mmTron
Unleashing the mmWave Frontier

TMC153-D
21-26 GHz Driver

Product Features

- RF frequency: 21 to 26 GHz
- Linear Gain: 25 dB
- Noise Figure: 3 dB
- Die Size: X=2.1 mm, Y=0.85 mm, Z=0.05mm
- DC Power: 4 VDC, 230 mA

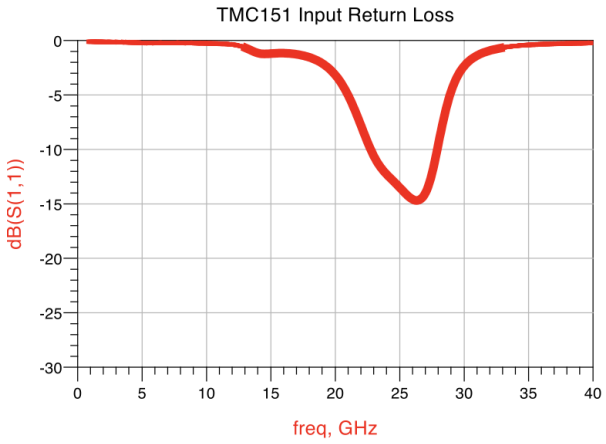
Application

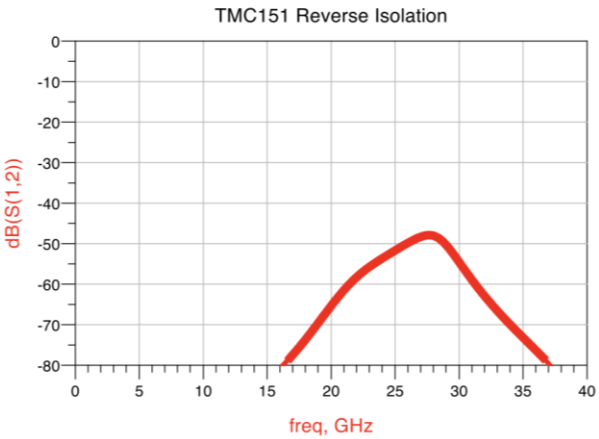
- mmWave 5G
- Point-to-Point Radios and VSATs
- Fiber Optics
- Military, EW and Space

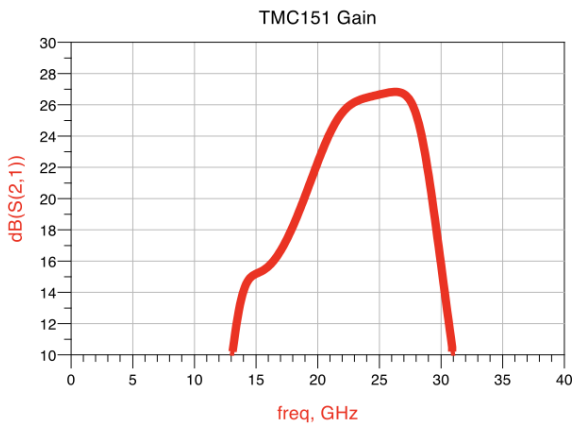
Product Description

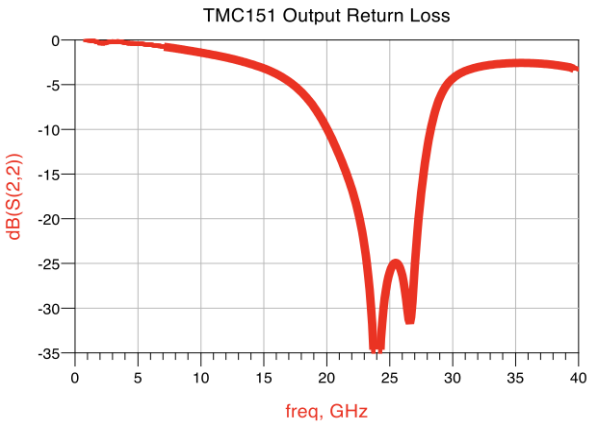
The TMC153D GaAs Driver amplifier is a high linearity low noise device, designed for use in mmWave 5G, Radios, Military, EW and Space applications. The TMC153D is a 50 Ω matched design providing 25dB of gain from 21 to 26 GHz and eliminates the need for RF port matching. TMC153D has on-chip ESD protection diodes. 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 in 3x3 QFN is available as TMC153.

