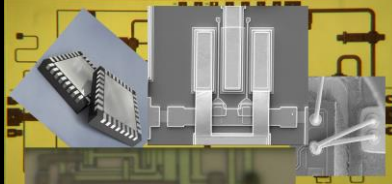


TMC254D

24-30 GHz

Power Amplifier



mmTRON
Unleashing the
mmWave Frontier

Product Features

- RF frequency: 24 to 30 GHz
- Linear Gain: 24 dB
- P_{sat} : 8 W
- PAE: 30%
- Die Size: X=3.0 mm, Y=3.0 mm, Z=0.1mm
- Package Size: 5x5 or 6x6
- DC Power: 23 VDC, 588 mA

Applications

- mmWave 5G
- Point-to-Point Radios and VSATs
- Fiber Optics
- Military, EW and Space

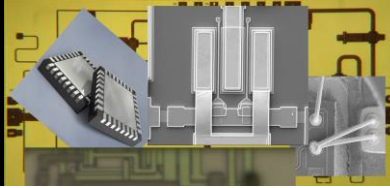
Product Description

The TMC254D GaN Power Amplifier is a high linearity device, designed for use in mmWave 5G, Radios, Military, EW and Space applications. The TMC254D provides 8 W of saturated power from 24 to 30 GHz with 30% PAE. The TMC254D is matched to 50Ω , eliminating the need for RF port matching. Both bond pad and backside metallization are Au-based that is compatible with ribbon and wedge bonding and high conductivity epoxy and eutectic die attach methods. The packaged version is available as TMC254 in a 5x5 or a 6x6 Air-Cavity QFN. TMC254D can be biased from 18V to 28V to adjust output power levels in the 5W to 12W range while maintaining excellent PAE and NPR. TMC254 normal operating temperature is -55 C to +105 C (with max of 130 C) allowing 1E6 hrs of MTBF.

Electrical Performance : Vdd = 23 V, Vgg = -3.8 V, TA = 25 °C, F = 27 GHz

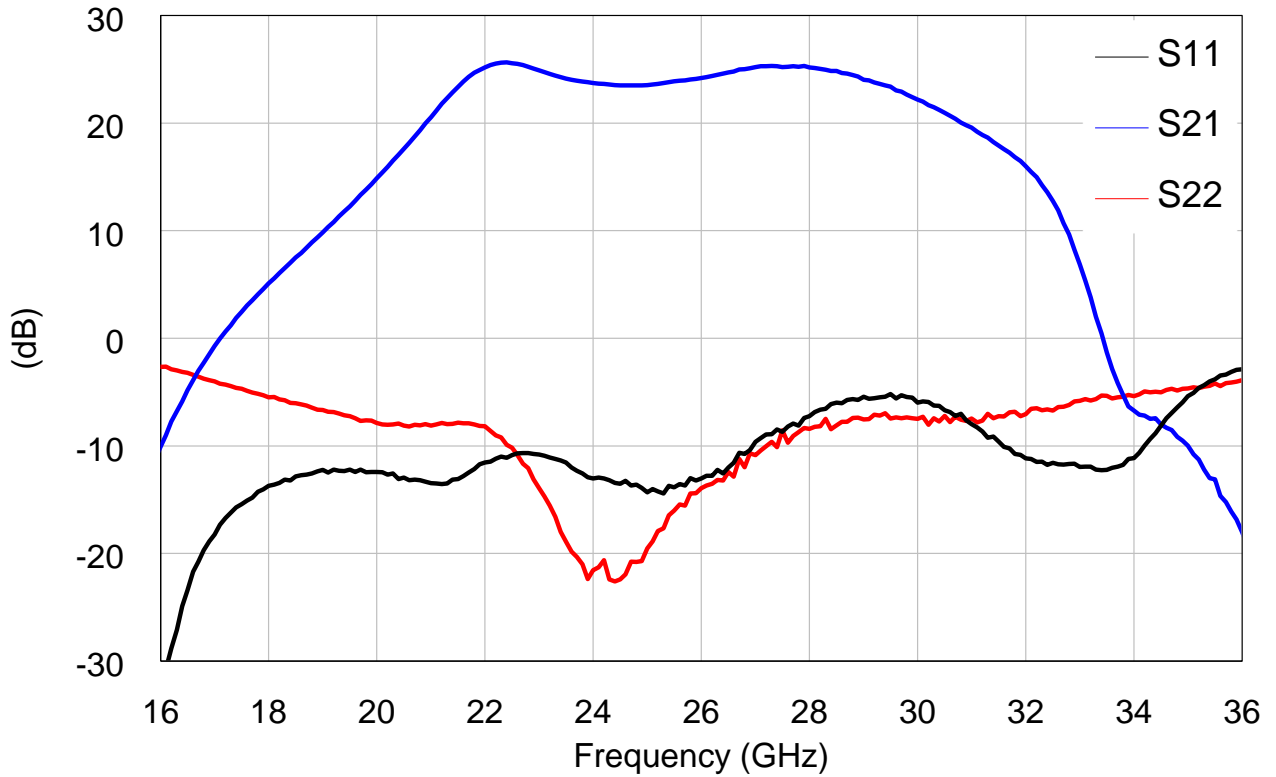
	Min	Typ	Max	Units
Frequency	24		30	GHz
Gain		24		dB
P1dB		38		dBm
Psat		39		dBm
PAE @ Psat		30		%
OIP3		44		dBm
Bias Voltage		23		V
Bias Current		588		mA

