

60W, 2.2 GHz, 26V Broadband RF Power N-Channel Enhancement-Mode Lateral MOSFET

Designed for UMTS base station applications in the frequency band 2.1 to 2.2 GHz. Rated with a minimum output power of 60W, it is ideal for W-CDMA, CDMA, TDMA, GSM, and Multi-Carrier Power Amplifiers in Class A or AB operation.

- ALL GOLD metal system for highest reliability
- Industry standard package
- Suggested replacement to the MRF21060
- Internally matched for repeatable manufacturing
- High gain, high efficiency and high linearity
- 10:1 load mismatch tolerant, 60 Watts, 2.11 GHz, 28 Vdc

- **Typical W - CDMA Performance: 2140 MHz, 28 Volts**

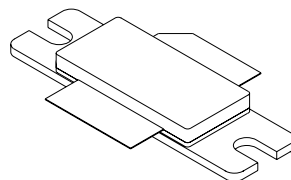
W - CDMA

5MHz Offset @ 4.096 MHz BW, 15 DTCH

Output Power – 6.0 W

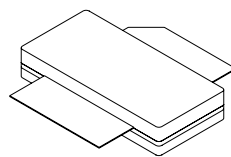
Drain Efficiency – 15 %

Power Gain – 11.0 dB



Package Type - 440117

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Package Type - 440133

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Maximum Ratings

Rating	Symbol	Value	Unit
Drain to Source Voltage, Gate connected to Source	BV_{DSS}	65	Volts
Gate to Source Voltage	GV_{GSS}	+15 to -0.5	Volts
Total Device Dissipation @ $T_C = 70^\circ\text{C}$ Derate above 70°C	P_D	100 0.8	Watts $\text{W}/^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150	$^\circ\text{C}$
Operating Junction Temperature	T_J	200	$^\circ\text{C}$

Thermal Characteristics

Characteristics	Symbol	Maximum	Unit
Thermal Resistance, Junction to Case	Θ_{JC}	1.2	$^\circ\text{C}/\text{W}$

Electrical DC Characteristics ($T_C=25^\circ\text{C}$ unless otherwise specified)

Rating	Symbol	Min	Typ	Max	Unit
Drain to Source Voltage, gate connected to source ($V_{GS}=0$, $I_{DS}=1\text{mA}$)	BV_{DSS}	65	-	-	Volts
Drain to Source Leakage current ($V_{DS}=28\text{V}$, $V_{GS}=0$)	I_{DSS}	-	-	2.0	mA
Gate to Source Leakage current ($V_{GS}=15\text{V}$, $V_{DS}=0$)	I_{GSS}	-	-	2.0	μA
Threshold Voltage ($V_{DS}=10\text{V}$, $I_{DS}=1\text{mA}$)	V_{th}	-	3.5	-	Volts
Gate Quiescent Voltage ($V_{DS}=26\text{V}$, $I_{DS}=540\text{mA}$)	$V_{GS(on)}$	3.0	4.0	5.0	Volts
Drain to Source On Voltage ($V_{GS}=10\text{V}$, $I_{DS}=1\text{A}$)	$V_{DS(on)}$	-	0.14		Volts
Forward Transconductance ($V_{DS}=10\text{V}$, $I_D=5\text{A}$)	G_m		3.0	-	S

AC Characteristics ($T_C=25^\circ\text{C}$ unless otherwise specified)

Rating	Symbol	Min	Typ	Max	Unit
Output Capacitance* ($V_{DS}=26\text{V}$, $V_{GS}=0\text{V}$, freq= 1MHz)	C_{OSS}	-	52	-	pF
Feedback Capacitance* ($V_{DS}=26\text{V}$, $V_{GS}=0\text{V}$, freq= 1MHz)	C_{RSS}	-	3.0	-	pF

