

SAC3064Q5

GaAs MMIC Distributed Amplifier (Package)
DC~30GHz

Rev 1.4

Features

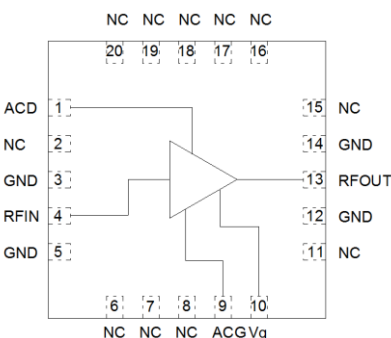
- Frequency: DC~30GHz
- Gain: 16dB
- Noise Figure: 6dB
- Output P_{-1dB}: 23dBm
- Size: 5mmx5mmx1.2mm

Typical Applications

- Radar and ECM
- RF/ Microwave radio
- Test and Measurement
- Fiber Optics

General Description

SAC3064Q5 is a GaAs MMIC distributed amplifiers which operates between DC~30GHz. The amplifier can provide 16dB gain, 23dBm Output P_{-1dB} from a 240mA supply current.



Electrical Performance

$T_A=25^\circ\text{C}$, $V_D=+8\text{V}$, $I_D=240\text{mA}$, $Z_0=50\Omega$

Parameter	Min.	Typ.	Max.	Units
Frequency Range	DC~30			GHz
Gain	—	16	—	dB
Gain Flatness	—	±1.5	—	dB
Reverse Isolation	—	-40	—	dB
Input Return Loss	—	-13	—	dB
Output Return Loss	—	-15	—	dB
Output P _{-1dB}	—	23	—	dBm
Noise Figure	—	6	—	dB
Supply Current (I_D)	—	240	—	mA

Adjust $V_G=-1\sim-0.2\text{V}$ to achieve $I_D=240\text{mA}$ typical

Absolute Maximum Ratings

Maximum Input Power	+18dBm, CW 1min	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-55°C~+125°C
Maximum VD Supply	+10V	VG Range	-1.5V(Pinch-off) ~-0.2V

