

SAC3930Q3

GaAs MMIC Driver Amplifier
0.05~1.5GHz

Rev 1.1

Features

- Frequency: 0.05~1.5GHz
- Gain: 12dB
- Noise Figure: 2.5dB typ.
- Single Power Supply: +5V/80mA
- Integrated Gain-Temperature Compensation Circuit
- Output P₁dB: 18dBm@1GHz
- OIP₃: 36dBm@1GHz
- Package Size: 3mm×3mm×1.2mm

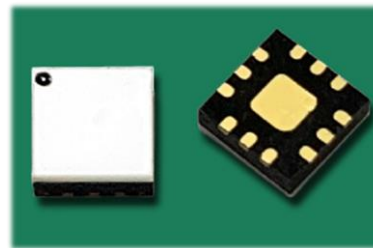
Typical Applications

- Communication Receiver
- Gain Block

General Description

SAC3930Q3 is a GaAs MMIC driver amplifier in leadless 3x3mm surface mount package, which operates between 0.05~1.5GHz. The amplifier provides 12dB of gain, 18dBm Output P₁dB while requiring 80mA from a +5V supply voltage.

Picture



Electrical Performance (T_A=25°C, V_d=+5V, I_D=80mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.05~1.5			GHz
Small Signal Gain	8	12	14	dB
Gain Flatness	—	±1	±1.5	dB
Reverse Isolation	—	-16	—	dB
Input/Output VSWR	—	1.5	2.2	:1
Noise Figure	—	2.5	4.5	dB
Output P ₁ dB	16	18	—	dBm
Output IP ₃	—	36*	—	dBm
Supply Current(I _D)	—	80	95	mA
Supply Voltage(V _D)	4.5	—	5.5	V

- Pout/Tone=6dBm Fc=1GHz, Δf=1MHz

Absolute Maximum Ratings

Maximum Input Power	+13dBm, CW 1min	Operating Temperature	-55°C~+85°C
Channel Temperature	150°C	Storage Temperature	-65°C~+150°C
Maximum V _D	7V		

SuperApex Corporation

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

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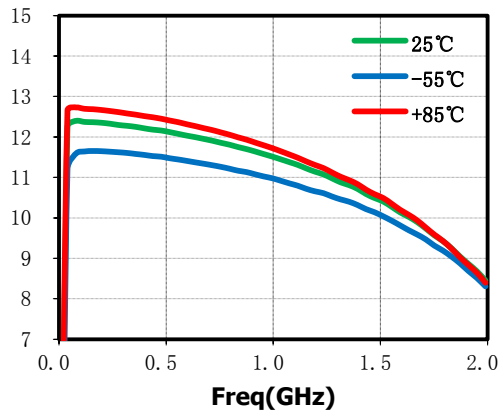
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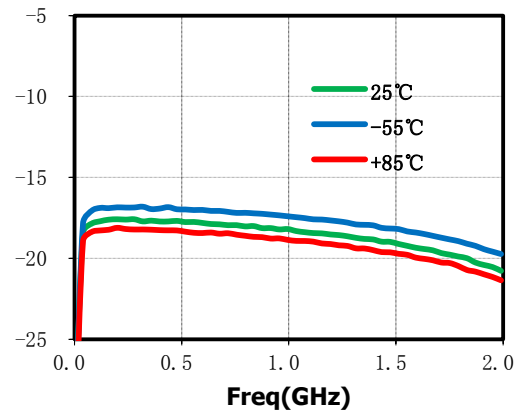
Typical Performance Curve

