

## Features

- Frequency: 6GHz~18GHz
- Gain: 17dB
- Output P<sub>-1dB</sub>: 20dBm
- Supply Voltage: +4~+6V
- Die Size: 1.25mm×1.25mm×0.1mm

## Typical Applications

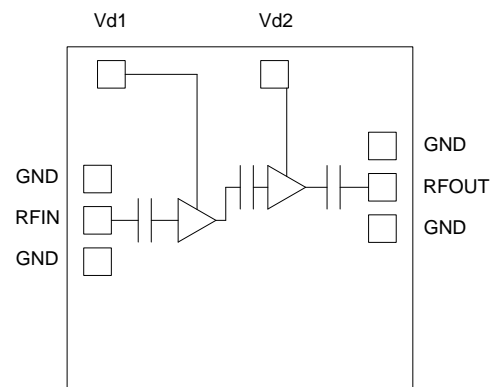
- Point-to-Point Radios
- SATCOM
- Military and Space
- Test and Measurement
- Radar

## General Description

SAC3915 is a wideband GaAs MMIC driver amplifier which operates between 6GHz~18GHz. The amplifier provides 17dB of gain, 20dBm OP<sub>-1dB</sub> power from a +6V supply voltage which make it an ideal driver amplifier for high efficiency applications.

SAC3915 offers full passivation for increased reliability and moisture protection.

## Functional Diagram



## Electrical Performance ( T<sub>A</sub>=25°C, V<sub>d1</sub>, V<sub>d2</sub>= +6V, Z<sub>0</sub>=50Ω )

Parameter	Min.	Typ.	Max.	Units
Frequency Range	6~18			GHz
Small Signal Gain	—	17	—	dB
Small Signal Gain Flatness	—	±1.5	—	dB
Reverse Isolation	—	-40	—	dB
Input Return Loss	—	-14	—	dB
Output Return Loss	—	-14	—	dB
Power-Added Efficiency	—	20	—	%
Output Power for 1 dB Compression (OP <sub>-1dB</sub> )	—	20	—	dBm
Drain Voltage(V <sub>D</sub> )	4	—	6	V
Supply Current(I <sub>D</sub> )	—	80	—	mA

## Absolute Maximum Ratings

Maximum Input Power	+17dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C
Maximum V <sub>D</sub>	+6.3V		

