

TM5030

2 - 28 GHz Low Noise Amplifier



Product Features

Low Noise Figure: 2.5 dB
 Self-biased Low DC Supply: +5 V @ 60 mA
 No external bias-T required
 Gain: 14.5 dB
 P1dB: 14 dBm
 50 Ohm Matched Input/Output
 Die size: 2.97 x 1.6 x 0.1 mm

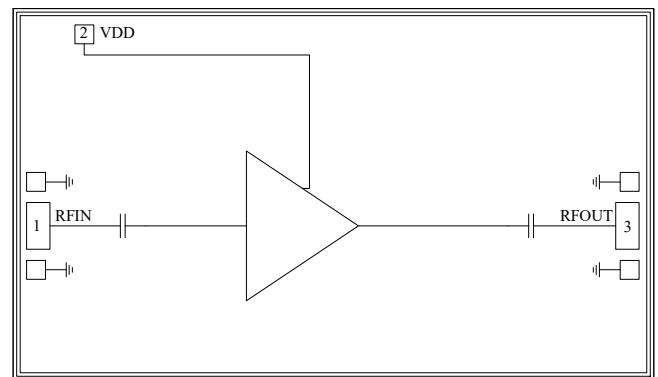
Applications

- Test Instrumentation
- Microwave Radio
- Driver Amplifier
- Fiber Optics
- Compatible with Both Epoxy and Eutectic Die Attachment

General Description

The TM5030 is a GaAs MMIC low noise distributed amplifier which operates from 2 to 28 GHz. It is self-biased and only requires a single supply voltage for VDD. The TM5030 is a 50 ohm matched design with integrated RF choke, which eliminates the need for RF port matching and external bias-T. The die is 4 mil thick and the backside is plated for simultaneous RF and DC ground.

Functional Diagram



Electrical Specifications, VDD = 5.0 V, IDD = 65 mA, TA = 25 °C

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		2 - 16			16 - 28		GHz
Gain		14			14.5		dB
Input Return Loss		-15			-15		dB
Output Return Loss		-15			-15		dB
Output P1dB		15			13		dBm
Output Third Order Intercept (OIP 3)		26			24		dBm
Noise Figure (NF)		2.5			2.5		dB
Supply Current		60			60		mA

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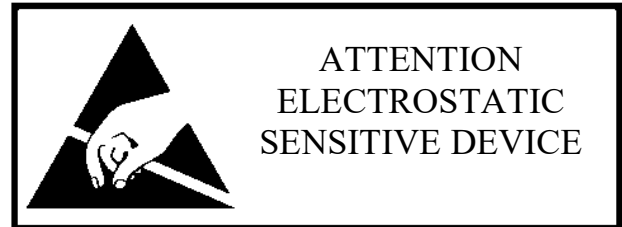


Absolute Maximum Ratings

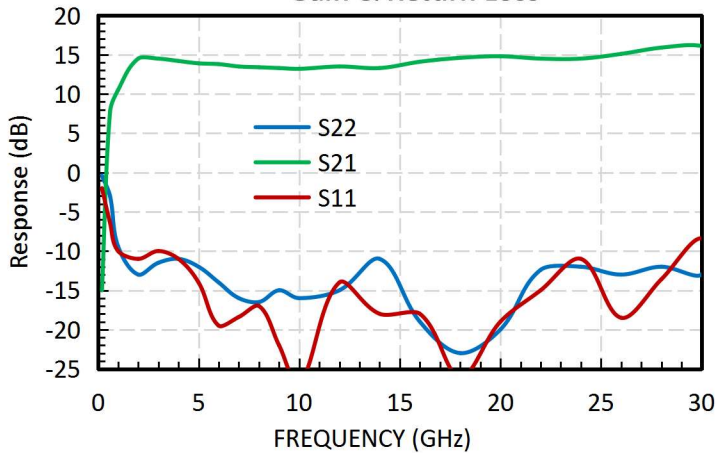
Parameter	Rating
Storage Temperature	-65 to 150 °C
Operating Temperature	-55 to 85 °C
Drain Voltage	+9 V
Channel Temperature	175 °C
Thermal Resistance (Channel to die bottom)	40 °C/W

Recommended Operating Conditions

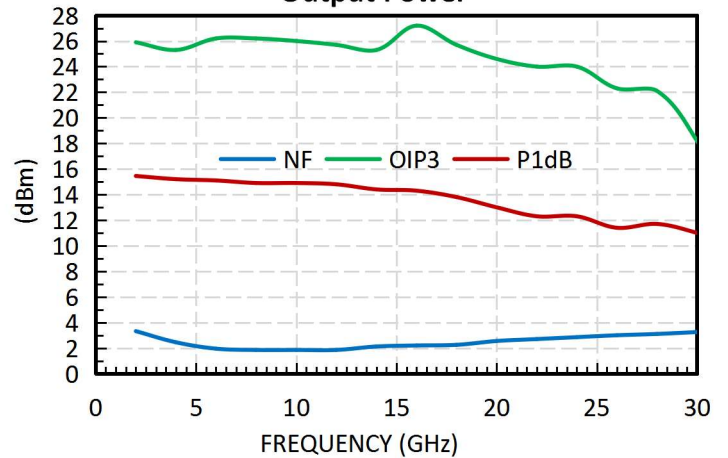
Parameter	Min	Typ	Max	Units
VDD		5		V
IDD		60		mA



