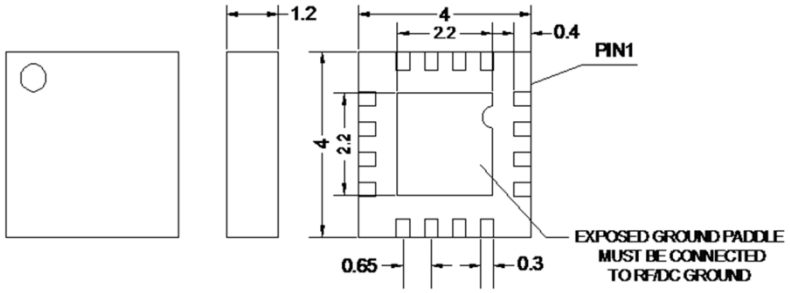
Typical Performance Curve



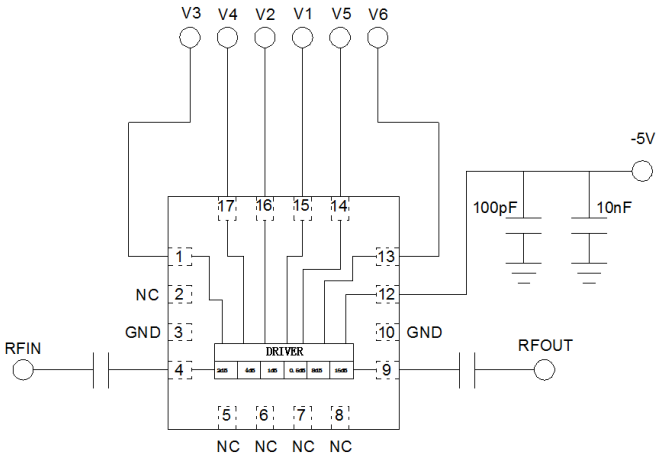




Outline Drawing
(All dimensions in mm)



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.

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