TMC254D 24-30 GHz Power Amplifier

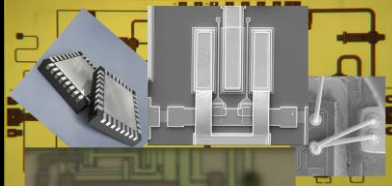


mmTRON
Unleashing the
mmWave Frontier

TMC254 Measured On Wafer S Parameters



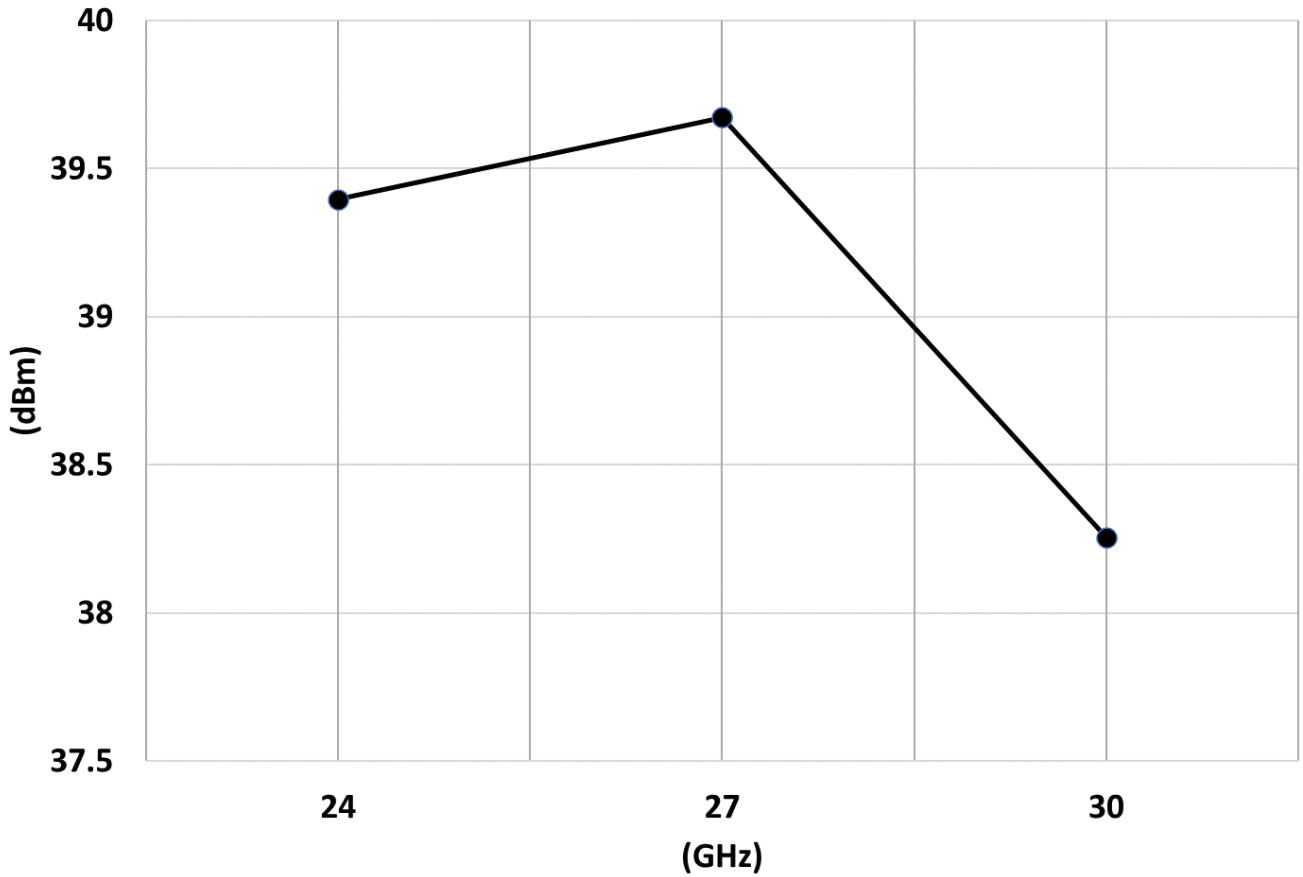
TMC254D 24-30 GHz Power Amplifier