SuperApex, LLC

1580 S. Milwaukee Ave. Suite 405, Libertyville, IL 60048, USA

Tel: 1-847-505-8319, 1-847-573-9866

E-mail: sales@superapexco.com

Website: www.superapexco.com

SAC3064Q5

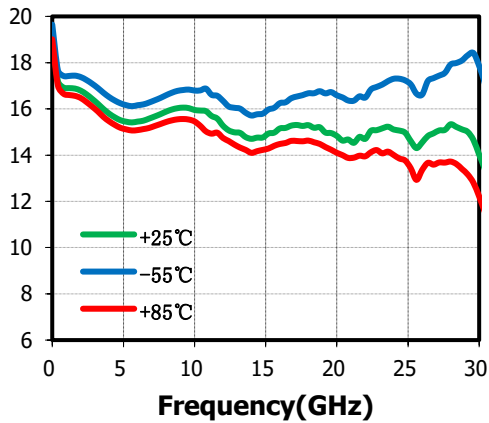


GaAs MMIC Distributed Amplifier (Package)
DC~30GHz

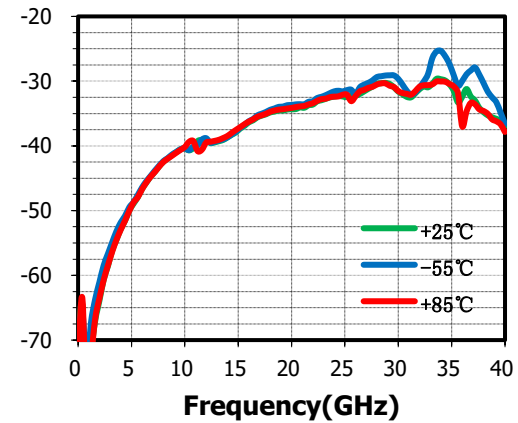
Rev 1.4

Typical Performance Curve

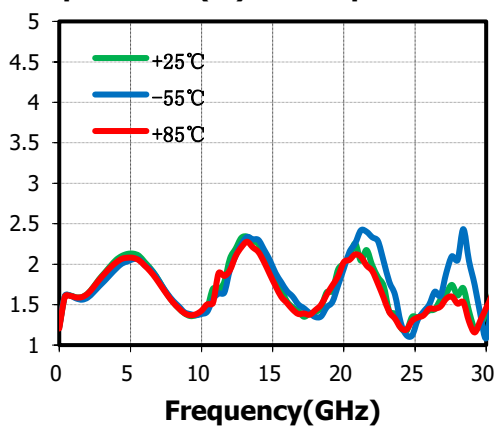
Small Signal Gain(dB) vs.Temperature



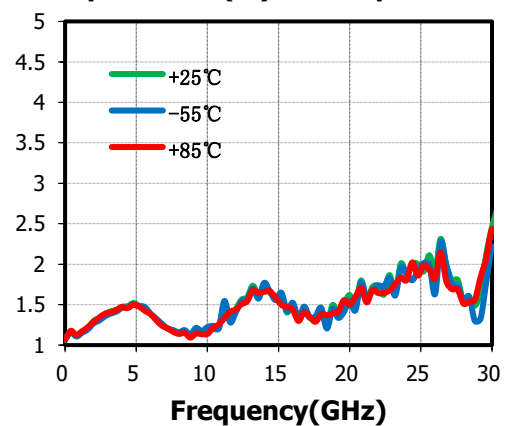
Reverse Isolation(dB) vs.Temperature



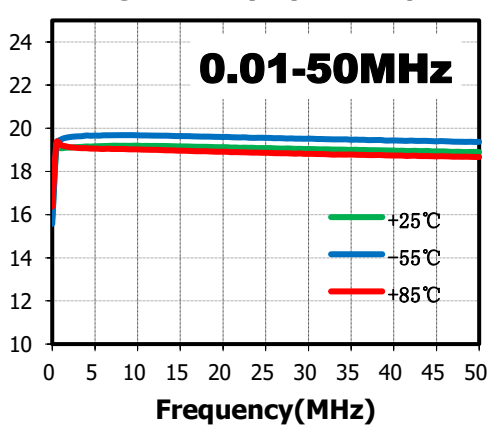
Input VSWR(:1) vs.Temperature



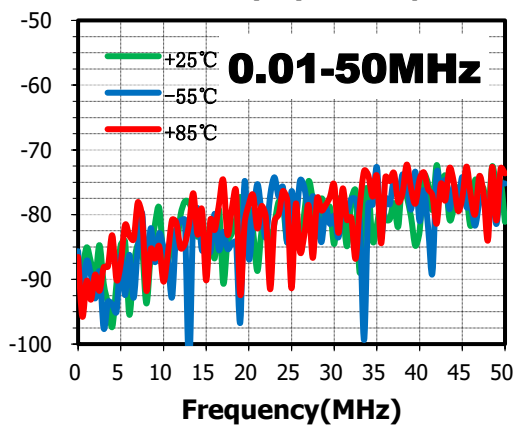
Output VSWR(:1) vs.Temperature



Small Signal Gain(dB) vs.Temperature



Reverse Isolation(dB) vs.Temperature



SuperApex, LLC

1580 S. Milwaukee Ave. Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

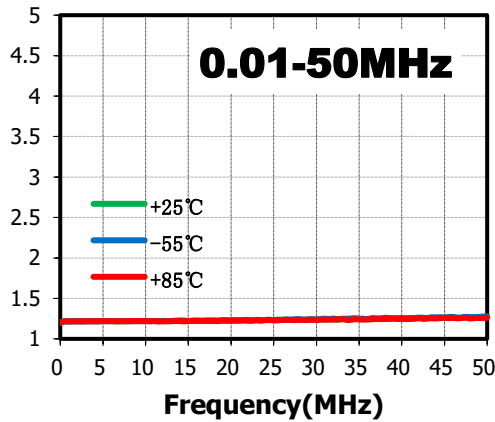
SAC3064Q5



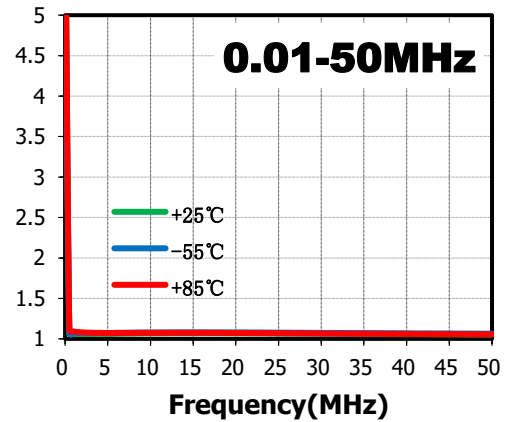
GaAs MMIC Distributed Amplifier (Package)
DC~30GHz

