SAC1154

Wide-band Driver Amplifier Module
0.1～20GHz **Rev 1.2**

Features

- Frequency：0.1～20GHz
- Gain：46dB
- $OP_{-1}dB$：10dBm
- Noise Figure: 3.5dB Typ.
- Supply Current：230mA
- Hermetic Laser Sealing
- Size：40×20×9mm

Typical Applications

- Microwave radio
- Telecommunication
- Test instrumentation

General Description

SAC1154 is a driver amplifier module with a typical small signal gain of 46dB and a nominal $OP_{-1}dB$ of +10dBm across the frequency range of 0.1 to 20GHz

SAC1154 is integrated with SUPERAPEX proprietary GaAs MMIC amplifier chip, high frequency microelectronic assembly techniques, and high reliability design to realize optimum low noise figure, wideband operation.

Functional Diagram

Electrical Performance (T_A=25℃, V_D=12V, I_D=230mA, Z_O=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range		0.1～20		GHz
Gain	43	46	–	dB
Gain Flatness	–	±1.5	±2	dB
Noise Figure*	–	3.5	4.5	dB
Output Power for 1 dB Compression ($OP_{-1}dB$)	9	10	–	dBm
Output IP_3	–	22	–	dBm
Input VSWR	–	1.4	1.8	:1
Output VSWR	–	1.4	1.8	:1
Supply Voltage	9	–	15	V
Supply Current	–	230	260	mA

*Frequency: 1～18GHz

Mechanical Specifications

Parameter	
Input/Output	SMA(F) Field-replaceable
Bias	Pin/Case ground
Case Material	4047 Aluminum alloy
Weight	35g

RoHS

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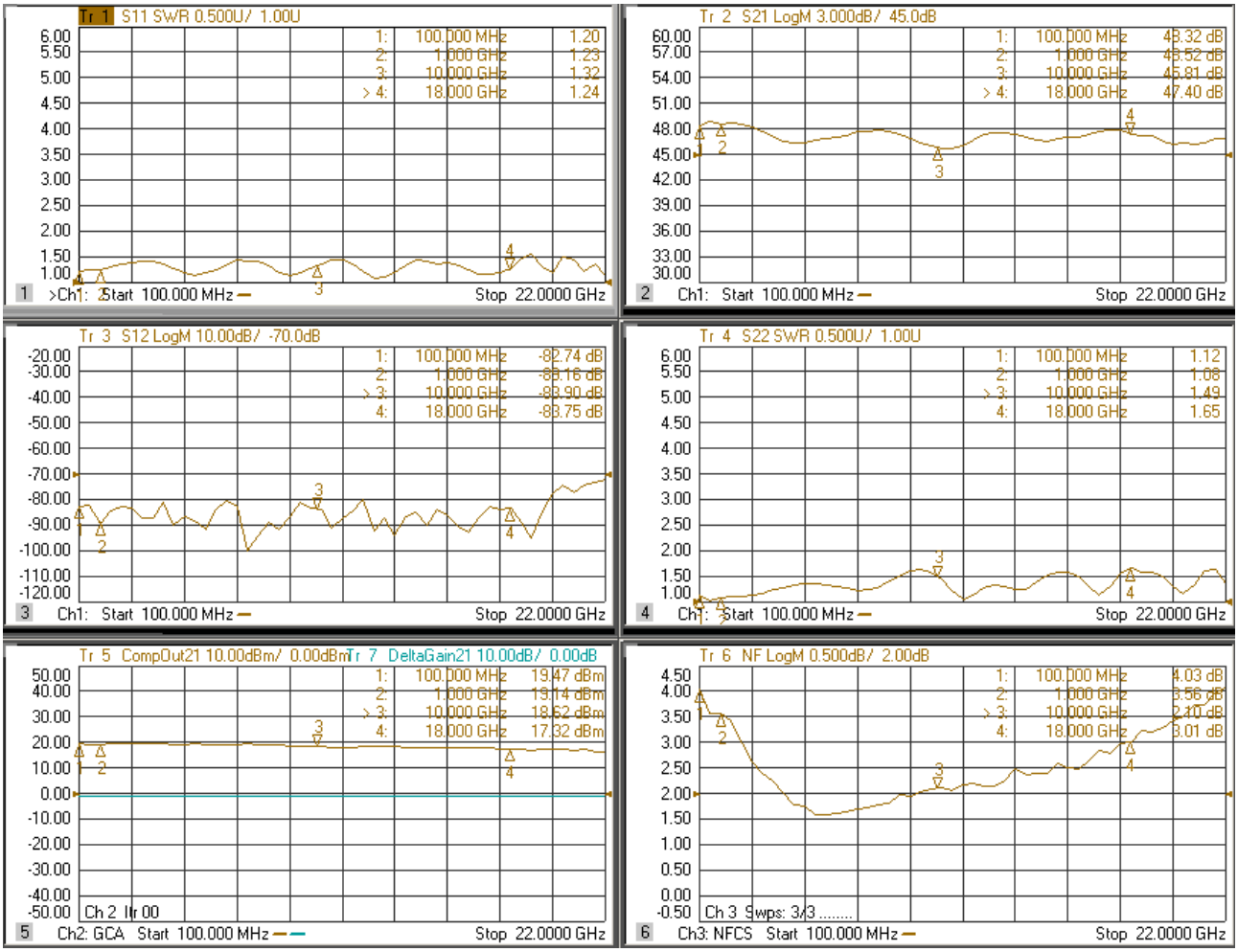
Absolute Maximum Ratings