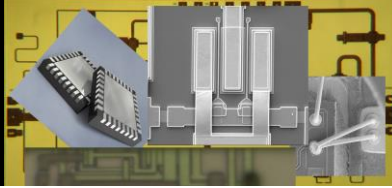
mmTRON

Unleashing the
mmWave Frontier

TMC254 Measured On Wafer Power vs. Frequency, Pin = 18dBm

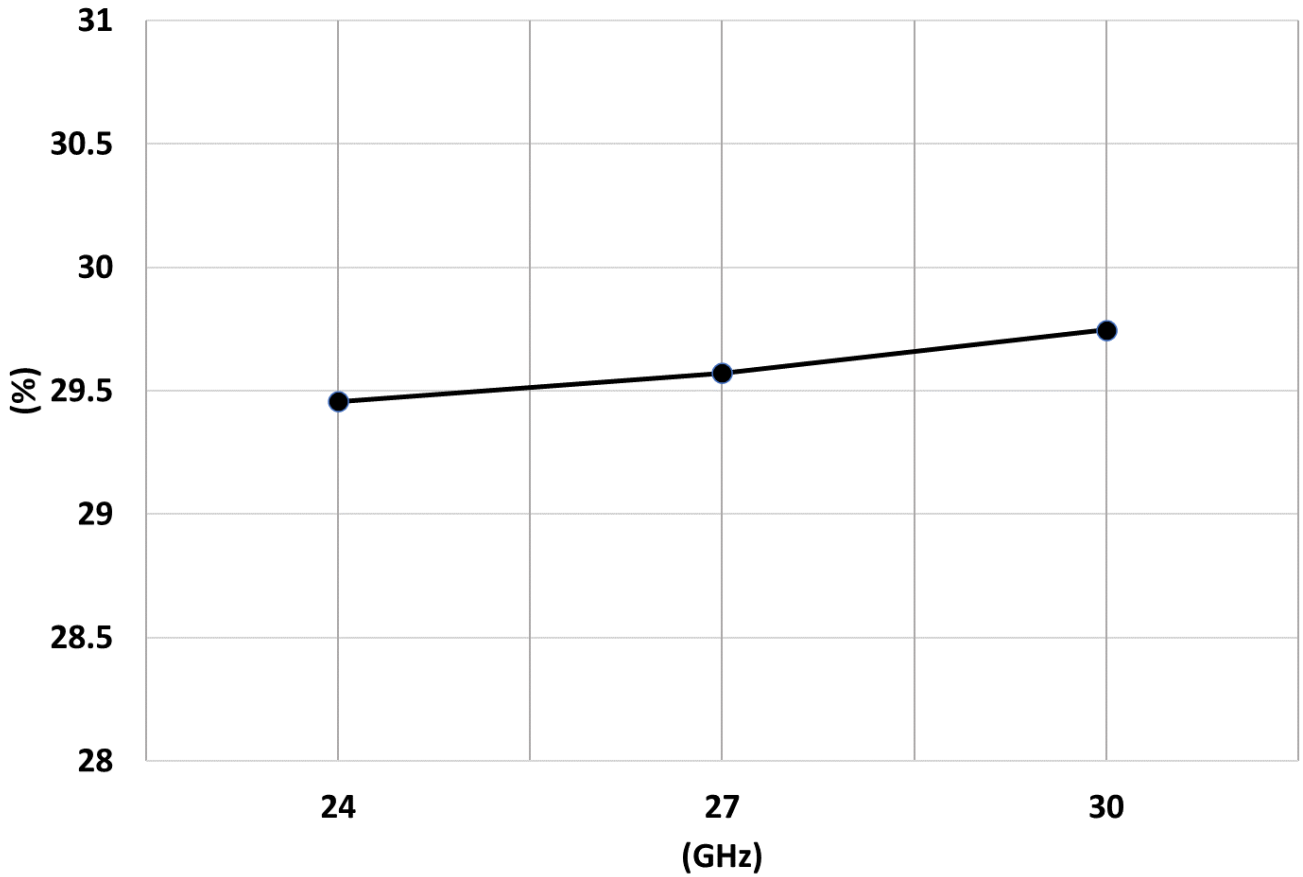


TMC254D 24-30 GHz Power Amplifier

