

Features

- Frequency: 0.9~1.3GHz
- Gain: 36dB
- Output P_{1dB}: 25.5dBm
- Supply Voltage: +8V@162mA
- Die Size: 1.3mm×1.25mm×0.1mm

Typical Applications

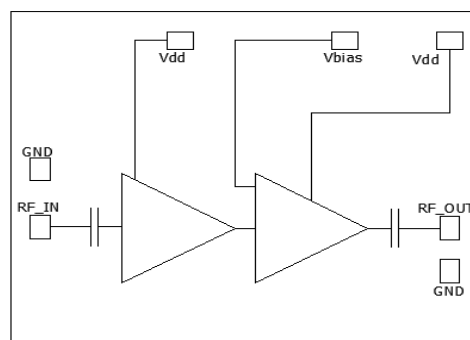
- EW
- Cellular Infrastructure
- SATCOM
- Beamforming Modules
- Test Equipment and Sensors

General Description

SAC3903 is a GaAs MMIC driver amplifier which operates between 0.9GHz~1.3GHz. The amplifier provides 36dB of gain, 25.5dBm Output P_{1dB} power and 3.2dB noise figure while requiring 162mA from a +8V supply voltage.

The chip offers full passivation for increased reliability and moisture protection. This amplifier is the perfect alternative to higher cost hybrid amplifiers.

Functional Diagram



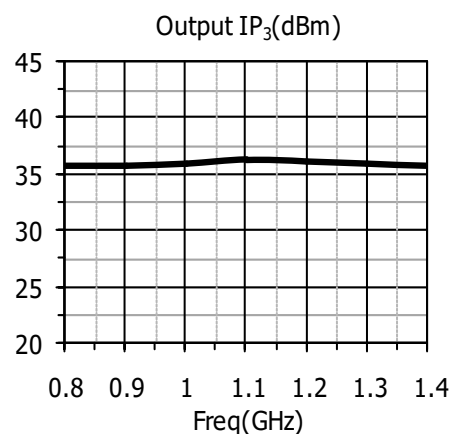
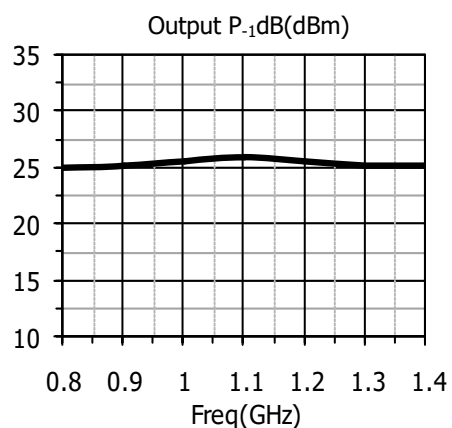
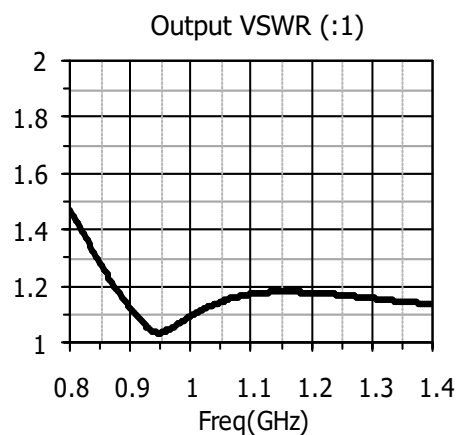
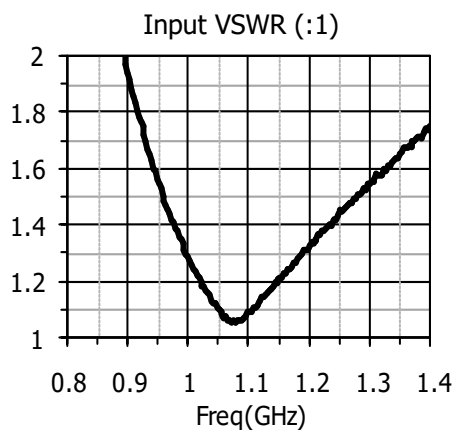
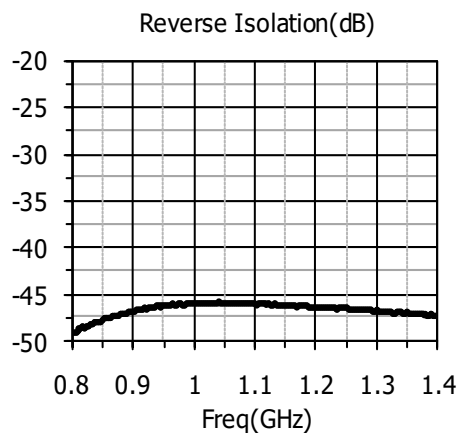
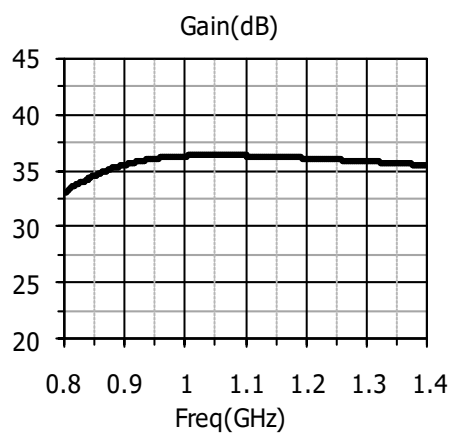
Electrical Performance (T_A=25°C, V_D=+8V, I_D=162mA, Z₀=50Ω)