Rev 1.4

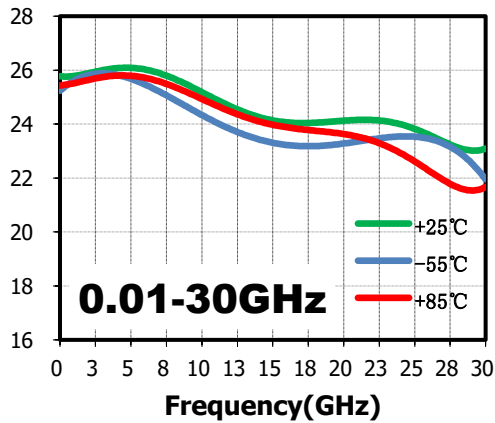
Input VSWR(:1) vs.Temperature



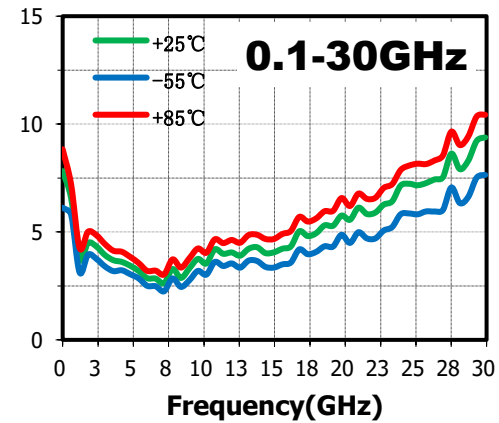
Output VSWR(:1) vs.Temperature



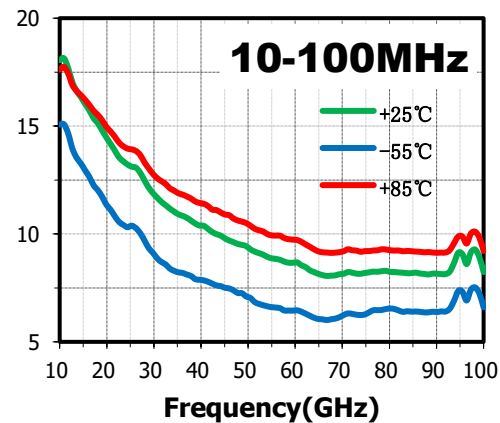
Output P-1dB(dBm) vs.Temperature



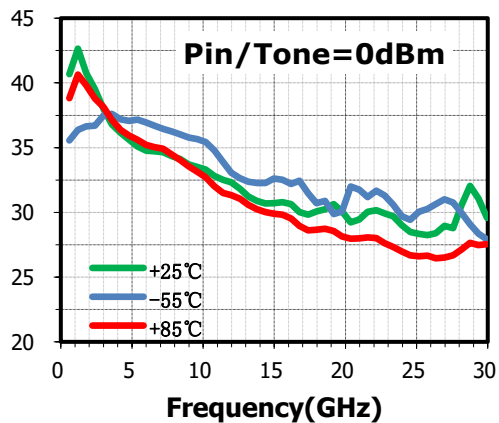
Noise Figure(dB) vs.Temperature



Noise Figure(dB) vs.Temperature



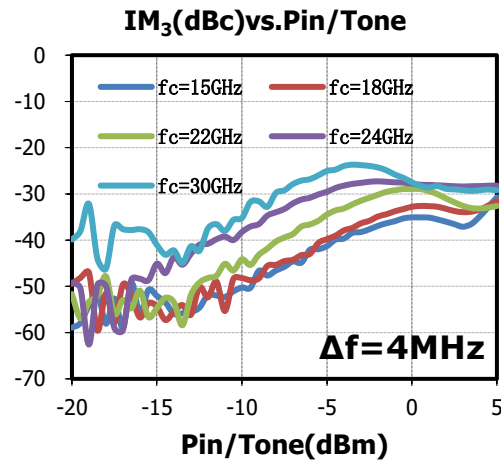
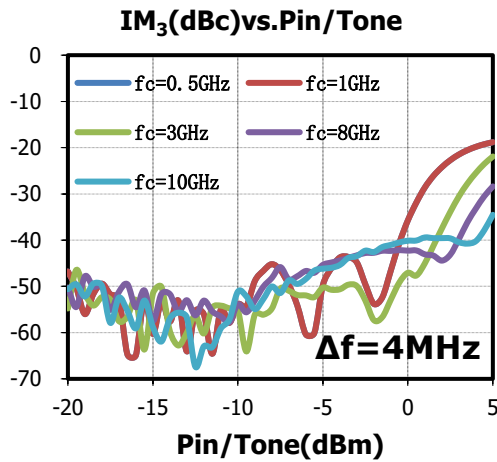
Output IP3(dBm) vs.Temperature



SAC3064Q5

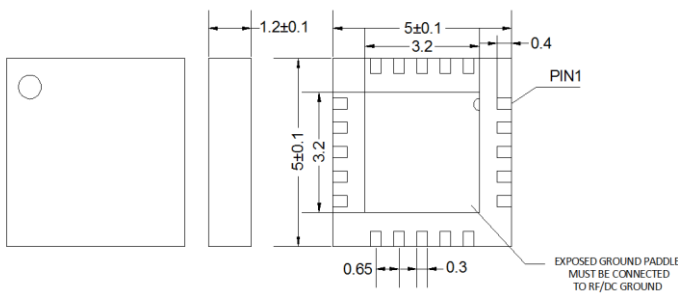
GaAs MMIC Distributed Amplifier (Package)
DC~30GHz

Rev 1.4

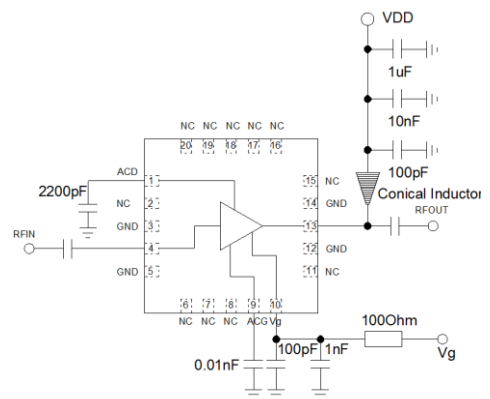


Outline Drawing

(All dimensions in mm)



Assembly Diagram



Pin Descriptions

Pin No.	function	Pin No.	function
1	LF termination	11	Connect to GND
2	NC or Connect to GND	12	Connect to GND
3	Connect to GND	13	RFOUT/Drain Bias
4	RFIN, DC coupled	14	Connect to GND
5	Connect to GND	15	NC or Connect to GND
6	NC or Connect to GND	16	NC or Connect to GND
7	NC or Connect to GND	17	NC or Connect to GND
8	NC or Connect to GND	18	NC or Connect to GND
9	LF termination	19	NC or Connect to GND
10	Gate Bias	20	NC or Connect to GND

SAC3064Q5



GaAs MMIC Distributed Amplifier (Package)
DC~30GHz

Rev 1.4

Notes

1. SAC3064Q5 requires Gate bias and Drain bias,
Turn-on: Apply Gate bias, Apply Drain bias
Turn-off: Decrease Gate bias to -1.5 V(pinch-off), Decrease Drain bias to 0 V
2. The moisture resistant grade of products is 2a, the storage environment $\leq 30^{\circ}\text{C}/60\% \text{RH}$, the surrounding workshop life is 4 weeks,
3. After un-packing, it is necessary to bake the parts for 6 hours in $125\pm 5^{\circ}$ environment before Soldering,
4. GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test,
5. Ultrasonic cleaning is prohibited.

Revision History

Revision	Date	Comment
1.0	Mar 08, 2019	First Release
1.4	Nov 07, 2023	Added more test data, Revise "Electrical Performance"

SuperApex, LLC

1580 S. Milwaukee Ave. Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com