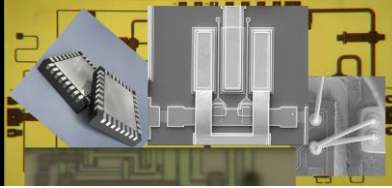


mmTRON
Unleashing the
mmWave Frontier

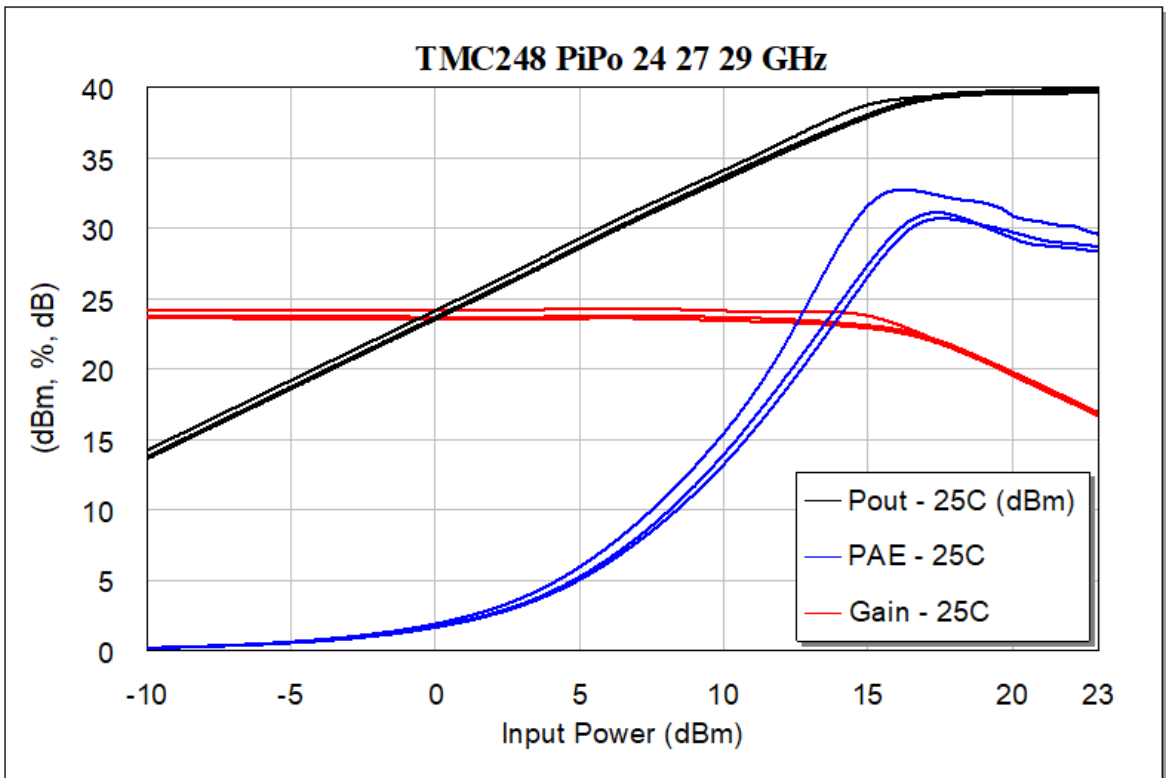
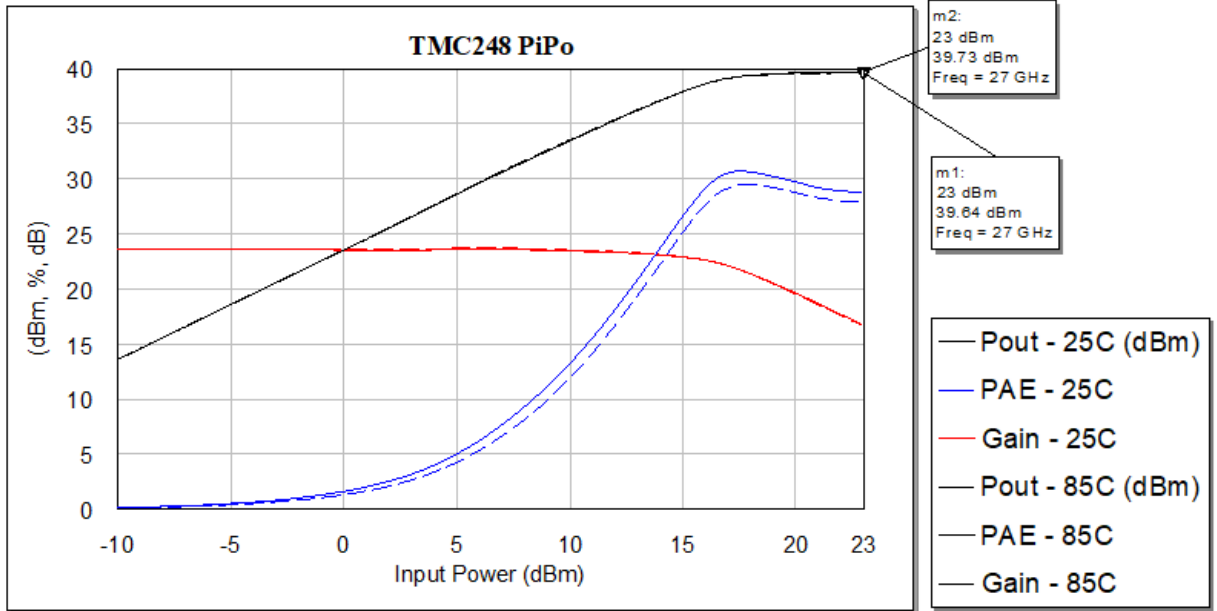
TMC254 Measured On Wafer PAE vs. Frequency, Pin = 18dBm



