SAC1156

Wide-band Low Noise Amplifier Module
2~8.5GHz NF 1dB **Rev 1.1**

Features

- Frequency: 2 ~ 8.5GHz
- Gain: 27dB
- $OP_{-1}dB$: 10dBm
- Noise Figure: 1dB
- Supply Current: 40mA
- Hermetic Laser Sealing
- Module Size: 17.8mm×20mm×8.35mm

Typical Applications

- Microwave radio
- Telecommunication
- Test instrumentation

General Description

SAC1156 is a low noise amplifier module with a typical small signal gain of 27dB and a nominal $OP_{-1}dB$ of +10dBm across the frequency range of 2 to 8.5GHz.
SAC1156 is integrated with a SUPERAPEX proprietary low noise GaAs MMIC amplifier chip, high frequency microelectronic assembly techniques, and high reliability design to realize optimum low noise figure, wideband operation.

Picture

Electrical Performance (T_A=25℃, I_D=40mA, Z_O=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range		2 ~ 8.5		GHz
Gain	22	27	—	dB
Gain Flatness	—	±1.5	±2.5	dB
Noise Figure	—	1.0	1.35	dB
Output Power for 1 dB Compression ($OP_{-1}dB$)	8	10	—	dBm
Output IP_3	18	20	—	dBm
Input VSWR	—	1.6	2.2	:1
Output VSWR	—	1.6	2.2	:1
Supply Voltage	4.75	5	6	V
Supply Current	—	40	50	mA

Mechanical Specifications

Parameter	
Input/Output	SMA(F) Field-replaceable
Bias	Pin/Case ground
Case Material	4047 Aluminum alloy
Weight	11g

RoHS

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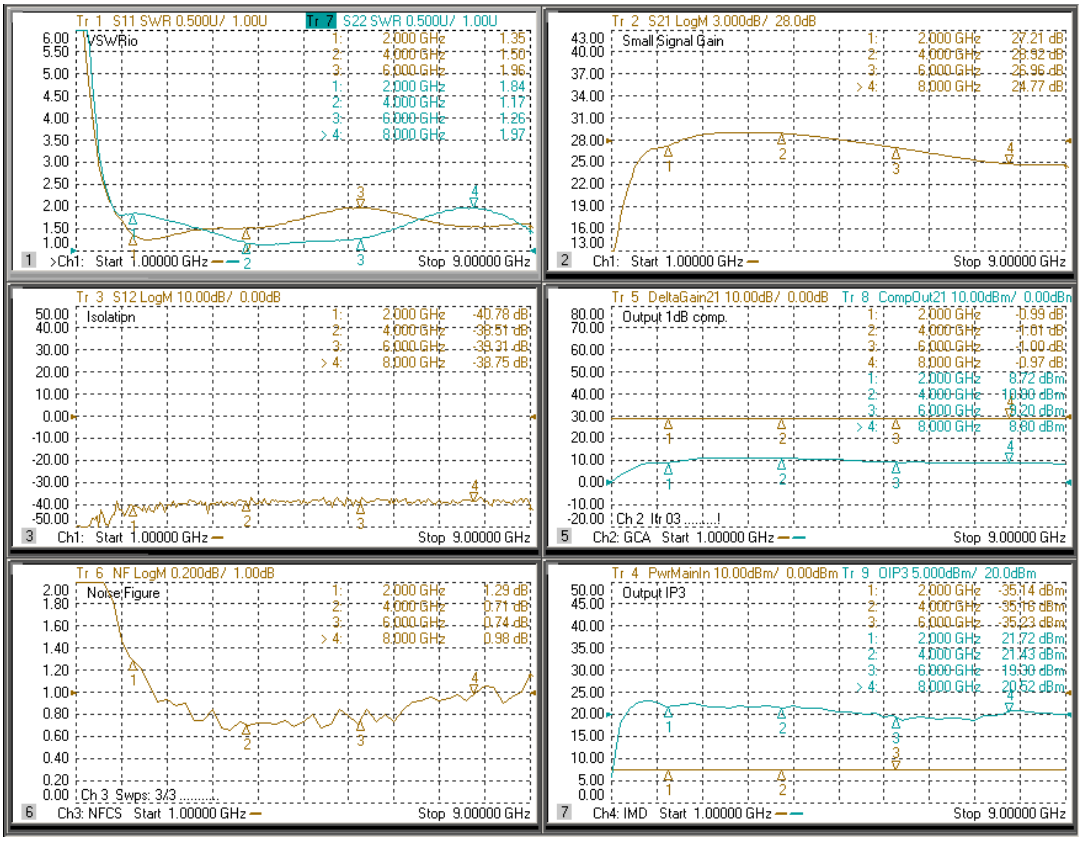
Absolute Maximum Ratings