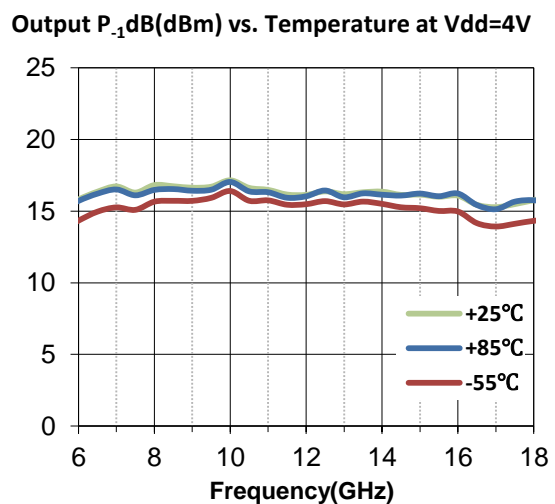
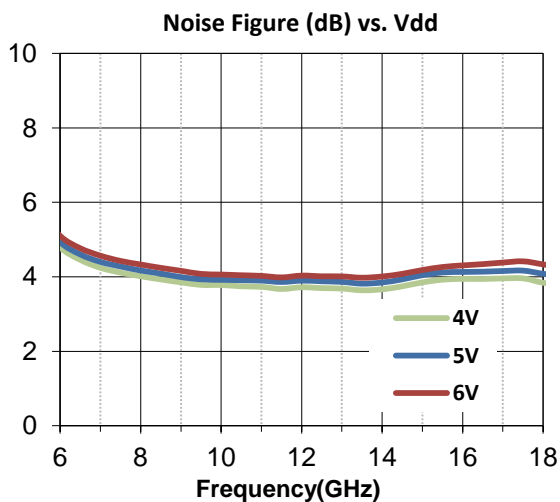
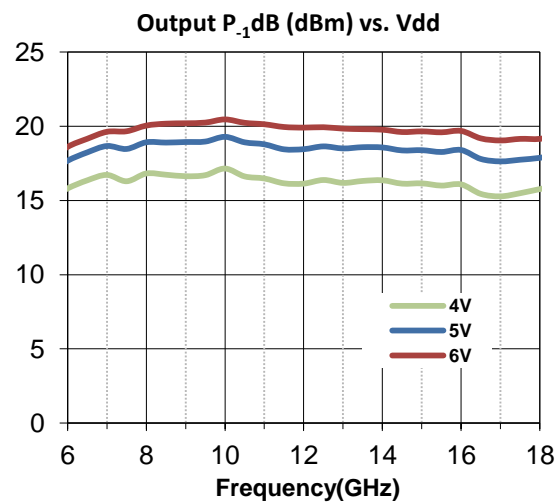
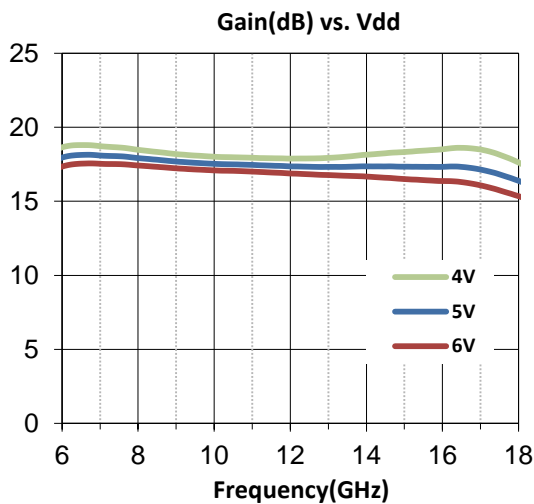
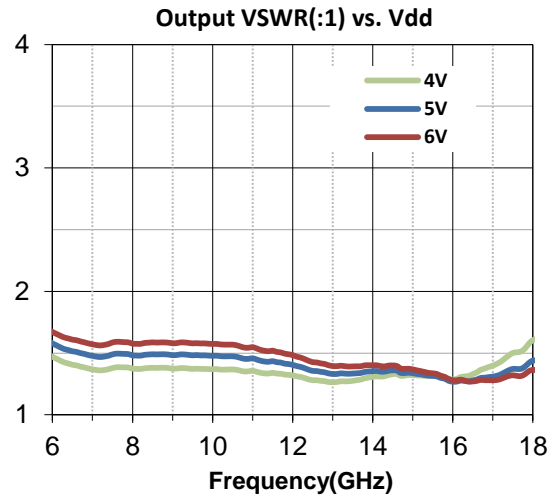
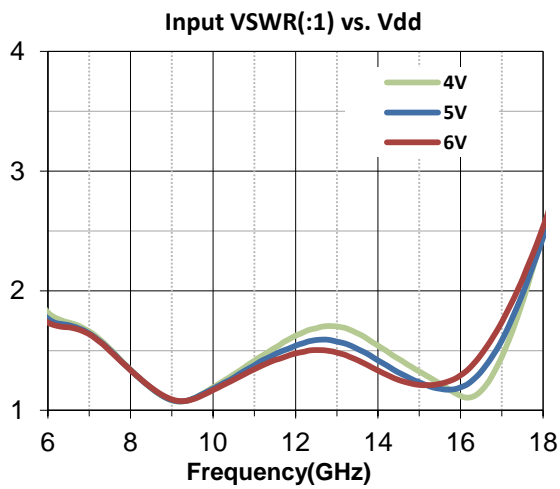
# SAC3915



