Amplifier, 2 to 18 GHz

ENGAD00028

Typical Applications

- Military and Commercial SATCOM
- Electronic Warfare Circuits
- Receive/Transmit Circuits
- Telecom Infrastructure
- Test and Measurement Systems

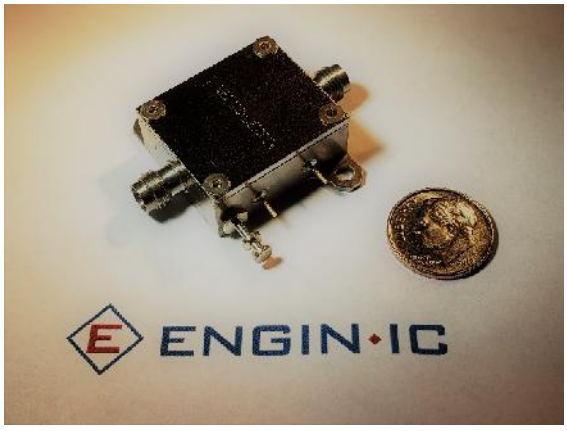
Features

- 2 to 18 GHz Band Coverage
- > 26 dB Small Signal Gain
- < 4 dB Noise Figure
- > 24 dBm Output P1dB
- Solid State GaAs MMICs
- SMA RF Input/Output Interface
- Size: 1.12” x 0.95” x 0.50”

Description

The ENGAD00028 amplifier operates across 2 to 18 GHz with small signal gain greater than 26 dB, noise figure less than 4 dB and output P1dB greater than 24 dBm. The ENGAD00028 uses SMA interfaces for the RF input and output ports. The ENGAD00028 operates with +8 V and -5 V supply voltages with a typical DC current of 0.46 mA.

Amplifier



Electrical Specifications, T = 25 °C, Vd = +8V, Vg = -5V

Parameter	Min	Typ	Max	Units
Frequency Range		2 – 18		GHz
Small Signal Gain	26	28		dB
Gain Flatness	-1.2	+/-0.8	+1.2	dB
Output P1dB	24	26		dBm
Noise Figure (2 – 3 GHz)		3.7	4	dB
Noise Figure (3 – 18 GHz)		3.0	3.5	dB
Isolation	50	70		dB
DC Current (Small Signal)		0.46	0.6	A

