SAC3102

GaAs MMIC Power Amplifier
8~12GHz 30dBm

Rev 1.1

Features

- Frequency：8~12GHz
- Linear Gain：25dB
- OutputP_{-3}dB：30dBm
- Power Supply：+8V@250mA(Quiescent Current)
- Die Size：2.4mm×1.45mm×0.1mm

Typical Applications

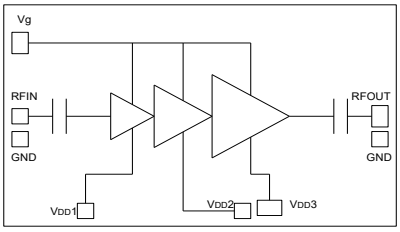
- Point-to-Point Radios
- SATCOM
- Military and Space
- Test and Measurement
- Radar

General Description

SAC3102 is a wideband GaAs MMIC power amplifier which operates in between 8 and 12GHz. The device provides 25dB of gain, 30 dBm of output power for 3 dB compression.

SAC3102 offers full passivation for increased reliability and moisture protection.

Functional Diagram



Electrical Performance (T_A=25℃, Z_0=50Ω)

Parameter	Test conditions	Min.	Typ.	Max.	Units
Output Power for 3 dB Compression (OP_{-3}dB)	VDS=8V VGS=-0.7V f=8~12GHz Pin＜ -20dBm	29.5	30	-	dBm
Linear Gain		-	25	-	dB
Gain Flatness		-	2	-	dB
Dynamic Current		-	300	-	mA
Power-Added Efficiency		-	40	-	%
Input Return Loss		-	-15	-	dB
Output Return Loss		-	-10	-	dB

Absolute Maximum Ratings

Maximum Input Power	+20dBm	Operating Temperature	-55℃~+85℃
Channel Temperature	+150℃	Storage Temperature	-65℃~+150℃
Maximum V_D	+10V	Maximum V_G	-2V

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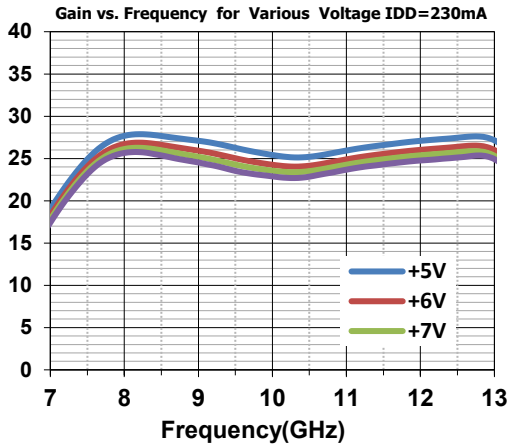
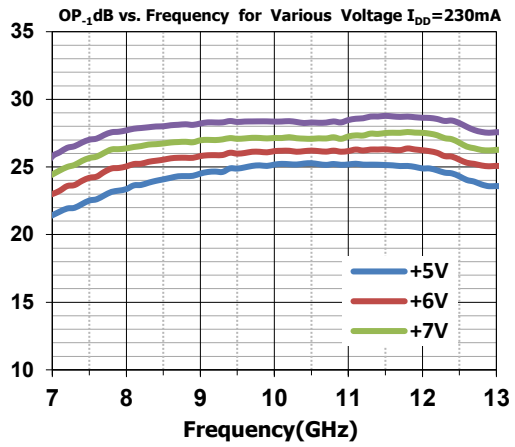
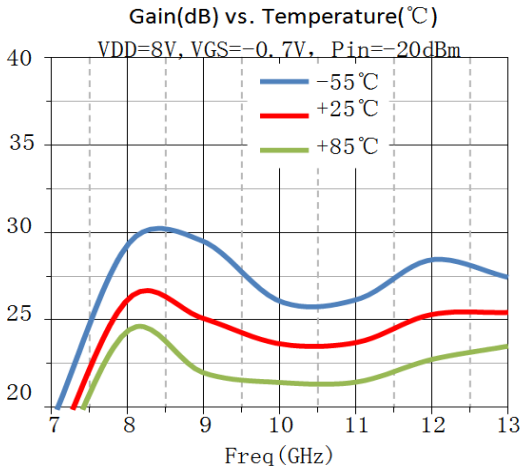
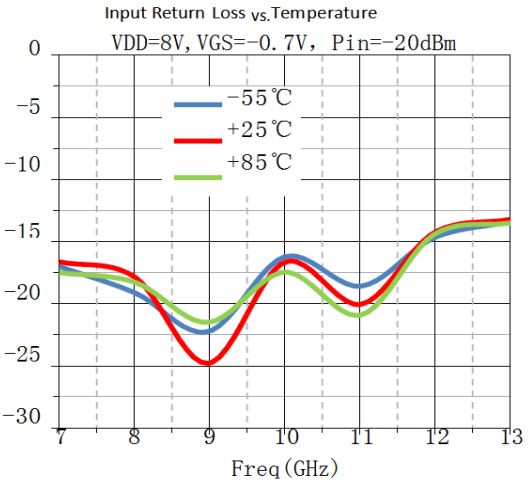
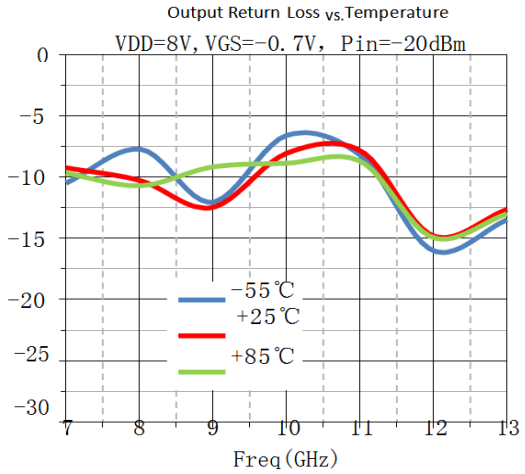
Typical Performance Curve

