16 W Solid State Power Amplifier
15 - 18 GHz

ENGAD00045
Rev. V1

Features

- 15 to 18 GHz Band Coverage
- Saturated Output Power: 16 W
- Nominal PAE @ P_{SAT}: 17%
- CW or Pulsed Operation
- On Time: 70 ns / Off Time: 150 ns
- SMA Input/Output Interface
- Optional Air Cooling Plate
- Size: 2.90” x 2.14” x 0.45”
- RoHS* Compliant

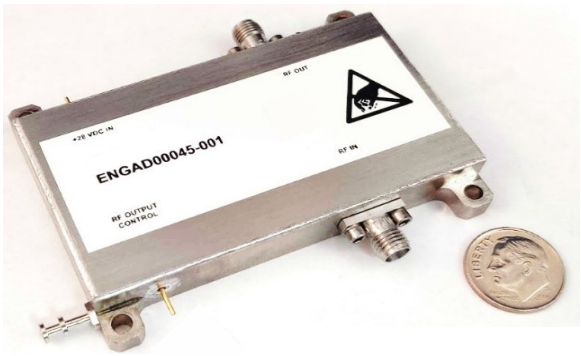
Applications

- Military & Commercial SATCOM
- Electronic Warfare Circuits
- Radar Circuits
- Transmit Circuits
- Telecom Infrastructure
- Test & Measurement Systems

Description

The ENGAD00045 is a Solid State Power Amplifier (SSPA) operating across 15 to 18 GHz with a nominal saturated output power (Psat) of 16 W with a nominal 17% power added efficiency (PAE). The ENGAD00045 uses SMA interfaces for the RF input and output ports. A optional cooling fan and heat sink attachment provides controlled temperature of the SSPA at ambient temperature.

Functional Block Diagram



Ordering Information

Part Number	Package
ENGAD00045	bulk

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Electrical Specifications: Freq. = 15 - 18 GHz, T_A = +25°C, V = 28 V, CW or Pulsed

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Saturated Power	—	W	—	16	—
PAE @ P_{SAT}	average	%	—	17	—
Small Signal Gain	—	dB	—	37	—
Input Return Loss	—	dB	—	15	—
Output Return Loss	—	dB	—	12	—
DC Current	Small Signal P_{SAT}	A	—	1.5 2.8	—
RF Control On Time	50% Control / 90% RF)	ns	—	70	—
RF Control Off Time	50% Control / 10% RF)	ns	—	150	—

Recommended Operating Conditions

Parameter	Units	Min.	Typ.	Max.
Input Voltage	V	—	28	—
RF Input Power (for 16 W Output Power)	dBm	—	12	—
RF Control Off State	V	—	—	0.8
RF Control On State	V	2	—	—
Operating Temperature	°C	10	25	45

Absolute Maximum Ratings[1,2]

Parameter	Absolute Maximum
Input Voltage	30 V
RF Input Power	17 dBm
RF Control	-0.5°C to +7.0°C
Storage Temperature	-65°C to +125°C

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Outline Drawing (w/o Cold Plate)