SYNTEZ MICROELECTRONICS

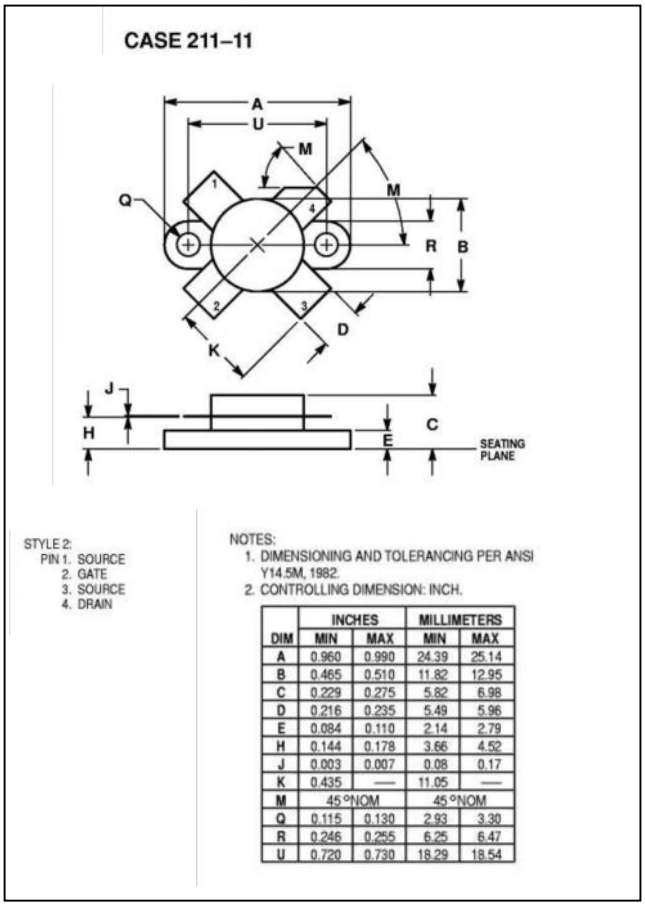
SILICON MOS N-CHANNEL RF POWER TRANSISTOR
150 W, up to 30 MHz, Enhancement Mode

MRF141

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

- Guaranteed Performance at 30 MHz, 28 V:
- Power Gain 20 dB typ
- Output Power: 150 W
- Efficiency: 45 % typ

Typical Performance at 175 MHz, 28 V:
Output Power — 150 W
Gain — 13 dB



DIM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	0.960	0.990	24.39	25.14
B	0.465	0.510	11.82	12.95
C	0.229	0.275	5.82	6.98
D	0.216	0.235	5.49	5.96
E	0.084	0.110	2.14	2.79
H	0.144	0.178	3.66	4.52
J	0.003	0.007	0.08	0.17
K	0.435	—	11.05	—
M	45°NOM		45°NOM	
Q	0.115	0.130	2.93	3.30
R	0.246	0.255	6.25	6.47
U	0.720	0.730	18.29	18.54

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	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	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.6	°C/W
Total Power Dissipation @T_C=25 °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)	$V_{(BR)DSS}$	65	—	—	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} = 28 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} = 28 V, V_{GS}=0 V, f = 1 MHz)	C_{ISS}	—	450	—	pF
Output Capacitance (V_{DS} = 28 V, V_{GS}=0 V, f = 1 MHz)	C_{OSS}	—	320	—	pF
Reverse Transfer Capacitance (V_{DS} = 28 V, V_{GS}=0 V, f = 1 MHz)	C_{RSS}	—	35	—	pF
Power Gain (f = 30; 30.001 MHz, V_{DD} = 28 V, P_{OUT} =150 W(PEP), $I_{DQ.}$ = 250 mA)	Gp	13	16	—	dB
Drain Efficiency (f = 30; 30.001 MHz, V_{DD} = 28 V, P_{OUT} = 150 W (PEP), $I_{DQ.}$ = 250 mA , I_{DQ} = 250 mA)	η_D	50	60	—	%
Intermodulation Distortion (V_{DD} = 28 V, Pout = 150 W (PEP), f1 = 30 MHz, f2 = 30.001 MHz, I_{DQ} = 250 mA)	IMD	–	-30	–	dB

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