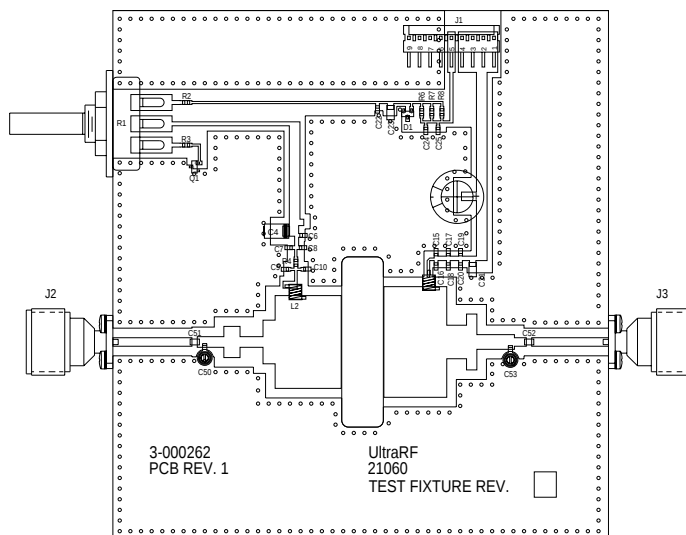
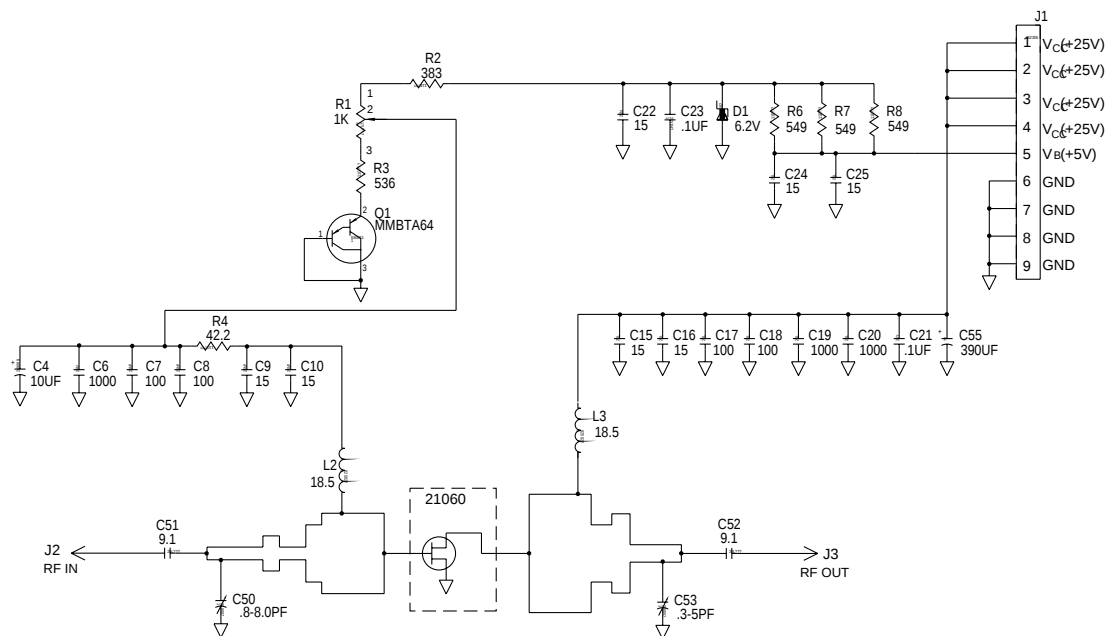
* for reference only

