

MRF151

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 150 W, up to 175 MHz, Enhancement Mode

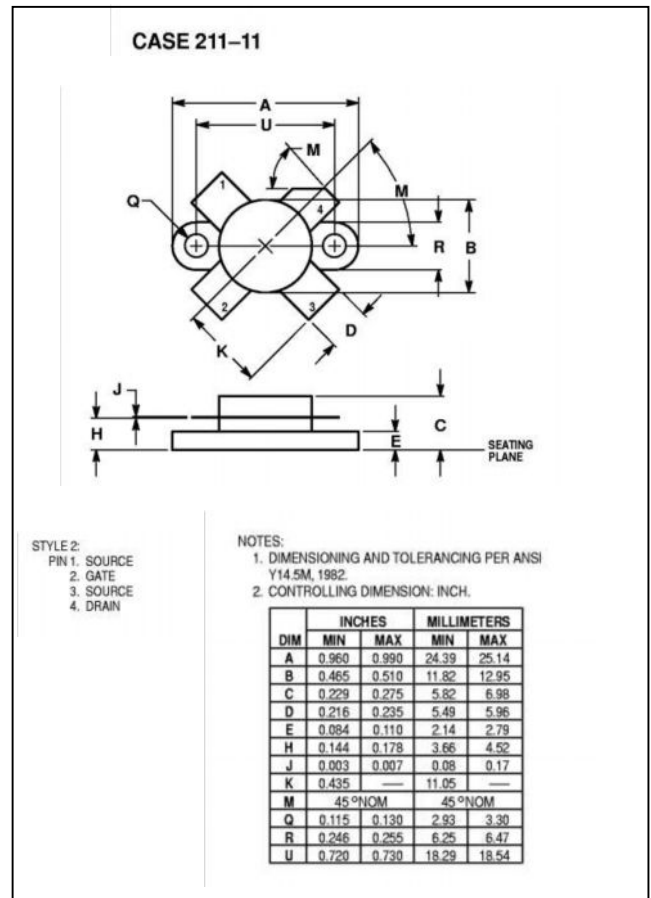
The silicon MOS transistor is designed for professional transmitter applications in the HF frequency range.

- Guaranteed Performance at 30 MHz, 50 V:
- Power Gain 22 dB typ
- Output Power: 150 W
- Efficiency: 40 % typ

- Guaranteed Performance at 175 MHz, 50 V:
- Power Gain 13 dB typ
- Output Power: 150 W

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	125	V_{DC}
Drain Current-Continuous	I_D	16	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 tu +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.6	$^{\circ}C/W$
Total Power Dissipation @ $T_C=25^{\circ}C$	P_D	300	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D=100.0$ 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}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	5.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	1.0	—	5.0	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 5.0$ A)	G_{FS}	5.0	7.0	—	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 ($f_1 = 30$ MHz, $f_2 = 30.001$ MHz, $V_{DD} = 50$ V, $P_{OUT} = 150$ W (PEP), $I_{DQ} = 250$ mA) $F=175$ MHz	G_p	18	22 13	—	dB
Drain Efficiency ($f_1 = 30$ MHz, $f_2 = 30.001$ MHz, $V_{DD} = 50$ V, $P_{OUT} = 150$ W(PEP), $I_{DQ} = 250$ mA)	η_D	—	45	—	%
Intermodulation Distortion ($V_{DD} = 50$ V, $P_{out} = 150$ W (PEP), $f_1 = 30$ MHz, $f_2 = 30.001$ MHz, $I_{DQ} = 250$ mA)	IMD	—	-32	—	dB

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Specification is subject to change without notice

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