VD=+5V, IDQ=80mA

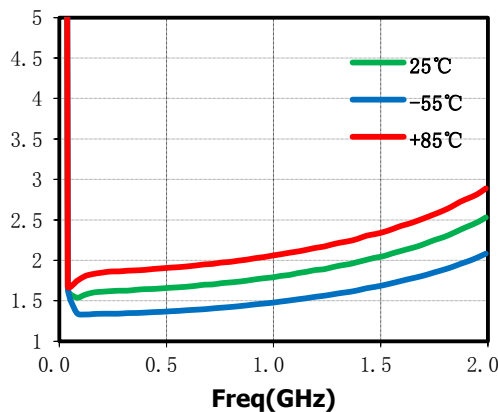
Small Signal Gain(dB)vs. Temperature



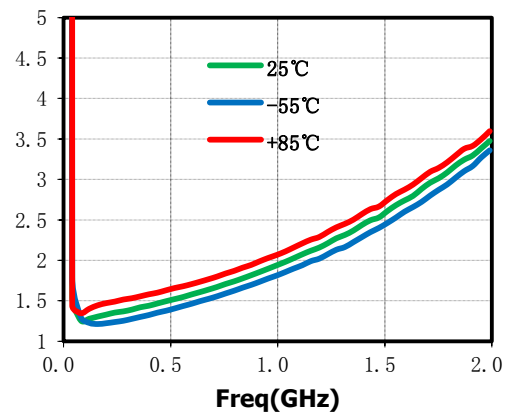
Reverse Isolation(dB)vs. Temperature



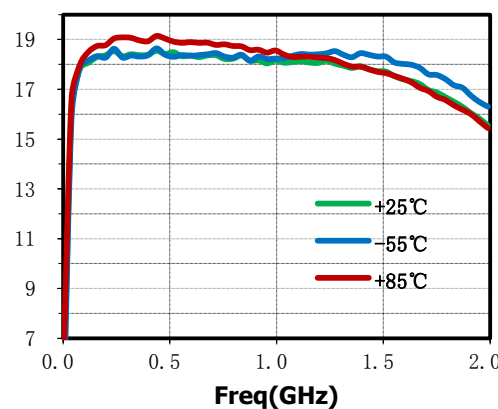
Input VSWR(:1) vs. Temperature



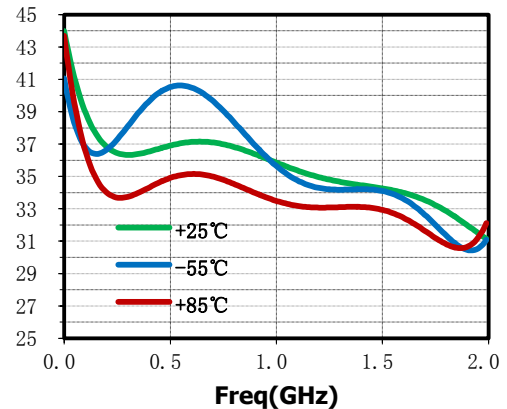
Output VSWR(:1) vs. Temperature



OP₁(dBm)vs. Temperature



OIP₃(dBm)vs. Temperature



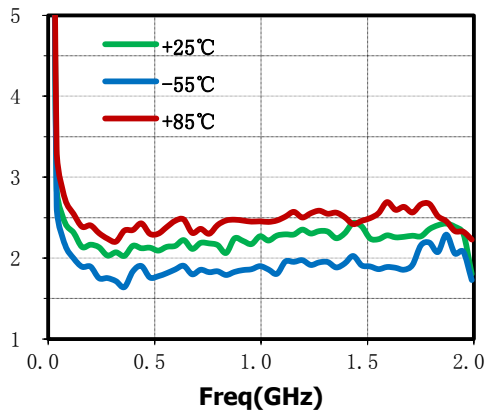
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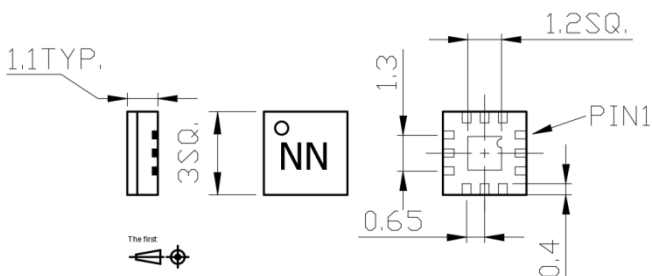
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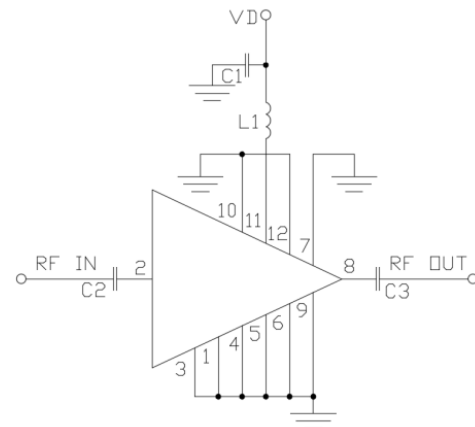
Noise Figure(dB)vs. Temperature



Outline Drawing
(all dimensions in mm)



Application Circuit



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	0.01μF	—	ANY	0402
C2、C3	120pF		ANY	0402
L1	—	MMZ1608S202ATD	TDK	0603

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.