

MRF151G

SILICON MOS N-CHANNEL POWER TRANSISTOR 300 W, up to 175 MHz, Enhancement Mode

The silicon MOS transistor is designed for broadband commercial and military applications at frequencies to 175 MHz. The high power, high gain and broadband performance of this device makes possible solid state transmitters for FM broadcast or TV channel frequency bands.

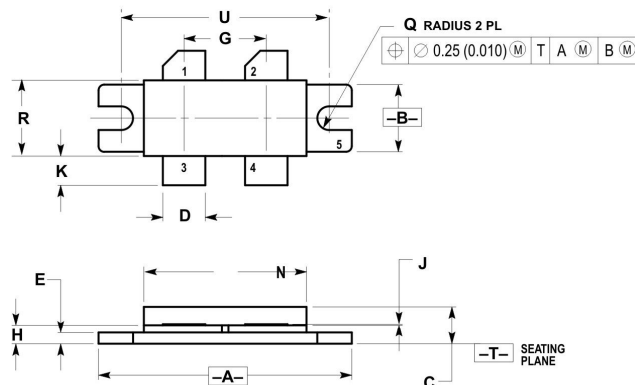
Features:

- Power Gain: 14 dB Min
- Output Power: 300 W
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	125	V_{DC}
Drain Current-Continuous	I_D	40	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.35	$^{\circ}C/W$
Total Power Dissipation	P_D	500	W

CASE 375-04



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

STYLE 2:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. GATE
5. SOURCE

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.330	1.350	33.79	34.29
B	0.370	0.410	9.40	10.41
C	0.190	0.230	4.83	5.84
D	0.215	0.235	5.47	5.96
E	0.050	0.070	1.27	1.77
G	0.430	0.440	10.92	11.18
H	0.102	0.112	2.59	2.84
J	0.004	0.006	0.11	0.15
K	0.185	0.215	4.83	5.33
N	0.845	0.875	21.46	22.23
Q	0.060	0.070	1.52	1.78
R	0.390	0.410	9.91	10.41
U	1.100	BSC	27.94	BSC

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=100$ mA, $V_{GS}=0$ V)	$V_{(BR)DSS}$	125	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	5	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	1	3	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 5$ A)	G_{FS}	5	7	—	mhos
Input Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{ISS}	—	350	—	pF
Output Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{OSS}	—	220	—	pF
Reverse Transfer Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{RSS}	—	15	—	pF
Power Gain ($V_{DS} = 50$ V, $P_{OUT} = 300$ W, $I_{DQ} = 500$ mA, $f = 175$ MHz)	G_p	14	16	—	dB
Drain Efficiency ($V_{DS} = 50$ V, $P_{OUT} = 300$ W, $I_{DQ} = 500$ mA, $f = 175$ MHz)	η_D	50	55	—	%

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