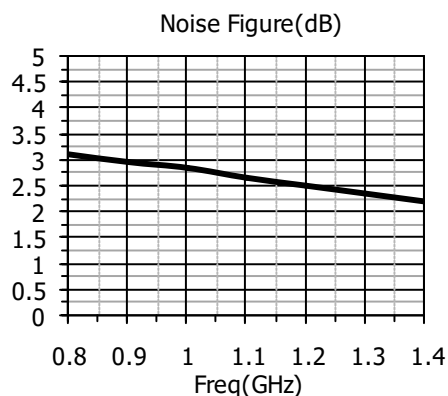
Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.9~1.3			GHz
Small Signal Gain	-	36	—	dB
Small Signal Gain Flatness	—	0.9	—	dB
Reverse Isolation	—	-47	—	dB
Input/Output VSWR	—	1.8	—	: 1
Noise Figure	—	3.2	—	dB
Output Power for 1 dB Compression (P _{1dB})	—	25.5	—	dBm
Output Third Order Intercept (IP ₃)	—	36	—	dBm
Supply Current (I _b)	—	162	—	mA

Absolute Maximum Ratings

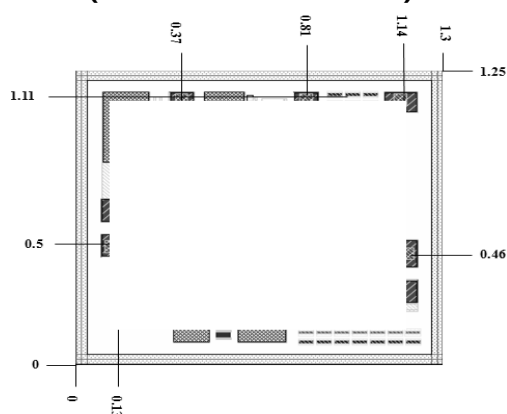
Maximum Input Power	+18dBm	Operating Temperature	-55°C~+85°C
Channel temperature	150°C	Storage Temperature	-65°C~+150°C

Typical Performance Curve

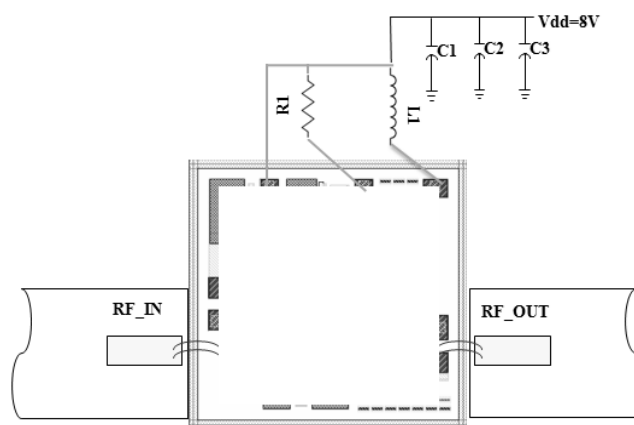




Die Outline
(All dimensions in mm)



Assembly Diagram



Component list

Reference Des.	Value	Part Number	Manuf.	Size
R1	300Ω	—	—	0603
C1	330pF	GRM1885C1H331JA01	MURATA	0603
C2	10nF	GRM1857U1A103JA44	MURATA	0603
C3	1uF	GRM188R60J105KA01	MURATA	0603
L1	10nH	0603LS10NXJLC	COILCRAFT	0603

Attention:

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