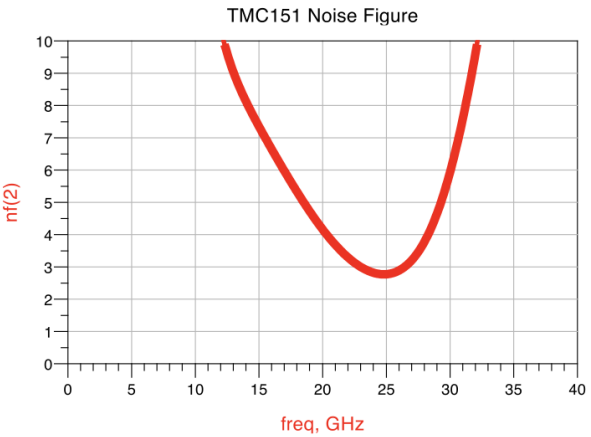
Electrical Performance : **Vdd = 4 V, Vgg = -0.5 V, TA = 25 °C, F = 24 GHz**				
	min	**Typ**	**Max**	**Units**
Frequency	21		26	GHz
Gain		25		dB
P1dB		22		dBm
Psat		23		dBm
Noise Figure		3		dB
OIP3		30		dBm
Bias Voltage		4		V
Bias Current		230		mA

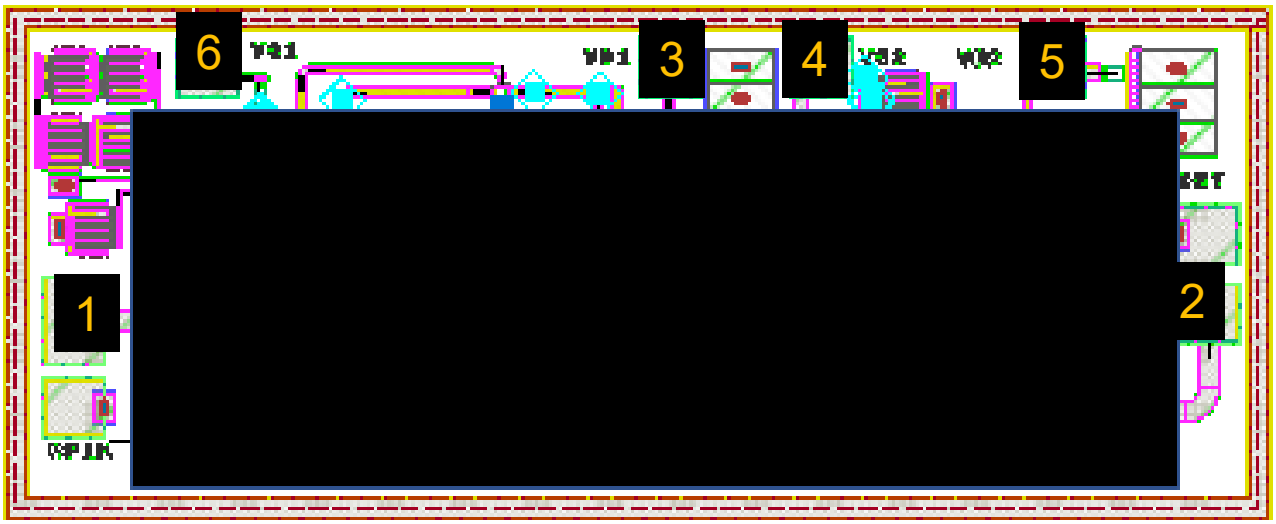

TMC151 Input Return Loss
dB(S(1,1))
freq, GHz


TMC151 Reverse Isolation
dB(S(1,2))
freq, GHz


TMC151 Gain
dB(S(2,1))
freq, GHz


TMC151 Output Return Loss
dB(S(2,2))
freq, GHz


TMC151 Noise Figure
nf(2)
freq, GHz



Pad #	Function
1	RF INPUT
2, 4	VGG BIAS
3, 5	VDD BIAS
6	RF OUTPUT

1. Linearity data under 5GNR and 802.11 modulation as well as DXF and detailed assembly drawings are available on request.
2. TMC152 cane be provided in low cost overmold or air-cavity QFN.



Electrostatic Discharge Caution

This integrated circuit can be damaged by ESD. mmTron Inc. recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications. III-V MMICs are ESD-sensitive. Preventative ESD measures must be employed in all aspects of storage, handling, and assembly. MMIC ESD precautions, handling considerations, and die-attach and bonding methods are critical factors in successful III-V MMIC performance and reliability.



RoHS Compliant

This part is RoHS compliant, meeting the requirements of the EU Restriction of Hazardous Substances Directive 2002/95/EC, commonly known as RoHS. Six substances are regulated: lead, mercury, cadmium, chromium VI (hexavalent chromium), polybrominated biphenyls (PBB), and polybrominated biphenyl ethers (PBDE). RoHS compliance requires that any residual concentration of these substances is below the Directive's maximum concentration values (MCV): cadmium 100ppm by weight and all others 1000ppm by weight.

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