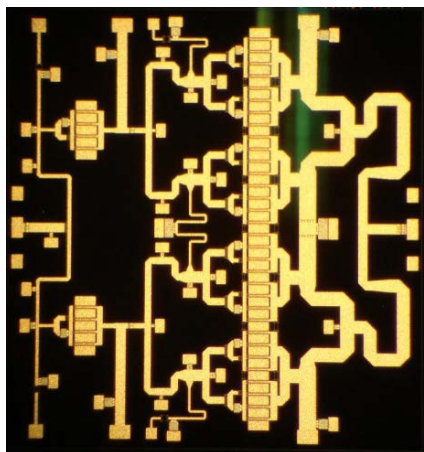


11.5-15.5 GHz GaAs MMIC Power Amplifier



Key Features

- K_u Band 4W Power Amplifier
- 13 dB Large Signal Gain
- +36 dBm Saturated Output Power
- 35% Power Added Efficiency

Applications

- Point-to-Point Radio
- Communications

Product Description

The SANDRA-SEMI SDC2026 is a two stage 11.5-15.5 GHz GaAs MMIC power amplifier has a large signal gain of 14 dB with a 36 dBm saturated output power. This MMIC uses 0.25 μ m GaAs PHEMT device model technology, and is based upon optical gate lithography to ensure high repeatability and uniformity. The chip provides a rugged part with backside via holes and gold metallization to allow either a conductive epoxy or eutectic solder die attach process. The reliability of the chip has been verified through extensive tests. The reliability of the chip has been verified through extensive tests.

Functional Block Diagram

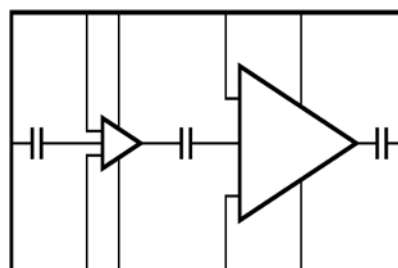


Table1: RF Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Frequency Range	Freq	12		15	GHz
Input Return Loss	S11		-5		dB
Output Return Loss	S22		-10		dB
Small Signal Gain	S21		14		dB
Saturated Output Power	P_{SAT}		36		dBm
Drain Bias Voltage	V_d		8		V
Gate Bias Voltage	V_g	-0.9	-0.8	-0.75	V
Supply Current	I_d		1.4		A

SDC2026

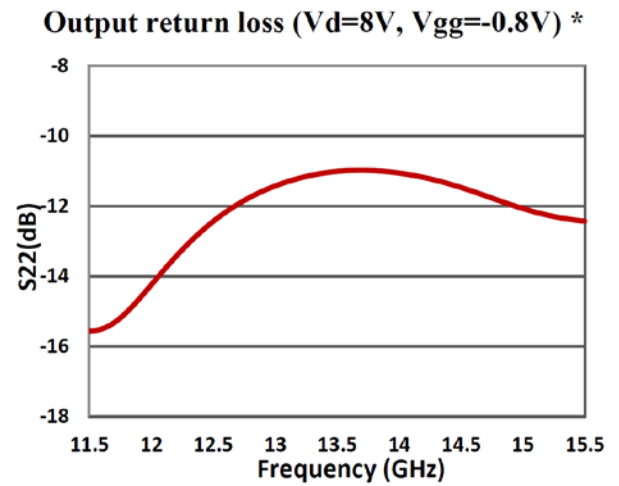
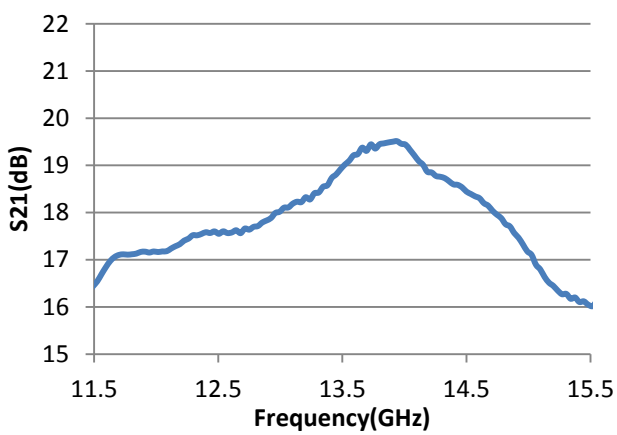
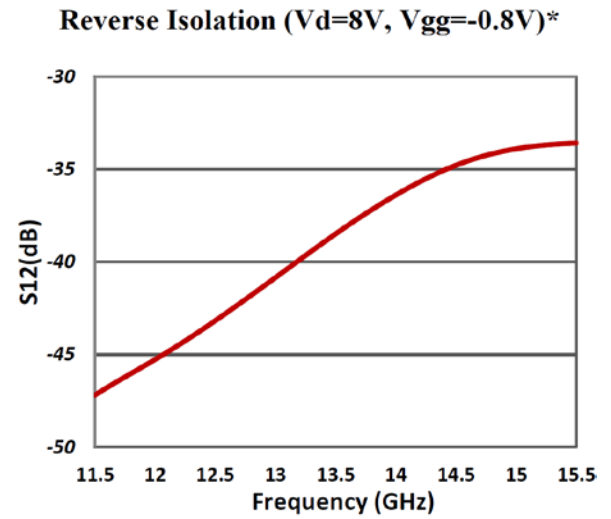
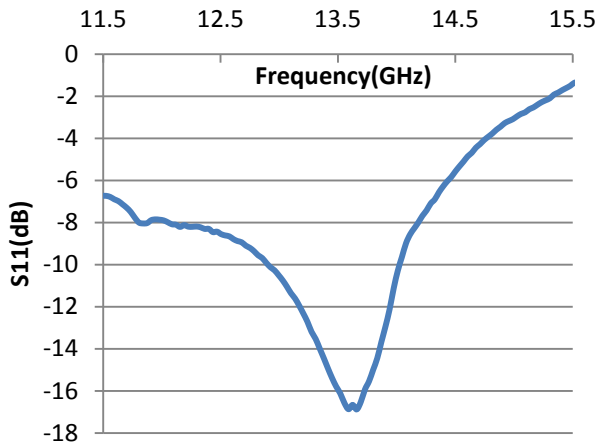
Absolute Maximum Ratings

