

SAC3045Q5



GaAs MMIC LOW NOISE AMPLIFIER
2GHz~20GHz

Rev 1.2

Features

- Frequency: 2GHz~20GHz
- Noise Figure: 3dB
- Gain: 15.5dB
- Output P_{-1dB}: 14dBm
- Supply Voltage: +5V
- Size: 5mm×5mm×1.1mm

Typical Applications

- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

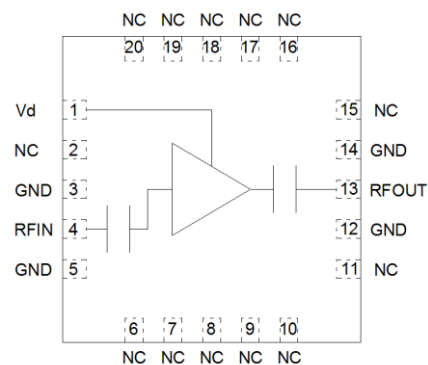
General Description

SAC3045Q5 is a wide band GaAs MMIC low noise amplifier which operates between 2GHz~20GHz. The amplifier provides 15.5dB of gain, 14dBm Output P_{-1dB} power from a +5V supply voltage.

The bare die was packaged in shell of QFN. The sides of a shell is 5mm.

Exposed ground paddle must be connected to RF/DC ground.

Functional Diagram



Electrical Performance (T_A=25°C, V_D=+5V, I_D=60mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2~20			GHz
Small Signal Gain	-	15.5	—	dB
Noise Figure	—	3	—	dB
Small Signal Gain Flatness	—	±1.0	—	dB
Input Return Loss	—	-18	—	dB
Output Return Loss	—	-15	—	dB
Output Power for 1 dB Compression(OP _{-1dB})	—	14	—	dBm
Drain Voltage(V _D)	4	5	6	V
Supply Current(I _D)	—	60	—	mA

Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C
Maximum V _D	+6V		

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

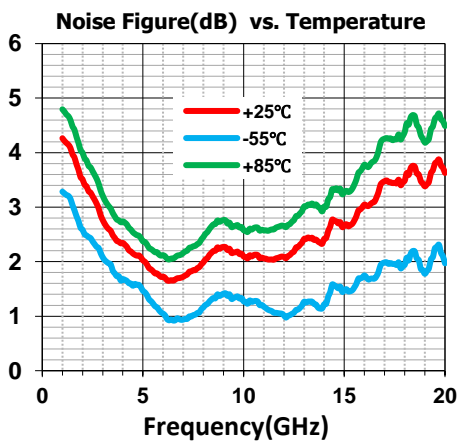
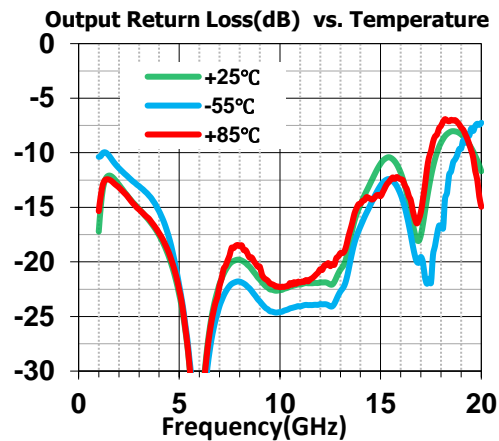
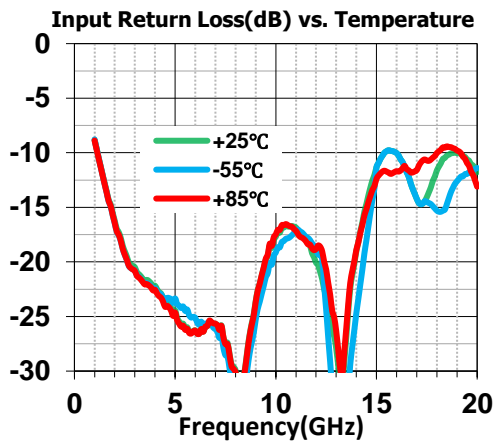
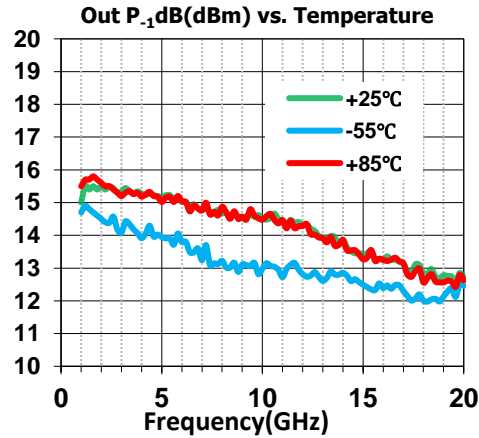
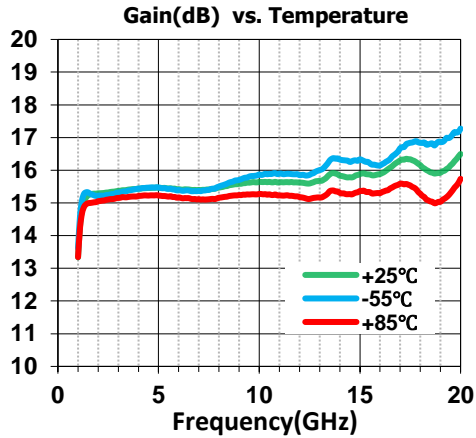
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Typical Performance Curve



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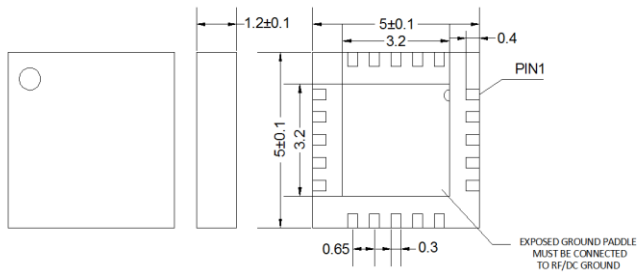
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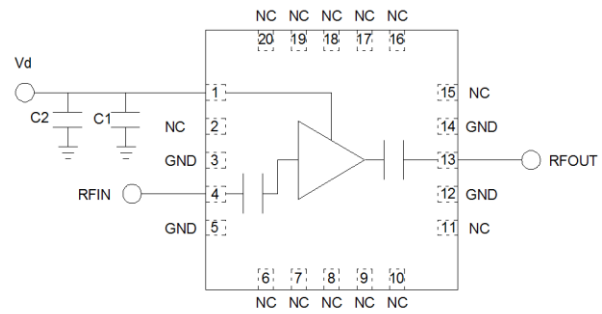
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Outline Drawing (All dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.
C1	1000pF	GRM188R61H102KA01	MURATA
C2	0.1uF	GRM022R61A104ME01L	MURATA

Attention:

1. The moisture resistant grade of products is 2A, the storage environment $\leq 30^{\circ}$ 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.