Recommended Operating Conditions

Parameter	Min	Typ	Max	Units
Vd	+7.5	+8.0	+8.5	V
Vg	-5.1	-5.0	-4.9	V

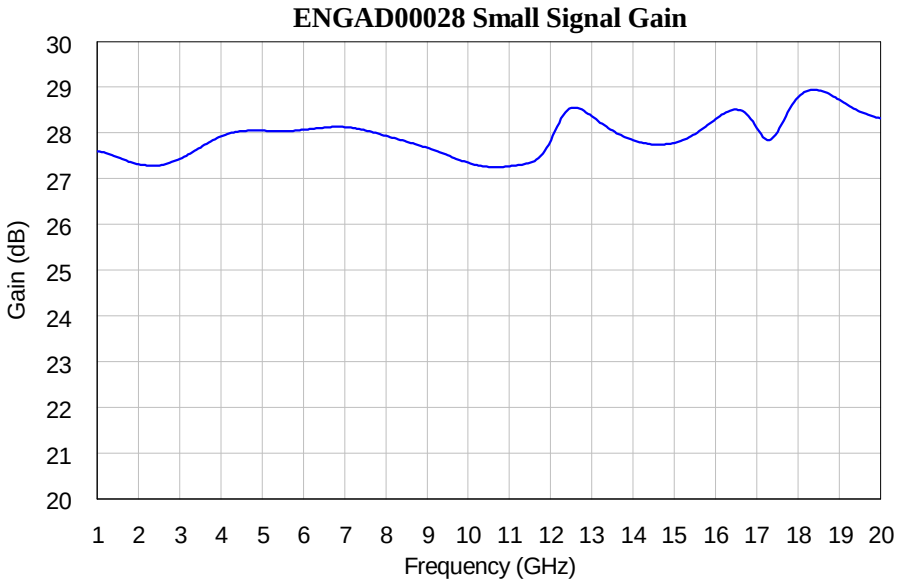
Absolute Maximum Ratings

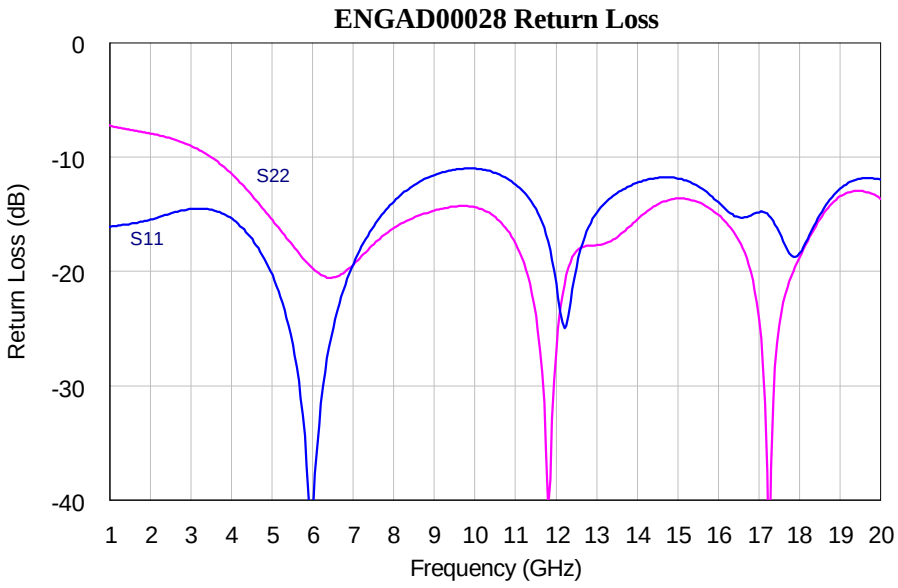
Parameter	Max level
Vin	+9V
RF Input Power	+20 dBm
Operating Temperature	+0 °C to +70 °C
Storage Temperature	-65 °C to +125 °C

