SYNTEZ MICROELECTRONICS

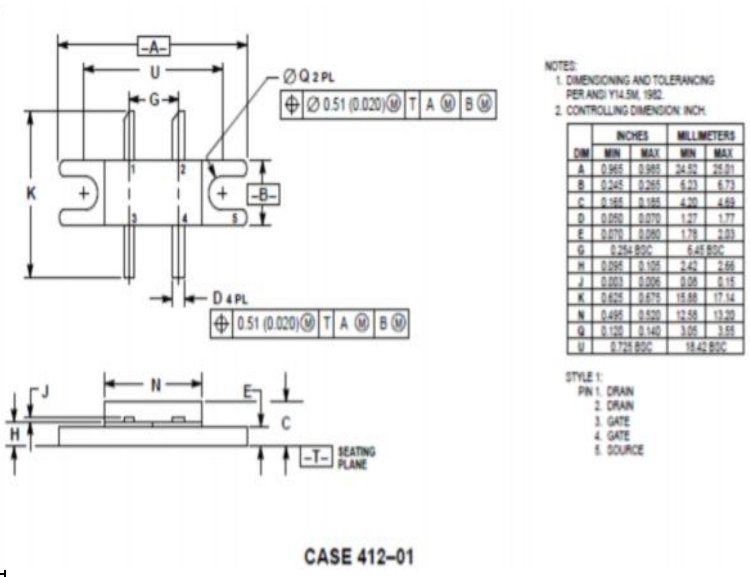
SILICON MOS N-CHANNEL RF POWER TRANSISTOR
40 W, up to 500 MHz, Enhancement Mode

MRF166W

Designed primarily for wideband large–signal output and driver from 30–500 MHz.

Features:

- Performance at 400 MHz, 28 Vdc
- Power Gain: 11 dB Min
- Output Power: 40 W
- Efficiency: 45 % Min



CASE 412–01

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	8.0	A_{DC}
Gate-Source Voltage	V_{GS}	±40	V_{DC}
Storage Temperature Range	T_{STG}	-65 tu +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.0	°C/W
Total Power Dissipation @T_C=25 °C	P_D	175	W

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage (I_D=5.0 mA, V_{GS}=0 V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current (V_{GS}=20 V, V_{DS}=0 V) (1)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current (V_{DS} = 28 V, V_{GS}=0 V) (1)	I_{DSS}	—	—	1.0	mA_{DC}
Gate Threshold Voltage (V_{DS} = 10 V, I_D = 25 mA) (1)	$V_{GS(TH)}$	1	—	6	V_{DC}
Forward Transconductance (V_{DS} = 10 V, I_D = 1.5 A) (1)	G_{FS}	0.6	0.8	—	mhos
Input Capacitance (V_{DS} = 28 V, V_{GS}=0 V, f = 1 MHz) (1)	C_{ISS}	—	30	—	pF
Output Capacitance (V_{DS} = 28 V, V_{GS}=0 V, f = 1 MHz) (1)	C_{OSS}	—	35	—	pF
Reverse Transfer Capacitance (V_{DS} = 28 V, V_{GS}=0 V, f = 1 MHz) (1)	C_{RSS}	—	4.5	—	pF
Power Gain (V_{DS} = 28 V, P_{OUT} = 40W, $I_{DQ.}$ = 100 mA, f = 400 MHz)	Gp	11	13	—	dB
Drain Efficiency (V_{DS} = 28 V, P_{OUT} = 40 W, $I_{DQ.}$ = 100 mA, f = 400 MHz)	η_D	45	50	—	%

(1) Each transistor chip measured separately.

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