Parameter	Value
Drain Voltage	8
Gate Voltage 1, Vg1	-0.8
Gate Voltage 2, Vg2	-0.8
Drain Current, Id	1.4
Channel Temperature, Tch	175 °C
Storage Temperature	-65 to +150 °C

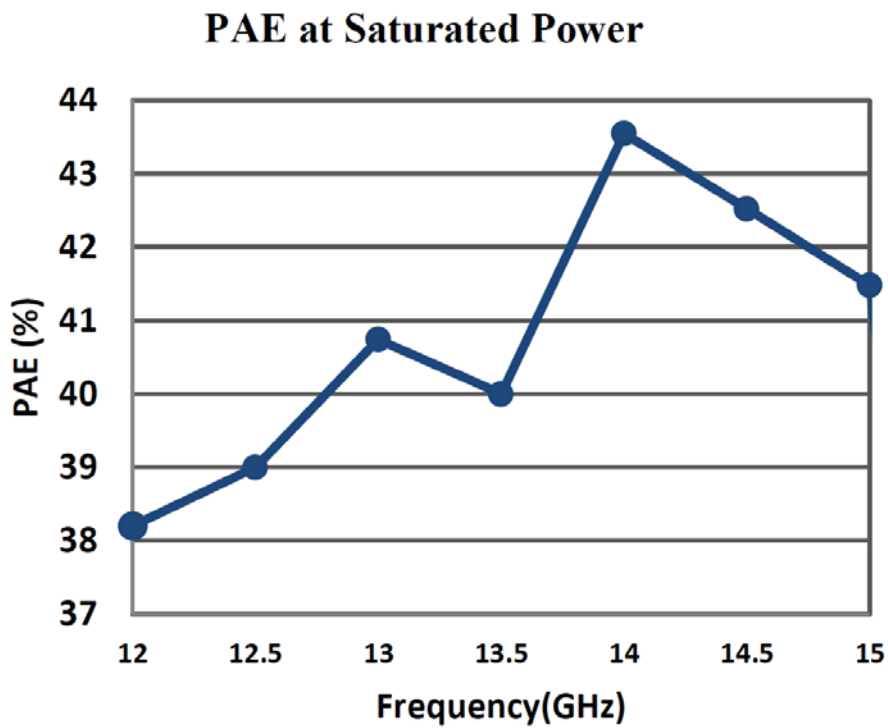
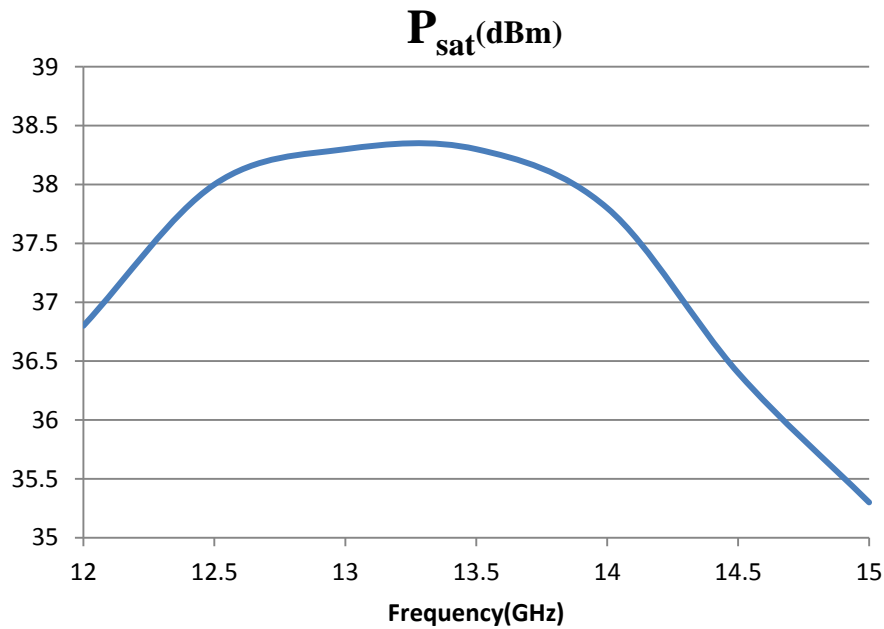
Recommended Operating Conditions