Maximum Input Power	+10dBm	Operating Temperature	-40℃～+70℃
Channel Temperature	+150℃	Storage Temperature	-65℃～+150℃

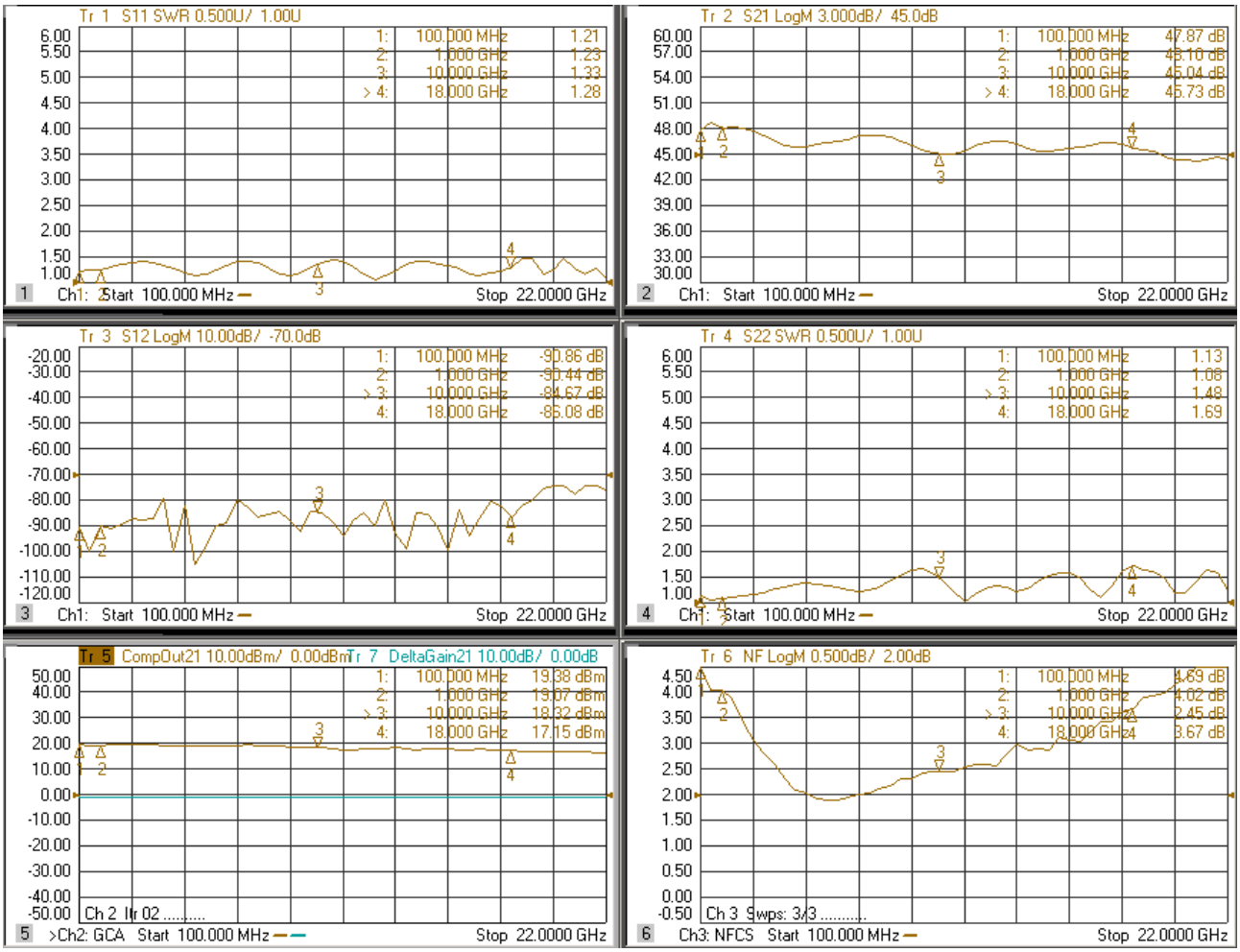
Typical Performance Curve

$+V_{DC}$=12V, I_D=230mA

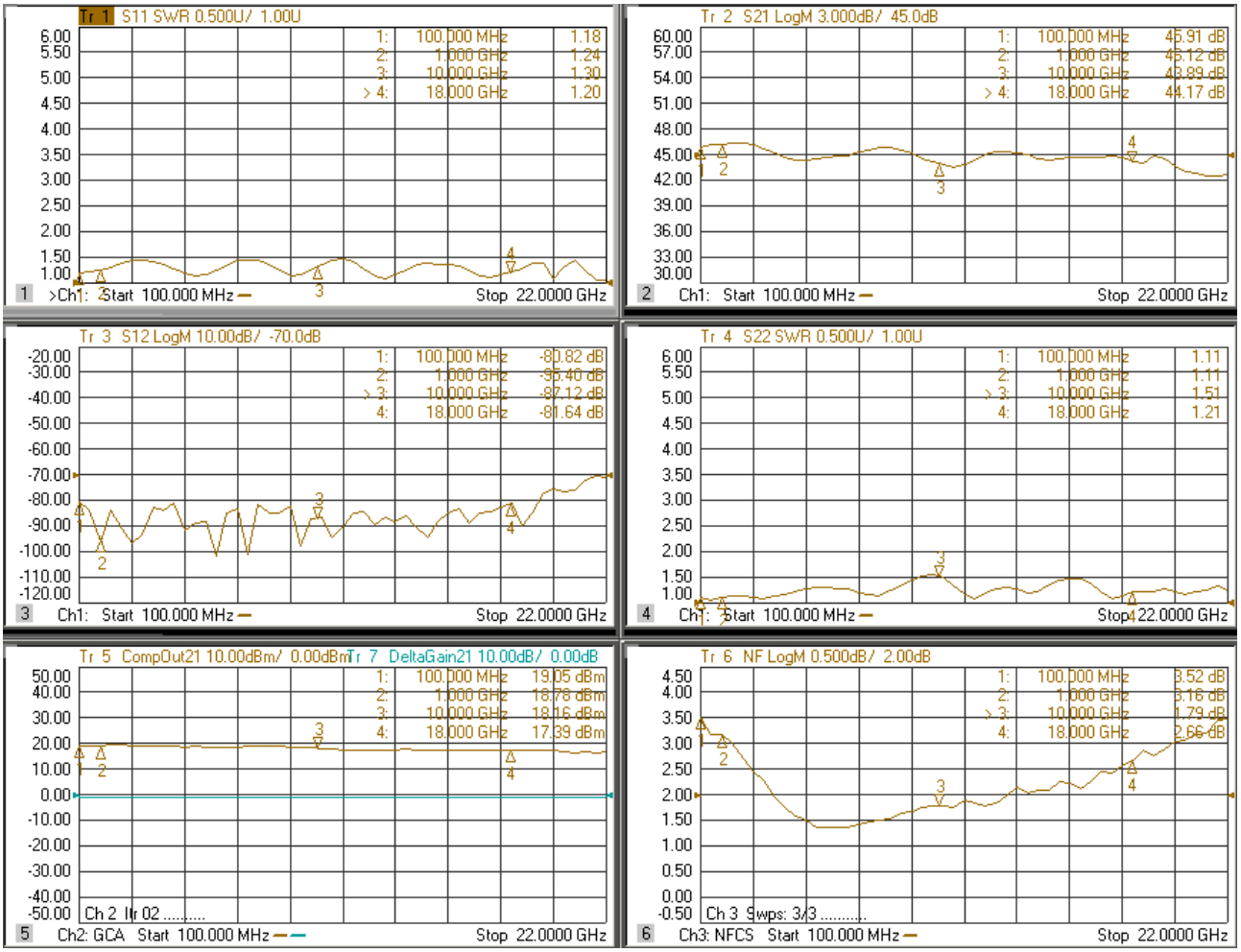
T_A=25℃



T_A=+70℃

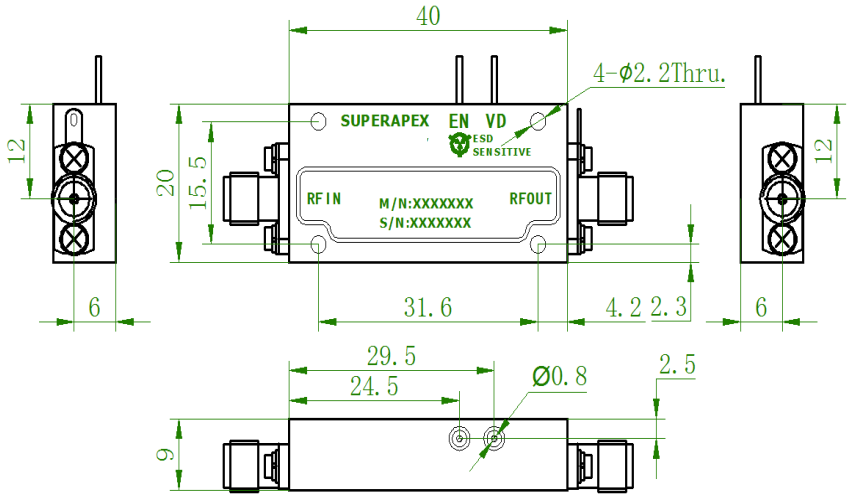

Tr 1 S11 SWR 0.500U/ 1.00U
1: 100.000 MHz 1.21
2: 1.000 GHz 1.23
3: 10.000 GHz 1.33
> 4: 18.000 GHz 1.28
Ch1: Start 100.000 MHz
Stop 22.0000 GHz
Tr 2 S21 LogM 3.000dB/ 45.0dB