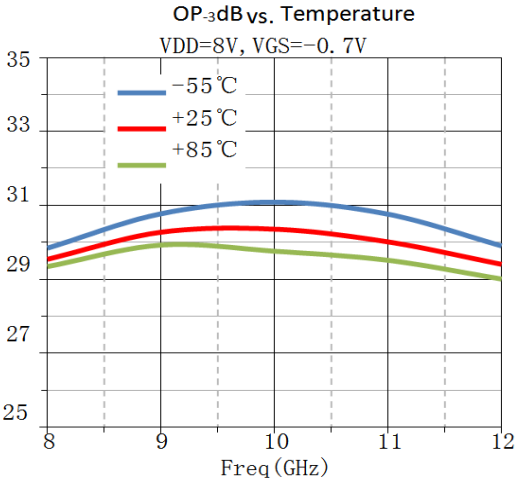


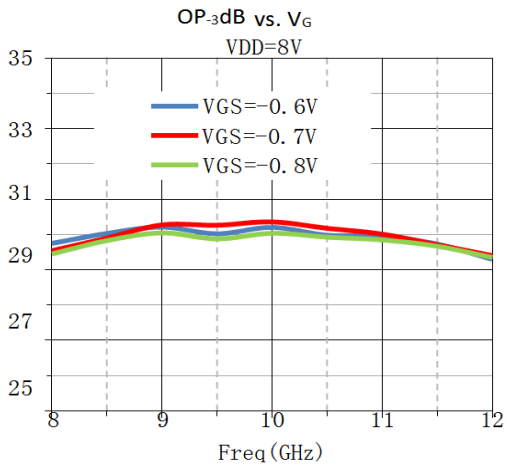


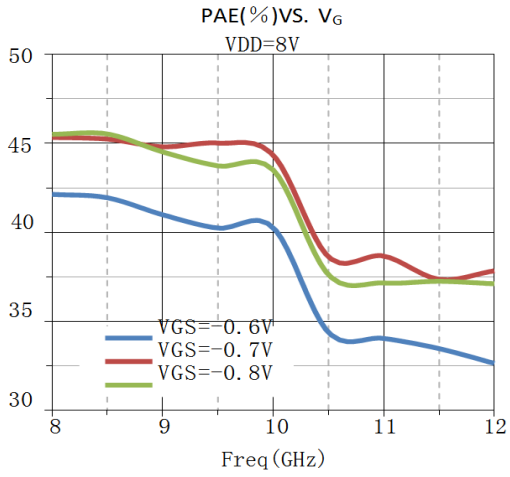






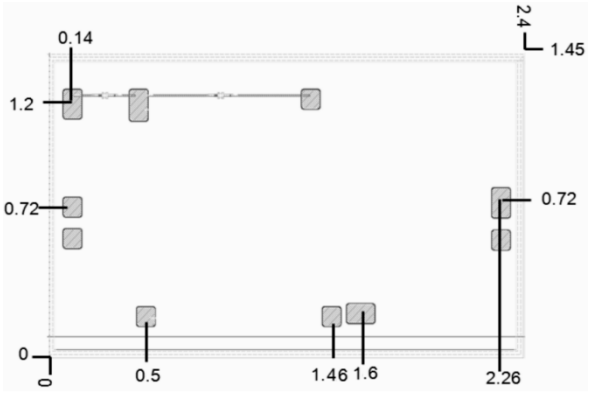




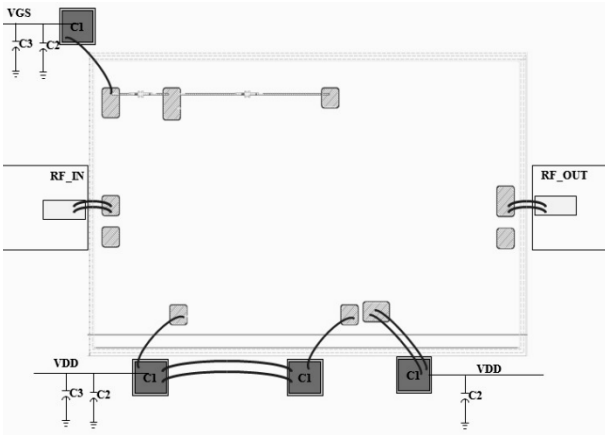


Die Outline

(All dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	300pF	CHIP CAPACITOR		—
C2	1000pF	CHIP CAPACITOR		—
C3	47uF	TPSB476K010R0500	AVX	—

Attention:

GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.