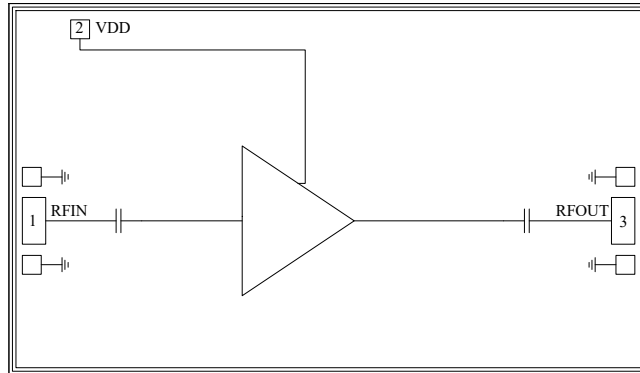
Gain & Return Loss

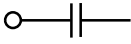
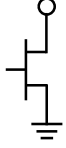
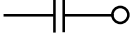


Output Power

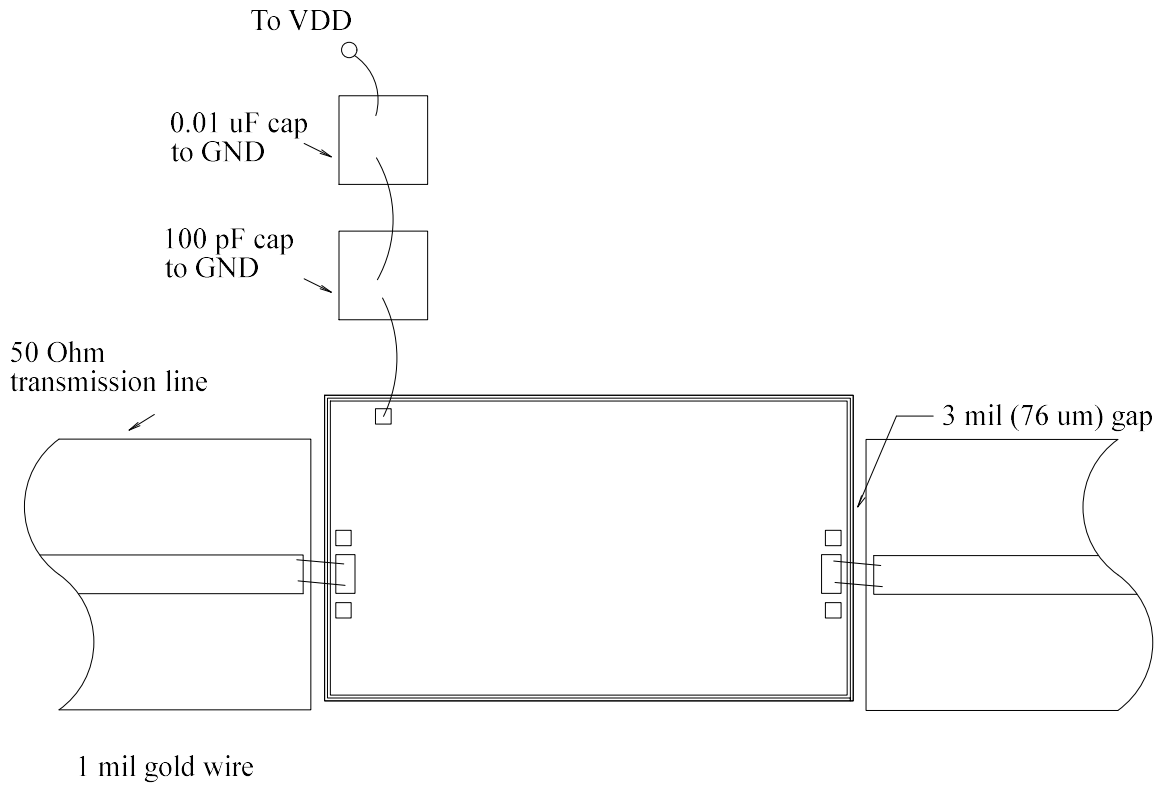


Pin Description



Pad	Function	Description	Interface Schematic
1	RFIN	50 Ohm matched and DC blocked input	
2	VDD	Power supply voltage for the amplifier. External bypass capacitors are required	
3	RFOUT	50 Ohm matched and DC blocked output	

Assembly Diagram



Application Circuit