GaAs pHEMT MMIC Driver Amplifier  
6GHz~18GHz

Rev 2.2

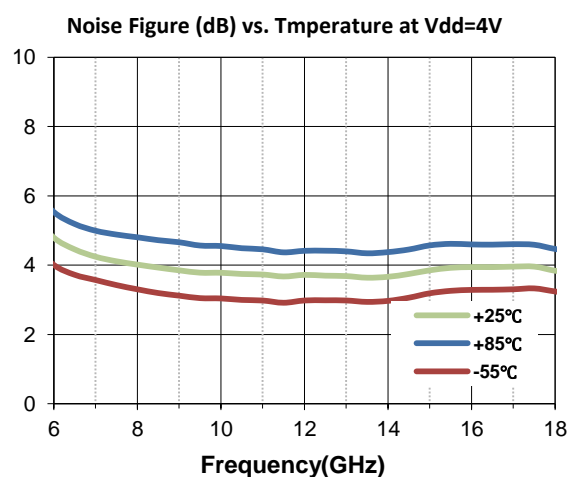
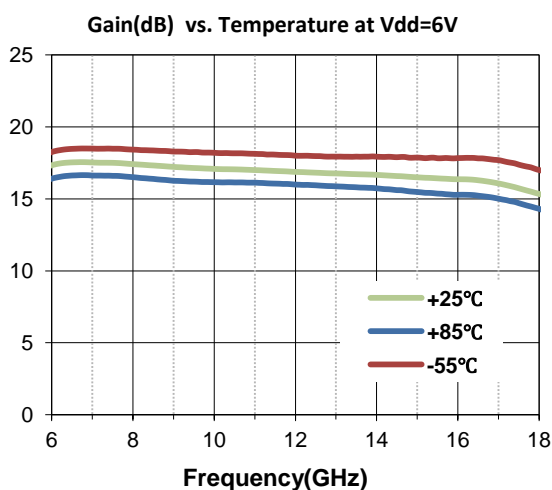
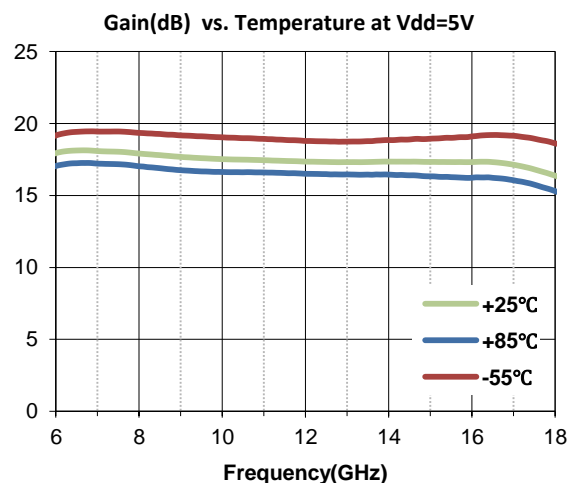
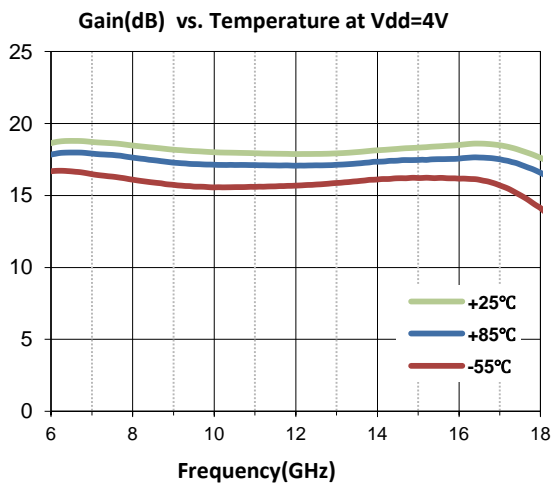
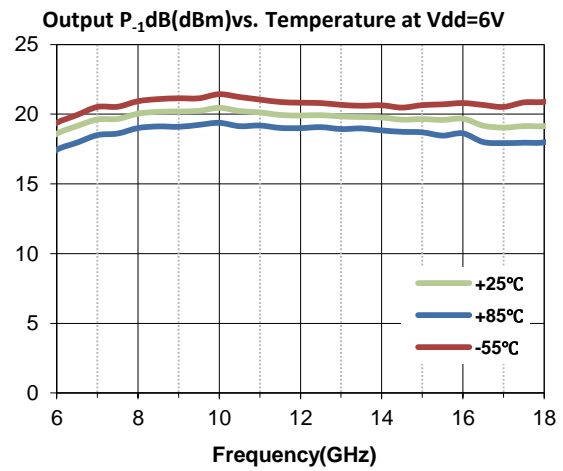
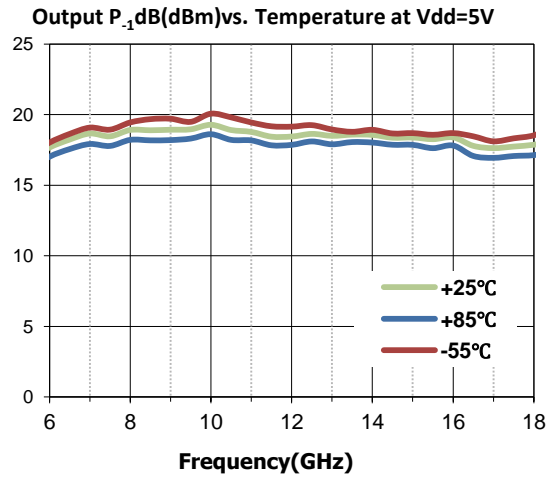
## Typical Performance Curve