1: 100.000 MHz 47.87 dB
2: 1.000 GHz 45.10 dB
3: 10.000 GHz 45.04 dB
> 4: 18.000 GHz 45.73 dB
Ch1: Start 100.000 MHz
Stop 22.0000 GHz
Tr 3 S12 LogM 10.00dB/ -70.0dB
1: 100.000 MHz -90.86 dB
2: 1.000 GHz -90.44 dB
> 3: 10.000 GHz -84.67 dB
4: 18.000 GHz -85.08 dB
Ch1: Start 100.000 MHz
Stop 22.0000 GHz
Tr 4 S22 SWR 0.500U/ 1.00U
1: 100.000 MHz 1.13
2: 1.000 GHz 1.08
> 3: 10.000 GHz 1.48
4: 18.000 GHz 1.69
Ch1: Start 100.000 MHz
Stop 22.0000 GHz
Tr 5 CompOut21 10.00dBm/ 0.00dBm
Tr 7 DeltaGain21 10.00dB/ 0.00dB
1: 100.000 MHz 19.38 dBm
2: 1.000 GHz 19.07 dBm
> 3: 10.000 GHz 18.32 dBm
4: 18.000 GHz 17.15 dBm
Ch 2 Ifr 02
>Ch2: GCA Start 100.000 MHz
Stop 22.0000 GHz
Tr 6 NF LogM 0.500dB/ 2.00dB
1: 100.000 MHz 4.69 dB
2: 1.000 GHz 4.02 dB
> 3: 10.000 GHz 2.45 dB
4: 18.000 GHz 3.67 dB
Ch 3 Swps: 3/3
Ch3: NFCS Start 100.000 MHz
Stop 22.0000 GHz

T_A=-55℃



Mechanical Outline

All dimensions are in millimeters



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