



Advanced Product Specifications October 2003 (1 of 2)

12.70 to 13.50 GHz 1.5 Watt Power Amplifier

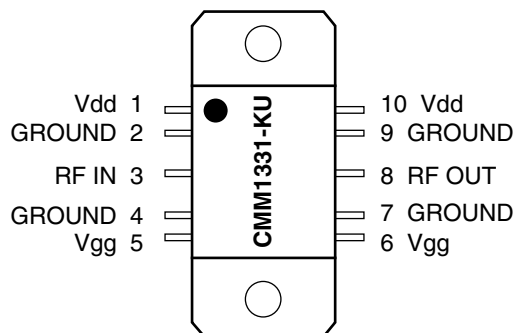
Features

- ❑ 32.5 dBm (Typ.) Saturated Output Power
- ❑ 32.0 dB (Typ.) Linear Gain
- ❑ Fully Matched
- ❑ Unconditionally Stable
- ❑ Copper/Molybdenum Flange Package for Optimum Thermal Dissipation

Applications

- ❑ Ku-Band VSAT Transmit Subsystems

Pin Functional Diagram



Description

The CMM1331-KU is a four-stage pHEMT GaAs MMIC power amplifier that is ideally suited for transmit subsystems designed for Ku-Band VSAT applications. The CMM1331-KU provides 32.0 dB linear gain and delivers 1.5 watts of output power at saturation operating from 12.70 to 13.50 GHz frequency.

The unconditional stability and internal matching provides for reduction of external components making this product a simple and low-cost solution. The package is designed with a base material of gold-plated copper/molybdenum composite that offers excellent thermal properties and minimum mechanical stress.

Electrical Characteristics (T = +25°C, Vd = 7V, Idq = 770mA)

Parameter	Condition	Min	Typ	Max	Units
Frequency Range		12.70		13.50	GHz
Saturated Output Power	Pin = 3.0 dBm	32.0	32.5		dBm
Saturated Output Power Variation	Over operating frequency		0.3	0.6	dBm
Linear Gain		29.0	32.0	35.0	dB
Linear Gain Variation	Over operating frequency		2.5	4.5	dB
Input Reflection Coefficient			-10.0		dB
Output Reflection Coefficient			-7.0		dB
Gate Supply Voltage	Idq = 770 mA	-1.1	-0.9	-0.7	Volts
Drain Current	At Saturation		940	1000	mA
Power Added Efficiency		23.0	27.0		%
Thermal Resistance	Channel to Backside				°C/W

Electrical Characteristics (T = -40°C to +70°C, Vd = 7V, Idq = 770mA)

Parameter	Condition	Min	Typ	Max	Units
Saturated Power Output	Variation from room temperature value	-0.5			dBm
Linear Gain Variation	Variation from room temperature value	-2.5		3.5	dB
Stability		Unconditionally Stable			—

Maximum Ratings (TA = -40°C to +70°C) Operation outside any of these limits can cause permanent damage.

Parameter	Rating	Units	Parameter	Rating	Units
Drain Voltage (+V _{dd})	8.5	Volts	RF Input Power (P _{in})	7.0	dBm
Gate Voltage (V _{gg})	-3.0	Volts	Storage Temperature	-50 to +150	°C
Bias Current (I _{dq})	1000	mA	Channel Temperature	175	°C
Gate Current (I _g)	5	mA	Dissipated Power (P _{dis})	7.3	Watts