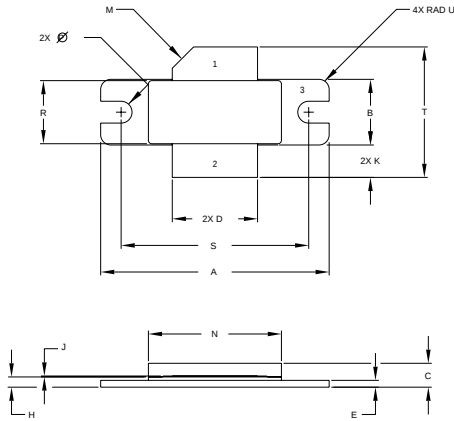
RF and Functional Tests ($T_C=25^\circ\text{C}$ unless otherwise specified, UltraRF Broadband Fixture)

Rating	Symbol	Min	Typ	Max	Unit
Two-Tone Common Source Amplifier Power Gain $V_{DD}=26\text{V}$, $I_{DQ}=270\text{mA}$, $P_{OUT}=60\text{W}$ PEP $f=2110\text{ MHz}$ and 2170 MHz , Tone Spacing = 100kHz	G_{PS}	11.0	12.0	-	dB
Two Tone Drain Efficiency $V_{DD}=26\text{V}$, $P_{OUT}=60\text{W}$ PEP, $I_{DQ}=540\text{mA}$ $f=2110\text{ MHz}$ and 2170 MHz , Tone Spacing = 100kHz	η	31	35	-	%
Pout, 1dB Compression Point $V_{DD}=26\text{V}$, $P_{OUT}=60\text{W}$ CW, $f=2170\text{ MHz}$	P1dB		60		
Input Return Loss $V_{DD}=26\text{V}$, $P_{OUT}=60\text{W}$ PEP, $I_{DQ}=540\text{mA}$ $f_1=2110\text{ MHz}$ and 2170 MHz , Tone Spacing = 100kHz	IRL	-	-10		dBc
Load Mismatch Tolerance $V_{DS}=26\text{V}$, $I_{DQ}=540\text{mA}$, $P_{OUT}=60\text{W}$, $f=2170\text{ MHz}$	VSWR	10:1	-	-	

CAUTION - MOS Devices are susceptible to damage from ElectroStatic Discharge (ESD). Appropriate precautions in handling, packaging and testing MOS devices must be observed.

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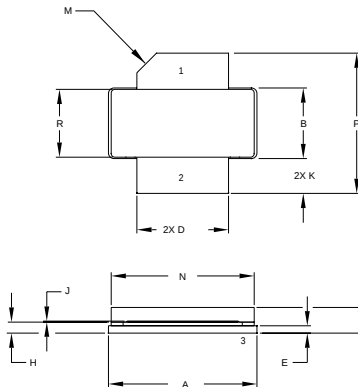
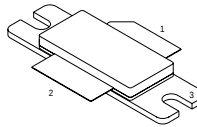
NOTES:

1. DIMENSIONING AND TOLERANCING PER
ANSI Y14.5M, 1982.

2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.335	1.345	33.91	34.16
B	0.380	0.390	9.65	9.91
C	0.135	0.149	3.43	3.78
D	0.495	0.505	12.57	12.83
E	0.035	0.045	.89	1.14
H	0.057	0.067	1.45	1.70
J	0.003	0.006	.08	.15
K	0.170	0.210	4.32	5.33
M	45R REF		45R REF	
N	0.773	0.787	19.63	19.99
P	0.123	0.133	3.12	3.38
R	0.364	0.374	9.25	9.50
S	1.095	1.105	27.81	28.07
T	0.745	0.785	18.92	19.94
U	0.060 REF		1.52 REF	

PIN 1. DRAIN
PIN 2. GATE
PIN 3. SOURCE



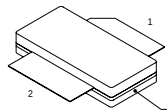
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1. DIMENSIONING AND TOLERANCING PER
ANSI Y14.5M, 1982.

2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.805	0.815	20.45	20.70
B	0.380	0.390	9.65	9.91
C	0.135	0.149	3.43	3.78
D	0.495	0.505	12.57	12.83
E	0.035	0.045	.89	1.14
H	0.057	0.067	1.45	1.70
J	0.003	0.006	.08	.15
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