

GT090D

48V, DC – 4.0GHz, 90W GAN HEMT

FEATURES

- Operating Frequency Range: DC to 4.0GHz
- Operating Drain Voltage: +48V
- Maximum Output Power (P_{SAT}): 100.0W
- Maximum Drain Efficiency: 60%
- Efficiency-Tuned P3dB Gain: 15.5dB
- Surface Mount Plastic Package



14 Pin 6x3 mm DFN Package

DESCRIPTION

The GT090D is a 90W (P3dB) unmatched discrete GaN-on-SiC HEMT which operates from DC to 4.0GHz on a 48V supply rail. The wide bandwidth of the GT090D makes it suitable for a variety of applications including cellular infrastructure, radar, communications, and test instrumentation, and can support both CW and pulsed mode of operations.

The device is housed in an industry-standard 6x3 mm surface mount DFN package. Lead-free and ROHS compliant.

TYPICAL PERFORMANCE: POWER TUNED, $T_A = 25^\circ\text{C}$

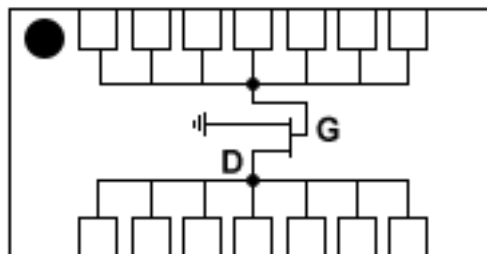
	3.6 GHz	Units
Gain	14.0	dB
Saturated Output Power	100	W
Drain Efficiency	52	%

TYPICAL PERFORMANCE: EFFICIENCY TUNED, $T_A = 25^\circ\text{C}$

	3.6 GHz	Units
Gain	15.5	dB
Saturated Output Power	80	W
Drain Efficiency	60	%

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ABSOLUTE MAXIMUM RATINGS

Parameter	Rating	Units
Drain Source Voltage	+125	V_{DS} (V)
Gate Source Voltage	-10 to +2	V_{GS} (V)
Operating Voltage	55	V (V)
Drain Current	5.0	$I_{D_{MAX}}$ (A)
Junction Temperature	+225	(°C)
Storage Temperature	-65 to +150	(°C)

BLOCK DIAGRAM

ELECTRICAL SPECIFICATIONS: $T_A = 25^\circ\text{C}$

Parameter	Min.	Typ.	Max.	Units	Conditions
Frequency Range	DC		4000	MHz	
DC Characteristics					
Drain Source Breakdown Voltage		200		V_{DS} (V)	
Drain Source Leakage Current		< 5		I_{DS} (mA)	
Gate Threshold Voltage		-2 to -4		V_{GS} (V)	
Operating Conditions					
Gate Voltage		-3		V_G (V)	
Drain Voltage		48		V_D (V)	
Quiescent Drain Current		100		I_{DQ} (mA)	
Thermal Characteristics					
Thermal Resistance		TBD		(°C/W)	