Typical Performance

Small Signal Gain and Return Loss

Room temperature, Vd = +8V, Vg = -5V, Id = 460mA

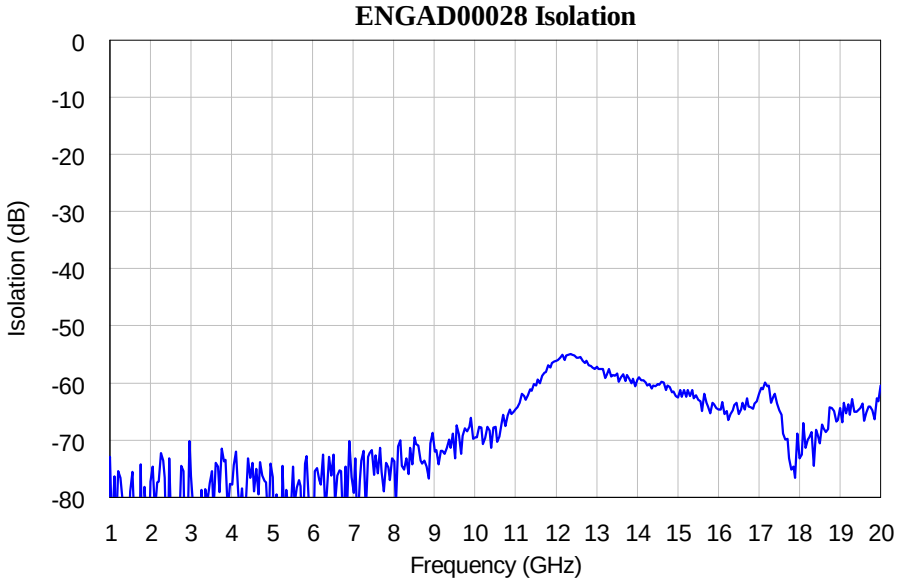


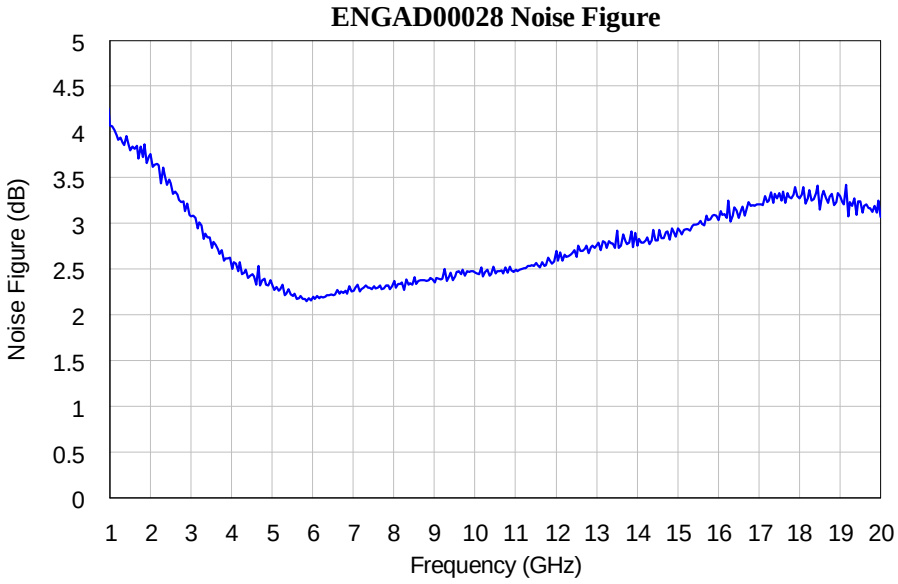


Typical Performance

Isolation and Noise Figure

Room temperature, Vd = +8V, Vg = -5V, Id = 460mA

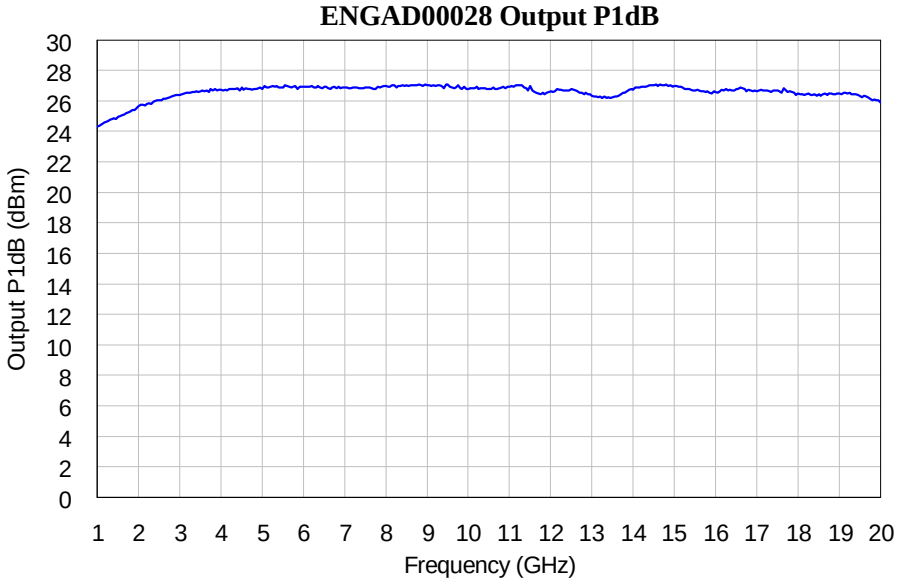


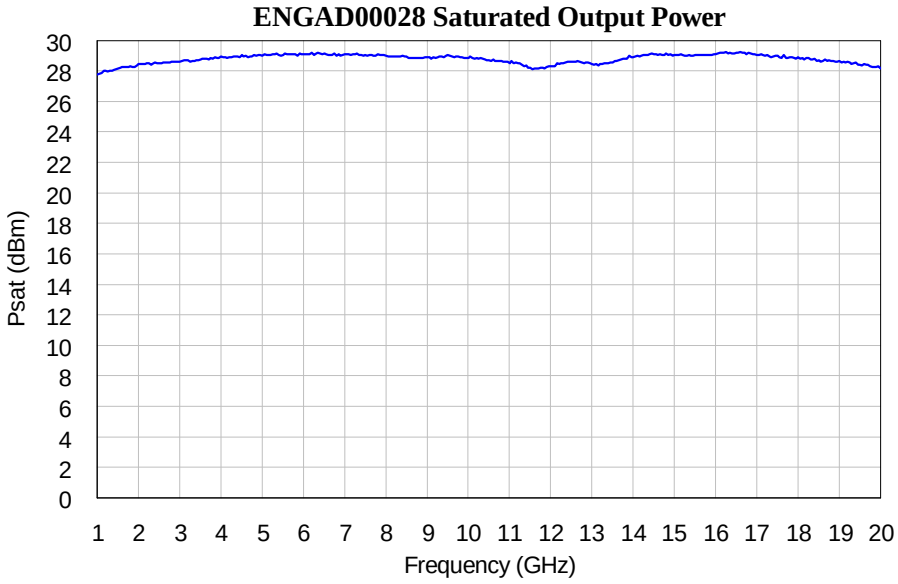


Typical Performance

Output P1dB and Saturated Output Power

Room temperature, Vd = +8V, Vg = -5V





To prevent inadvertent damage to the amplifier, the following bias procedure is recommended.

Bias Up Procedure

1. ***Set +8V power supply current limit to 0.6A***
2. ***Apply -5V to Vg***
3. ***Apply +8V to Vd***
4. ***Turn on RF signal***

Bias Down Procedure

1. ***Turn off RF signal***
2. ***Set Vd to 0 V***
3. ***Set Vg to 0 V***

Outline Drawing