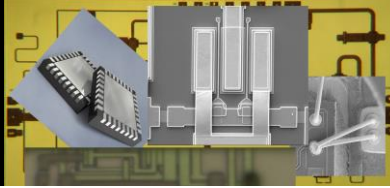
TMC254D 24-30 GHz Power Amplifier



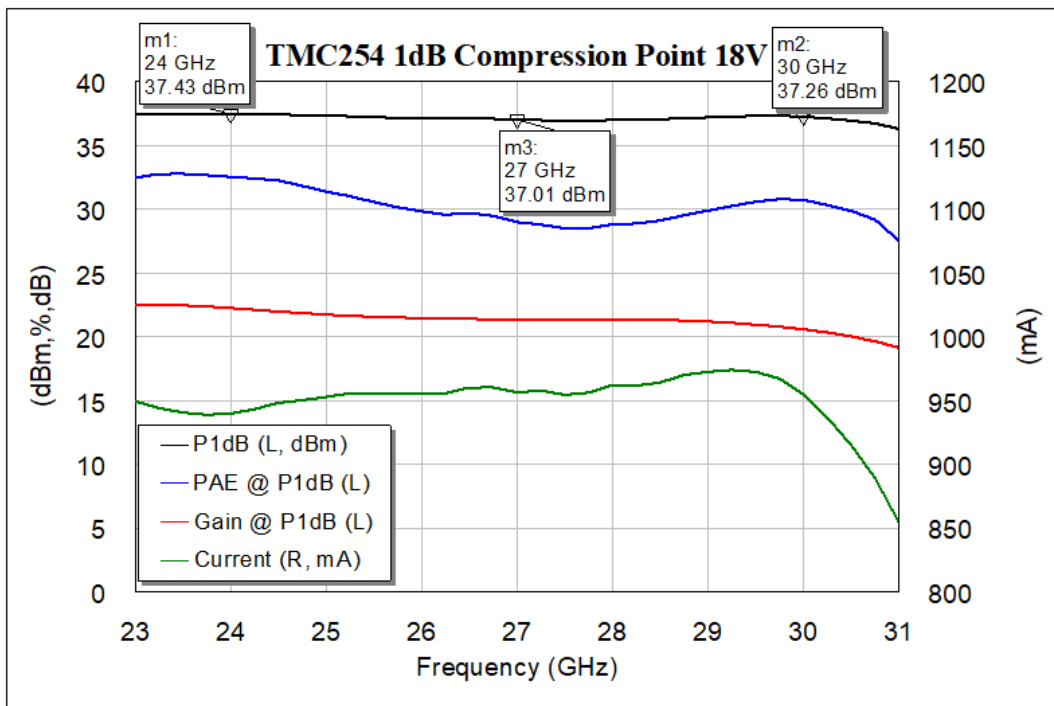
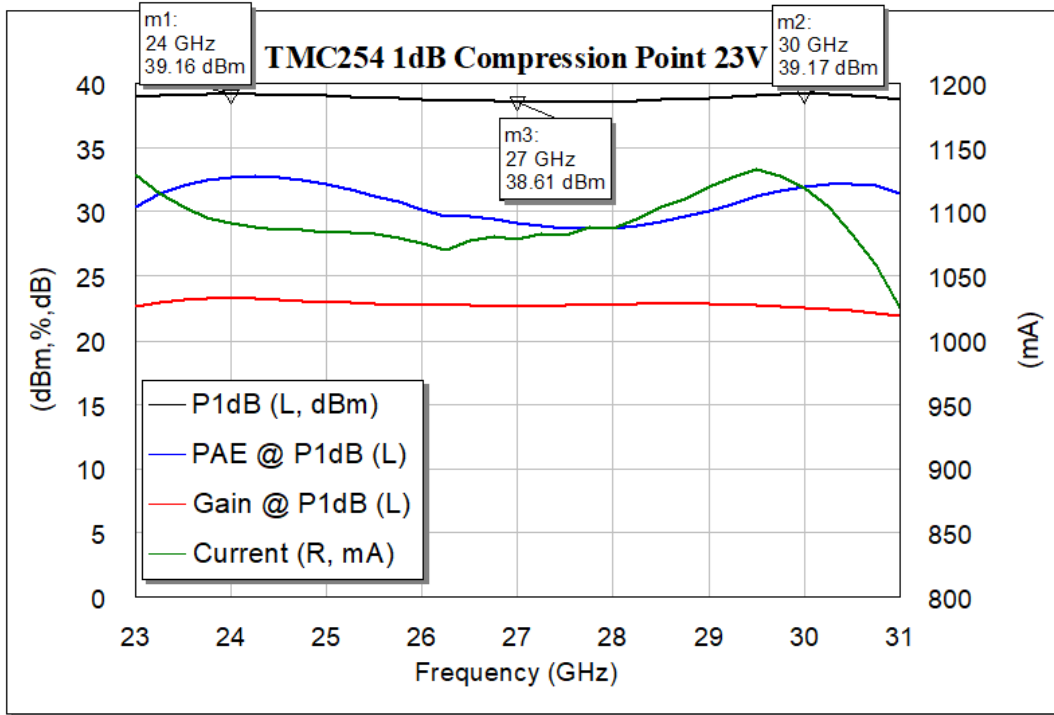
mmTRON
Unleashing the
mmWave Frontier