Maximum Input Power	+13dBm	Operating Temperature	-40°C ~ +70°C
Channel Temperature	+150°C	Storage Temperature	-65°C ~ +150°C

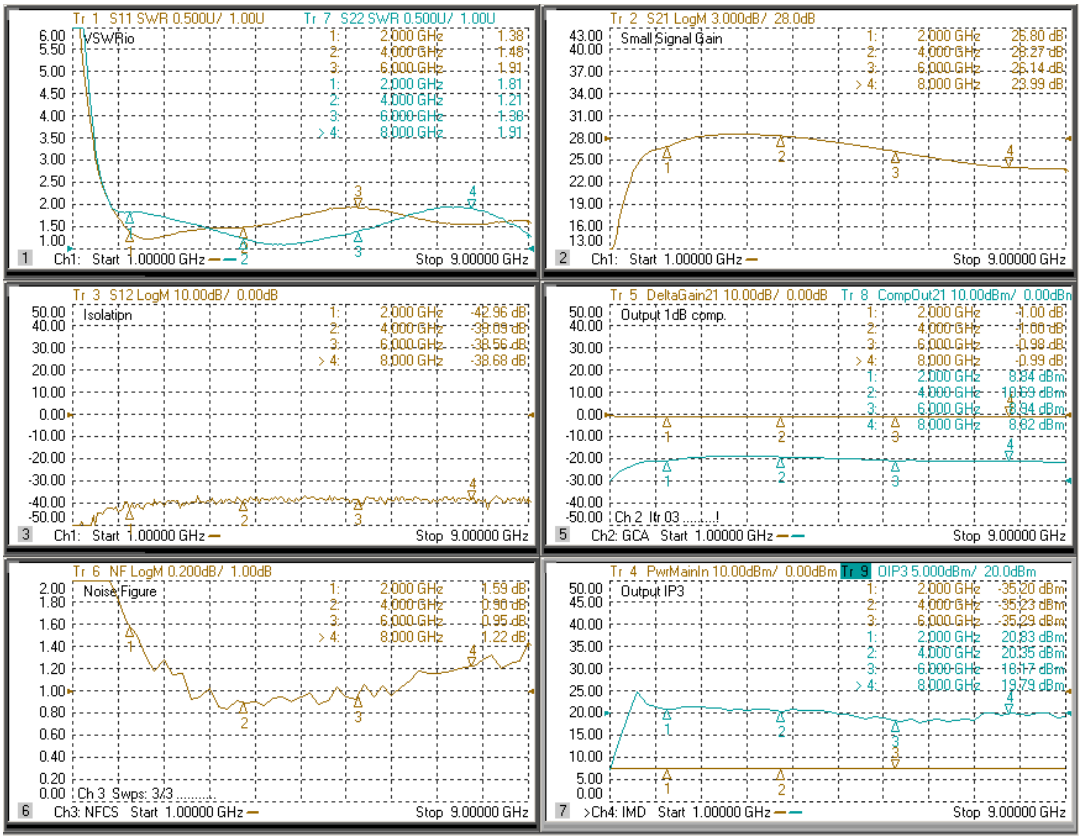
Typical Performance Curve

+V_{DC}=5V, I_D=40mA, Noise measurement by cold source method

T_A=25°C



T_A=+70°C


Tr 1 S11 SWR 0.500U/ 1.00U
Tr 7 S22 SWR 0.500U/ 1.00U
VSWRio
Ch1: Start 1.00000 GHz
Stop 9.00000 GHz
Tr 2 S21 LogM 3.000dB/ 28.0dB
Small Signal Gain
Tr 3 S12 LogM 10.00dB/ 0.00dB
Isolatipn
Tr 5 DeltaGain21 10.00dB/ 0.00dB
Tr 8 CompOut21 10.00dBm/ 0.00dBm
Output 1dB comp.
Ch2: GCA Start 1.00000 GHz
Tr 6 NF LogM 0.200dB/ 1.00dB
Noise Figure
Ch3: NFCS Start 1.00000 GHz
Tr 4 PwrMainIn 10.00dBm/ 0.00dBm
Tr 9 OIP3 5.000dBm/ 20.0dBm
Output IP3
>Ch4: IMD Start 1.00000 GHz