### SuperApex, LLC

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

## Typical Performance Curve

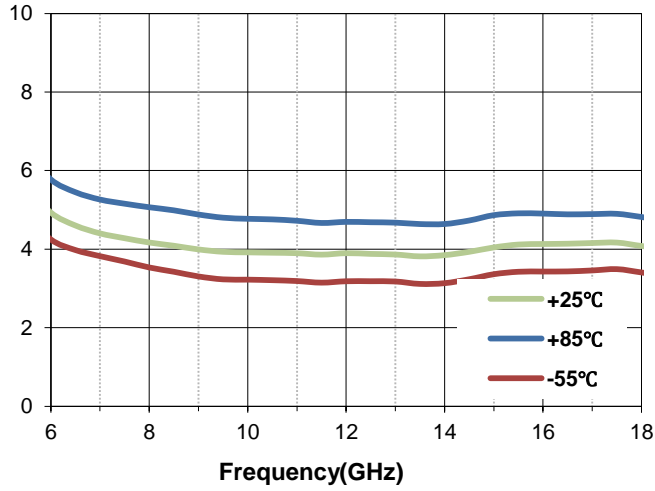


# SAC3915

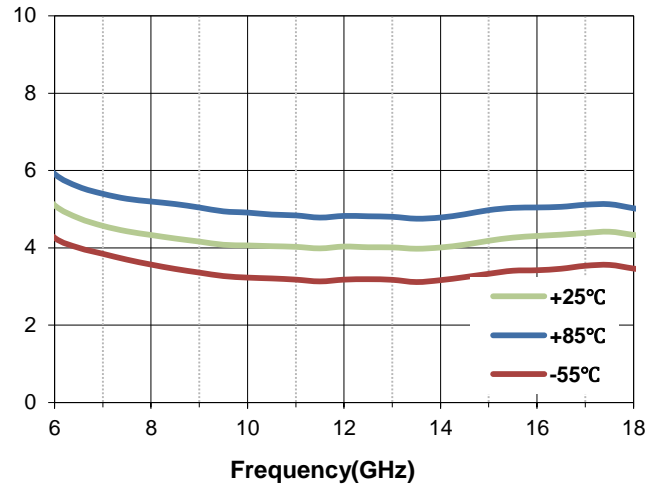
GaAs pHEMT MMIC Driver Amplifier  
6GHz~18GHz

Rev 2.2

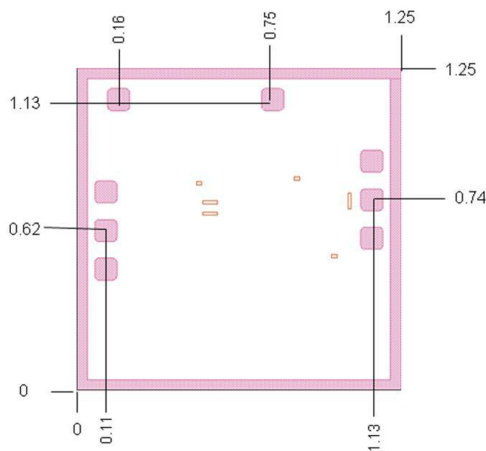
Noise Figure (dB) vs. Temperature at Vdd=5V



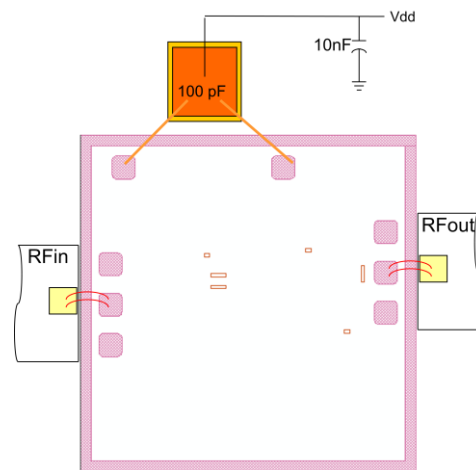
Noise Figure (dB) vs. Temperature at Vdd=6V



**Die Outline**  
(All dimensions in mm)



**Assembly Diagram**



Chip size: 1.25mm x 1.25mm x 0.1mm  
Bonding pad size: 100x100um

# SAC3915

## Notes

1. SAC3915 is biased with a single drain voltage+5V.
2. RF connections should be made as short as possible to reduce the inductive effect of the bond wire.
3. The backside of SAC3915 is RF grounded. Die attach should be accomplished with electrically and thermally conductive epoxy only.

## ESD CAUTION



**ESD(electrostatic discharge) sensitive device. Charged devices on circuit boards can discharge without detection. Damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.**