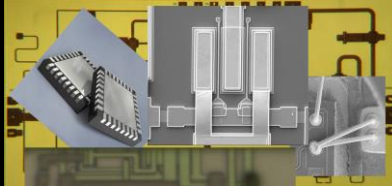
TMC254D 24-30 GHz Power Amplifier



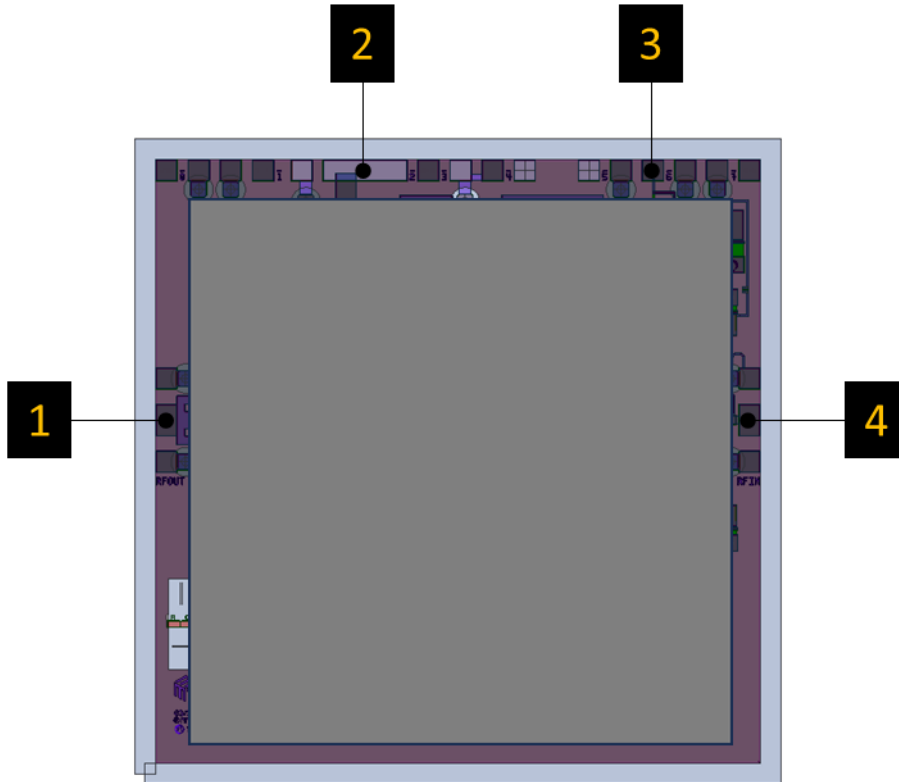
mmTRON
Unleashing the
mmWave Frontier



TMC254D 24-30 GHz Power Amplifier



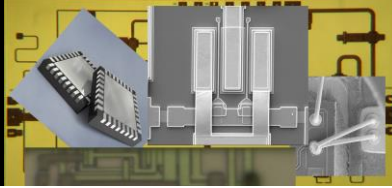
mmTRON
Unleashing the
mmWave Frontier



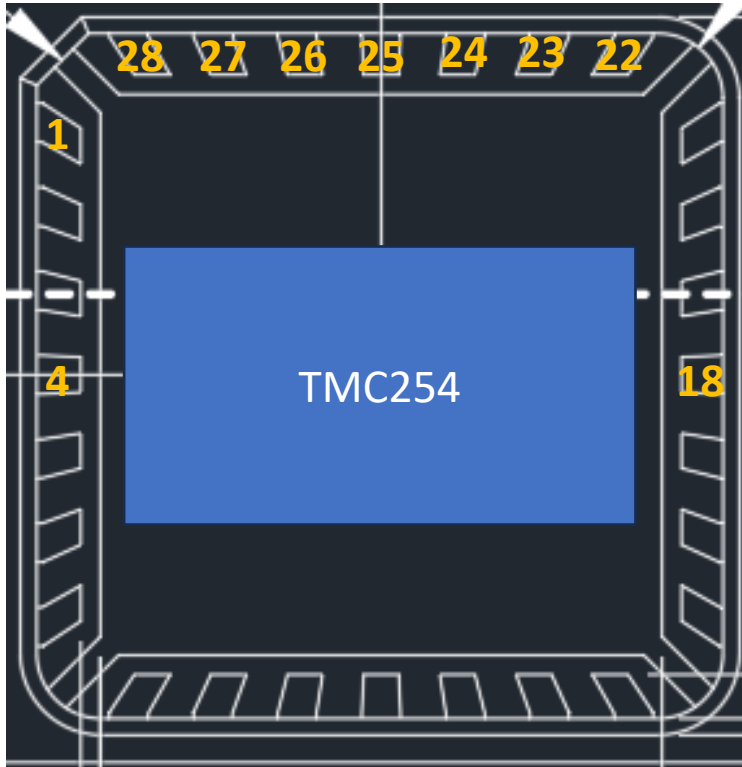
Pad #	Function
1	RF OUTPUT
2	VDD BIAS
3	VGG BIAS
4	RF INPUT