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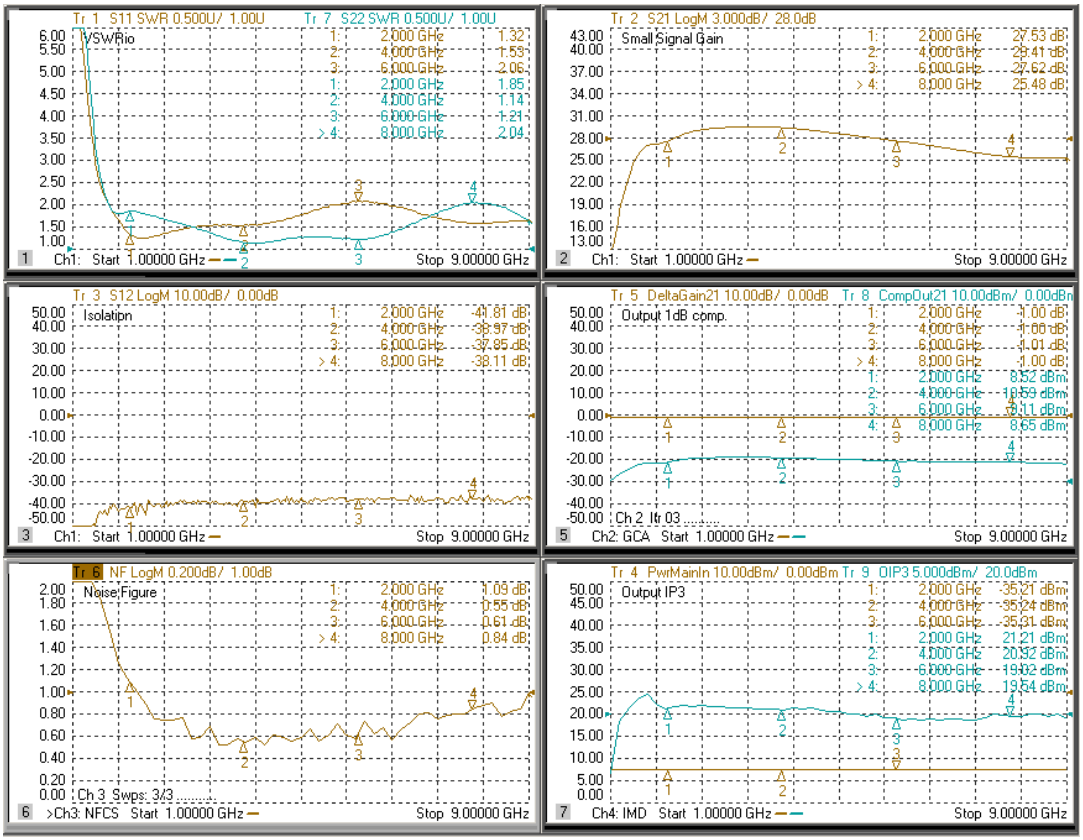
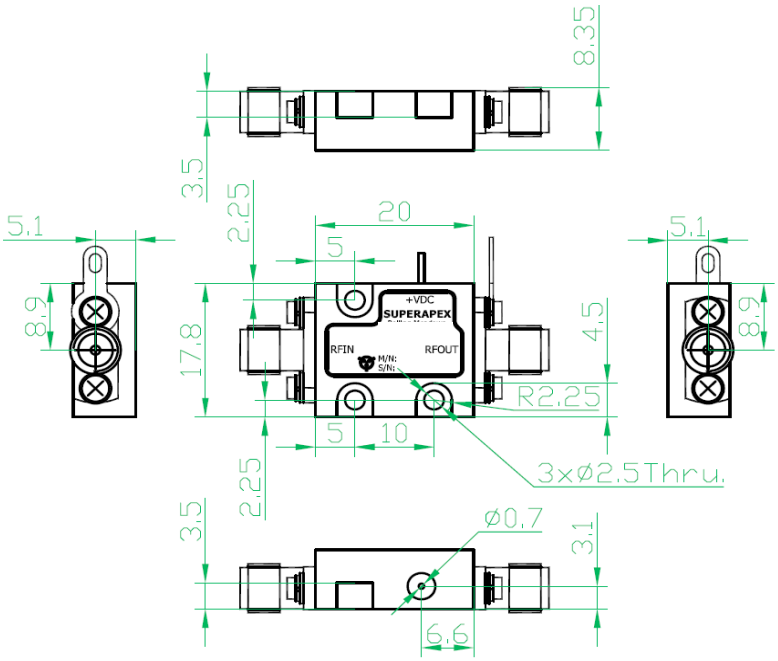
T_A=-55°C



Mechanical Outline

All dimensions are in millimeters



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