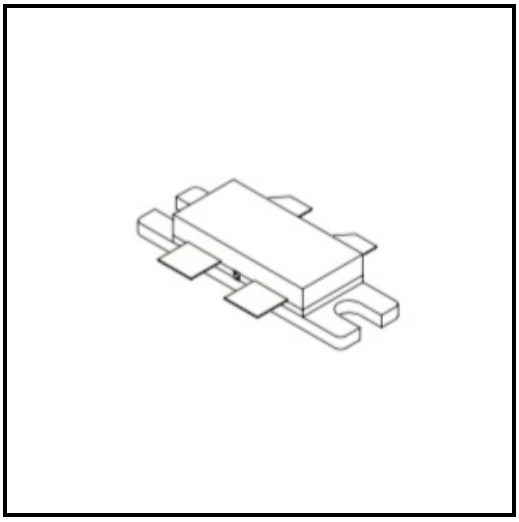
MRF151G

Power Transistor. MOSFET. At 175MHz with 50V, 300W Power, 16 dB Gain.

Product Features

The MRF151G is designed for broadband commercial and military applications at frequencies to 175MHz. The high power, high gain, and broadband

performance of this device make possible solid state transmitters for FM broadcast or TV channel frequency bands.



Mechanical And Environmental Specifications:

Parameter	Description	Notes
RoHS Compliance	Yes	

Drawing

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Typical Performance Curves

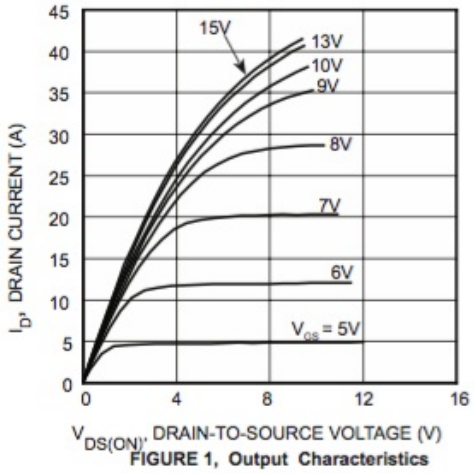

FIGURE 1, Output Characteristics

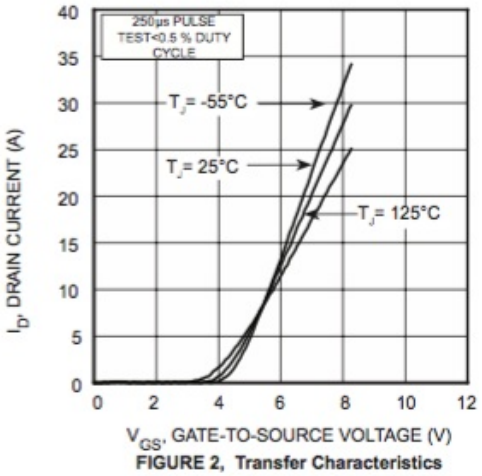

FIGURE 2, Transfer Characteristics

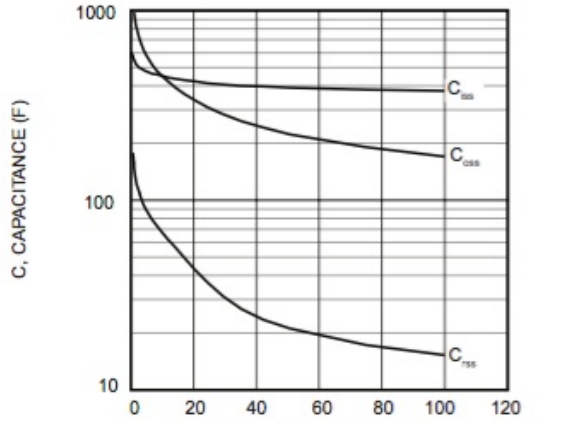

FIGURE 3, Capacitance vs Drain-to-Source Voltage

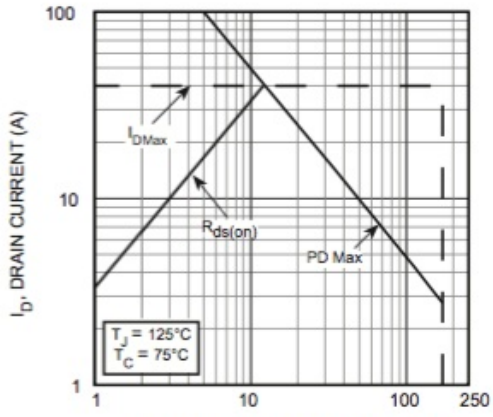

FIGURE 4, Forward Safe Operating Area

Graph

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Dynamic Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
C_{iss}	Input Capacitance	V_{GS} = 0V		383		pF
C_{oss}	Output Capacitance	V_{DS} = 50V		215		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		18		

Functional Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
G_{PS}	f = 175MHz,- V_{DD} = 50V, I_{DQ} = 500mA, P_{out} = 300W	14	16		dB
η_D	f = 175MHz, V_{DD} = 50V, I_{DQ} = 500mA, P_{out} = 300W	50	55		%
Ψ	f = 175MHz, V_{DD} = 50V, I_{DQ} = 500mA, P_{out} = 300W 5:1VSWR - All Phase Angles	No Degradation in Output Power			

1. To MIL-STD-1311 Version A, test method 2204B, Two Tone, Reference Each Tone

Maximum Ratings

All Ratings: T_C=25°C unless otherwise specified

Symbol	Parameter		Unit
V_{DSS}	Drain-Source Voltage	130	V
I_D	Continuous Drain Current @ T_C = 25°C	40	A
V_{GS}	Gate-Source Voltage	±40	V
P_D	Total Device dissipation @ T_C = 25°C	500	W
T_{STG}	Storage Temperature Range	-65 to 150	°C
T_J	Operating Junction Temperature	200	

Static Electrical Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage (V_{GS} = 0V, I_D = 100mA)	130			V
$R_{DS(ON)}$	Drain-Source On-State Resistance ($I_{D(ON)}$ = 10A, V_{GS} = 10V)		.13	.20	
I_{DSS}	Zero Gate Voltage Drain Current (V_{DS} = 50V, V_{GS} = 0V)			50	µA
I_{GSS}	Gate-Source Leakage Current (V_{DS} = ±20V, V_{DS} = 0V)			1.0	µA
g_{fs}	Forward Transconductance (V_{DS} = 10V, I_D = 10A)	5.0	6.2		mhos
$V_{GS(TH)}$	Gate Threshold Voltage (V_{DS} = 10V, I_D = 100mA)	2.9	3.6	4.4	V

Thermal Characteristics

Symbol	Characteristic	Min	Typ	Max	Unit
$R_{\theta JC}$	Junction to Case Thermal Resistance			0.35	°C/W

CAUTION: These Devices are Sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

Product Notes

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