Parameter	Min	Typ	Max	Unit
Vd		8		V
Id		1.4		A
Vg1		-0.8		V
Vg2		-0.8		V

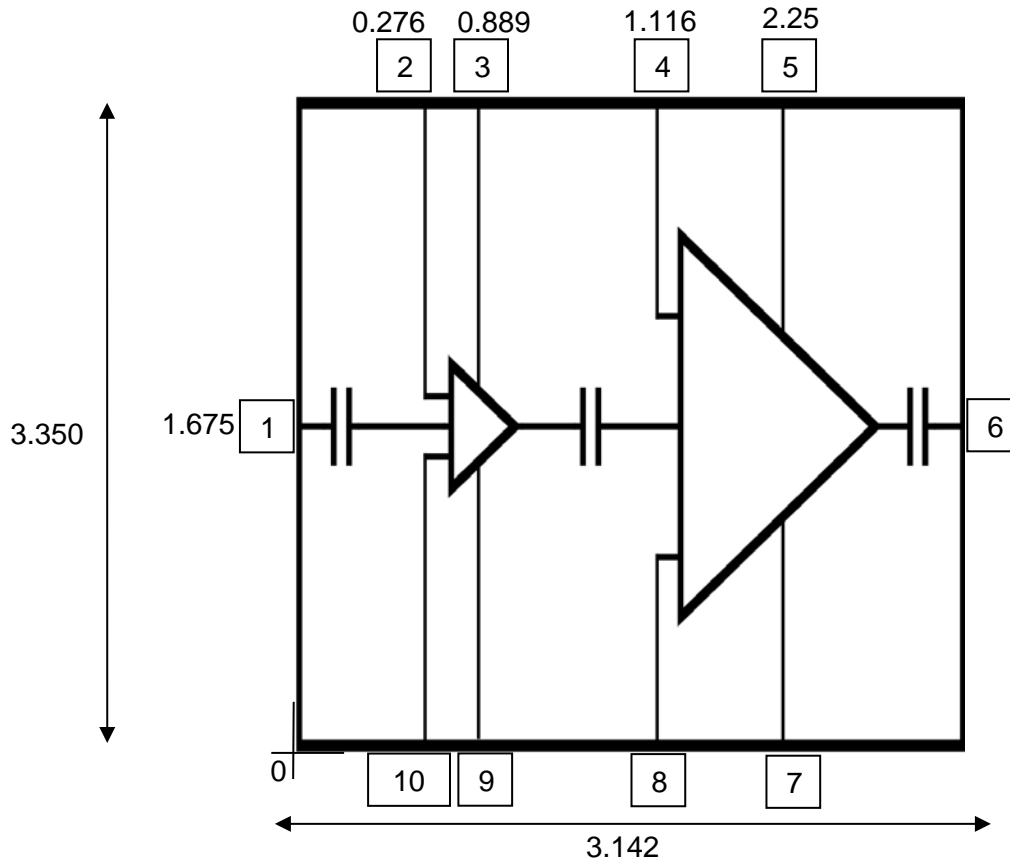
Small Signal Performance



Large Signal Performance



Mechanical Drawing



Pin Description

Symbol	Pin	Description
IN	1	RF Input
Vg1	2	Gate Voltage 1
Vd1	3	Drain Voltage 1
Vg2	4	Gate Voltage 2
Vd2	5	Drain Voltage 2
OUT	6	RF Output
Vd2	7	Drain Voltage 2
Vg2	8	Gate Voltage 2
Vd1	9	Drain Voltage 1
Vg1	10	Gate Voltage 1