1. DXF and detailed assembly drawings are available on request.

TMC254
24-30 GHz
Power Amplifier



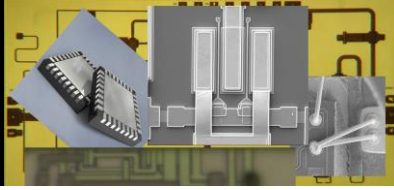
mmTRON
 Unleashing the
 mmWave Frontier



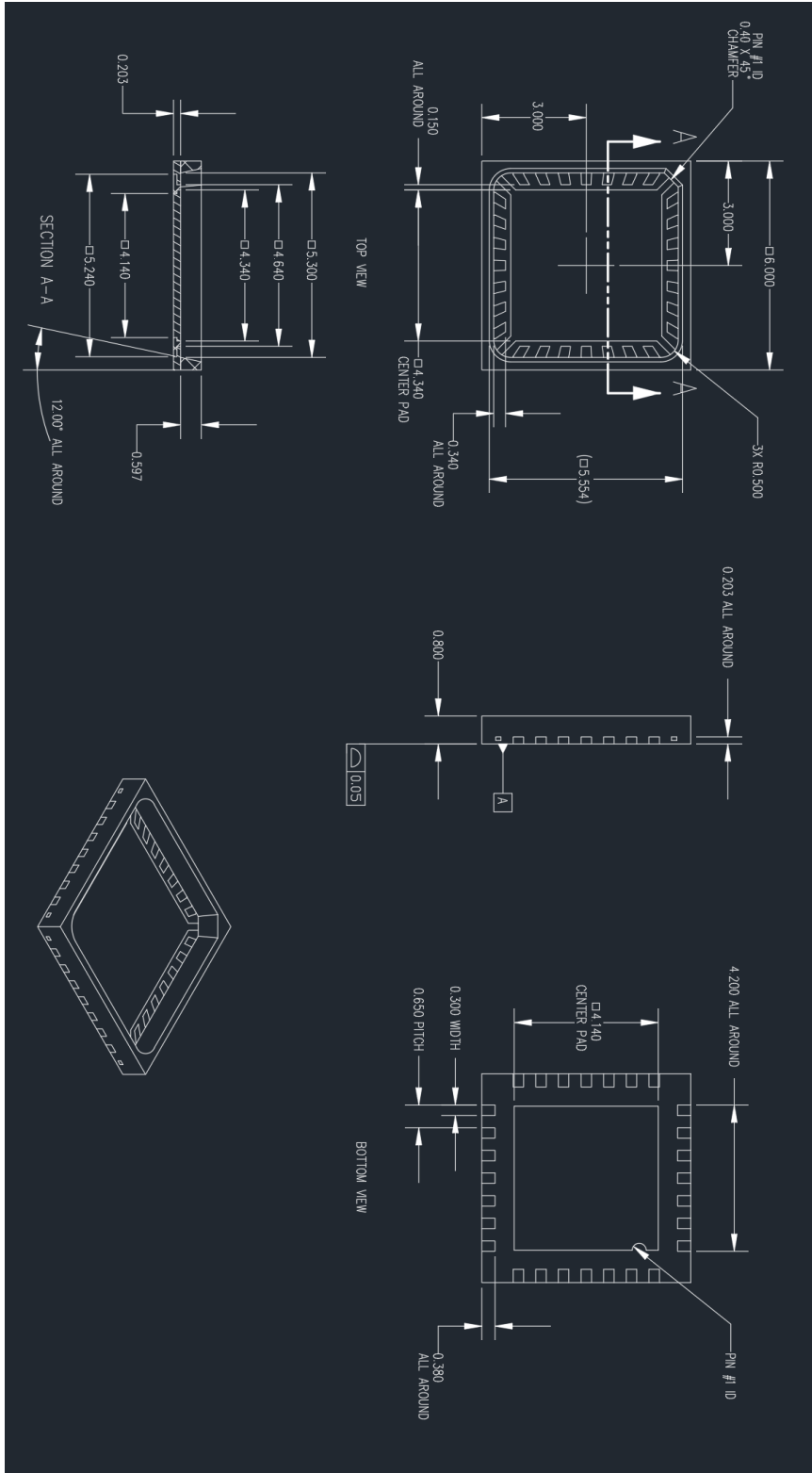
Pad #	Function
18	RF OUTPUT
23	VDD BIAS
26	VGG BIAS
4	RF INPUT
22, 24, 25, 27, 28	GND

1. DXF and detailed assembly drawings are available on request.

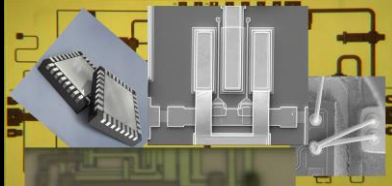
TMC254 24-30 GHz Power Amplifier



mmTRON
Unleashing the
mmWave Frontier



TMC254D 24-30 GHz Power Amplifier



mmTRON
Unleashing the
mmWave Frontier

mmTron Inc. (“mmTron”). All rights reserved.

The information contained in this this datasheet is for reference only. All specifications are subject to change without prior notice.

Except as provided in its Terms and Conditions of Sale or any separate agreement, mmTron assumes no liability or responsibility whatsoever, including for (i) errors or omissions in these materials; (ii) failure to update these materials; or (iii) conflicts or incompatibilities arising from future changes to specifications and product descriptions, which mmTron may make at any time, without notice. These materials grant no license, express or implied, to any intellectual property rights. THESE MATERIALS ARE PROVIDED "AS IS" WITH NO WARRANTY OR LIABILITY, EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF mmTron PRODUCTS INCLUDING FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHT, ACCURACY OR COMPLETENESS, OR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM USE OF THESE MATERIALS. mmTron products are not intended for use in medical, lifesaving or life sustaining applications. mmTron customers using or selling mmTron products for use in such applications do so at their own risk and agree to fully indemnify mmTron for any damages resulting from such improper use or sale. These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations’.

The product layout, and specification are mmTron Proprietary and confidential information. The recipient agrees not to copy, alter, modify, reverse engineer, or attempt to derive the composition or underlying information, structure or ideas of any Confidential Information and must not remove, overprint, deface or change any notice of confidentiality, copyright, trademark, logo, legend or other notices of ownership from any originals or copies of mmTron’s information.