

TM5052

2 - 52 GHz Medium Power Amplifier



Product Features

Ultra Wide Bandwidth: 2 - 52 GHz
Self-biased. Only need a single DC supply
Low DC Supply: +10 V @ 110 mA
Input/Output pads aligned for a straight signal flow
Gain: 12 dB
P1dB: 20 dBm
50 Ohm Matched Input/Output
Die size: 2.94 x 1.6 x 0.1 mm

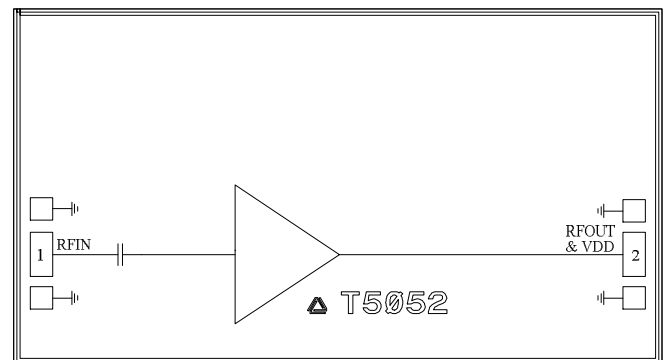
General Description

The TM5052 is a GaAs MMIC distributed amplifier which operates from 2 to 52 GHz. It is self-biased and only requires a single supply voltage for VDD. The TM5052 is a 50 ohm matched design, which eliminates the need for RF port matching. The die is 4 mil thick and the backside is plated for simultaneous RF and DC ground.

Applications

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

Functional Diagram



Electrical Specifications, VDD = 10 V, IDD = 110 mA, T_A = 25 °C

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		2 - 36			36 - 52		GHz
Gain		11.5			12.5		dB
Input Return Loss		-15			-15		dB
Output Return Loss		-15			-15		dB
Output P1dB		20.5			17		dBm
Noise Figure (NF)		3			7		dB
Supply Current		110			110		mA

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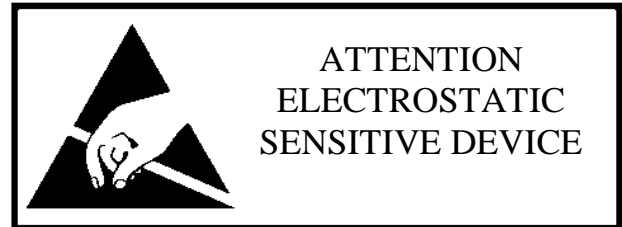


Absolute Maximum Ratings

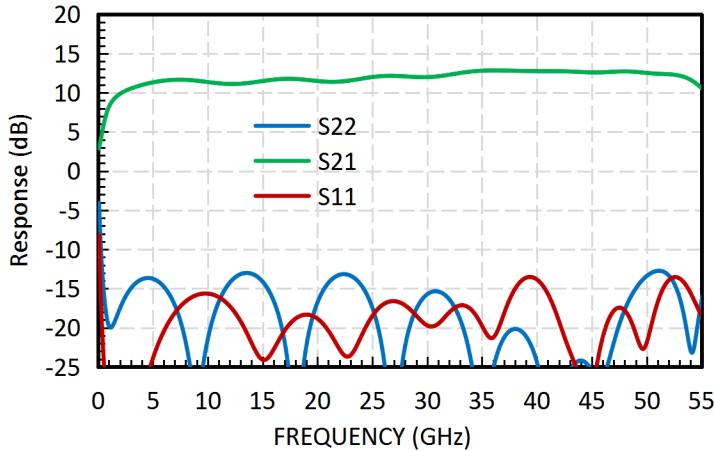
Parameter	Rating
Storage Temperature	-65 to 150 °C
Operating Temperature	-55 to 85 °C
Drain Voltage	+12 V
Channel Temperature	175 °C
Thermal Resistance (Channel to die bottom)	40 °C/W

Recommended Operating Conditions

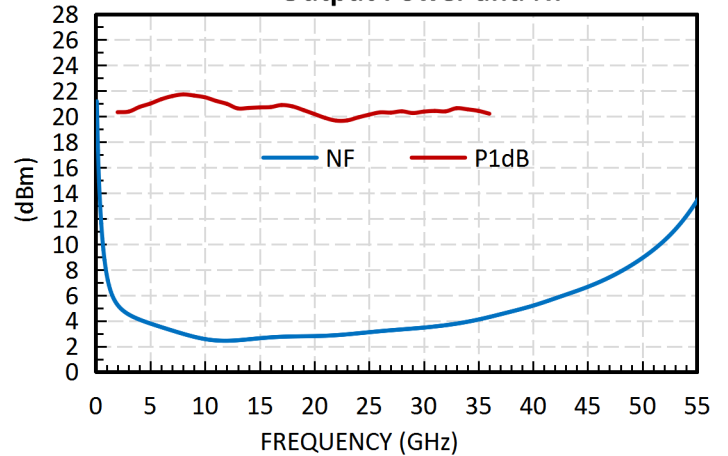
Parameter	Min	Typ	Max	Units
VDD		10		V
IDD		110		mA



Gain & Return Loss



Output Power and NF

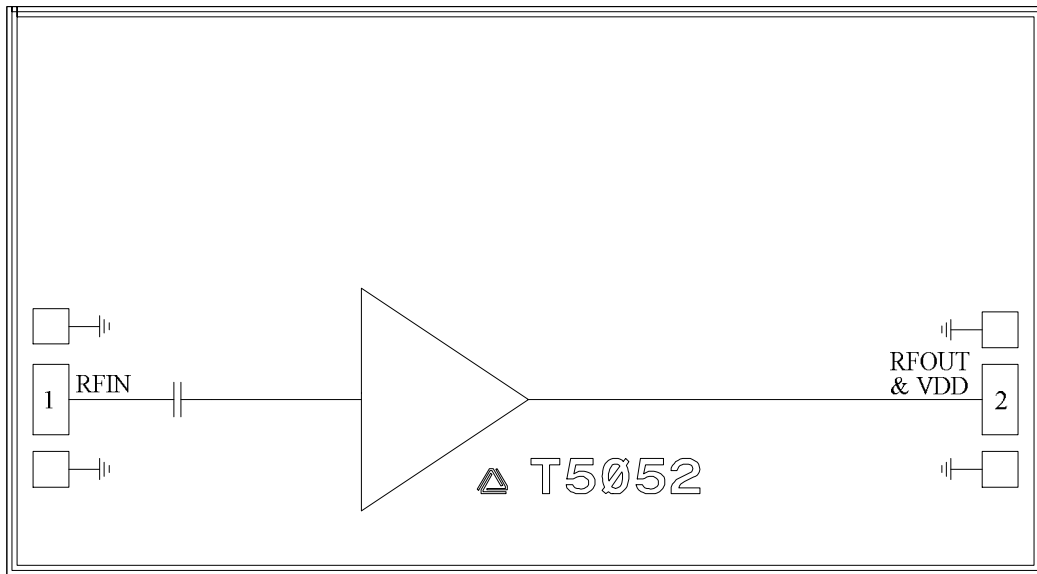


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Pin Description



Pad	Function	Description	Interface Schematic
1	RFIN	50 Ohm matched and DC blocked input	
2	RFOUT & VDD	50 Ohm matched output and supply voltage. External bias-T required per application circuit.	

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Assembly Diagram



Application Circuit

