PRELIMINARY DATA SHEET

UGF18060

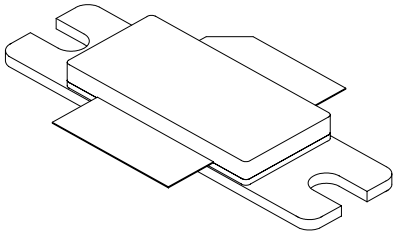
60W, 1.8 GHz, 26V Broadband RF Power N-Channel Enhancement-Mode Lateral MOSFET

Designed for DCS base station applications in the frequency band 1.805 to 1.88 GHz. Rated with a minimum output power of 60W. It is ideal for CDMA, TDMA, WCDMA, GSM, and Multi-Carrier Power Amplifiers in Class AB operation.

- ALL GOLD metal system for highest reliability
- Industry standard package
- Suggested alternative to the MRF18060
- Internally matched for repeatable manufacturing
- High gain, high efficiency and high linearity

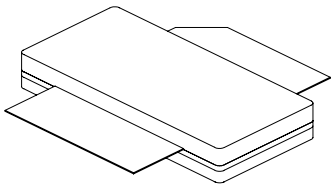
- **Application Specific Performance, 1.88 GHz**

GSM:	**60 Watts**	**12.5 dB**
EDGE:	**25 Watts**	**12.5 dB**
IS95 CDMA:	**7.5 Watts**	**12.5 dB**
CDMA2000:	**TBD Watts**	**12.5 dB**



Package Type 440171

PN: UGF18060F



Package Type 440172

PN: UGF18060P

Maximum Ratings

Rating	Symbol	Value	Unit
Drain to Source Voltage, Gate connected to Source	V_{DSS}	65	Volts
Gate to Source Voltage	V_{GSS}	+15 to –0.5	Volts
Total Device Dissipation @ Tcase = 60°C Derate above 60°C	P_D	65 0.83	Watts W/°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Operating Junction Temperature	T_J	200	°C

Thermal Characteristics

Characteristic	Symbol	Typical	Unit
Thermal Resistance, Junction to Case	Θ_{JC}	-	°C/W

Electrical DC Characteristics (T_C =25°C unless otherwise specified)

Rating	Symbol	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage (V_{GS}=0, I_D=1mA)	BV_{DSS}	65	-	-	Volts
Drain to Source Leakage current (V_{DS}=26V, V_{GS}=0)	I_{DSS}	-	-	1.0	mA
Gate to Source Leakage current (V_{GS}=15V, V_{DS}=0)	I_{GSS}	-	-	1.0	µA
Threshold Voltage (V_{DS}=10V, I_D=1mA)	$V_{GS(th)}$	-	3.5	-	Volts
Gate Quiescent Voltage (V_{DS}=26 V, I_D=900mA)	$V_{GS(Q)}$	3.0	4.0	6.0	Volts
Drain to Source On Voltage (V_{GS}=10V, I_D=2A)	$V_{DS(on)}$	-	0.15	-	Volts
Forward Transconductance (V_{DS}=10V, I_D=5A)	Gm	-	-	-	S

AC Characteristics (T_C =25°C unless otherwise specified)

Rating	Symbol	Min	Typ	Max	Unit
Input Capacitance * (V_{DS}=26V, V_{GS}=0V, f = 1MHz)	C_{ISS}	-	-	-	pF
Output capacitance * (V_{DS}= 26V, V_{GS}=0V, f = 1MHz)	C_{OSS}	-	350	-	pF
Feedback capacitance * (V_{DS}=26V, V_{GS}=0V, f = 1MHz)	C_{RSS}	-	-	-	pF

* Part is internally matched on input and output.

RF and Functional Tests (Tc=25°C unless otherwise specified, Cree Microwave Broadband Fixture)

Rating	Symbol	Min	Typ	Max	Unit
CW Small Signal Gain, Pout=10W V_{DD}=26V, I_{DQ}=500mA	G_L	-	12.5	-	dB
CW Power Gain, P_{out} = 60 W V_{DD}=26V, I_{DQ}=500mA	G_P	-	11.5	-	dB
CW Drain Efficiency, P_{out} = 60 W, f=1880 MHz, V_{DD}=26V, I_{DQ}=500mA,	η_D	-	36	-	%
Two-Tone Common-Source Amplifier Power Gain V_{DD}=26V, I_{DQ}=500mA, P_{out} = 60 W PEP f_1 =1880 MHz and f_2=1880.1 MHz	G_{TT}	-	12	-	dB
Two-Tone Intermodulation Distortion V_{DD}=26V, I_{DQ}=500mA, P_{out} = 60 W PEP f_1 =1880 MHz and f_2=1880.1 MHz	I_{MD}	-	-28	-	dBc
Two-Tone Drain Efficiency V_{DD}=26V, I_{DQ}=500mA, P_{out} = 60 W PEP f_1 =1880 MHz and f_2=1880.1 MHz	η_{D2T}	-	38	-	%
Input Return Loss V_{DD} =26V, P_{out} = 60 W PEP, I_{DQ}=500mA f_1 =1805 MHz and 1880 MHz, Tone Spacing = 100kHz	IRL	-	-10	-	dB
Load Mismatch Tolerance V_{DS}=26V, I_{DQ}= 500 mA, Pout=60W, f=1880 MHz	VSWR*	10:1	-	-	Ψ

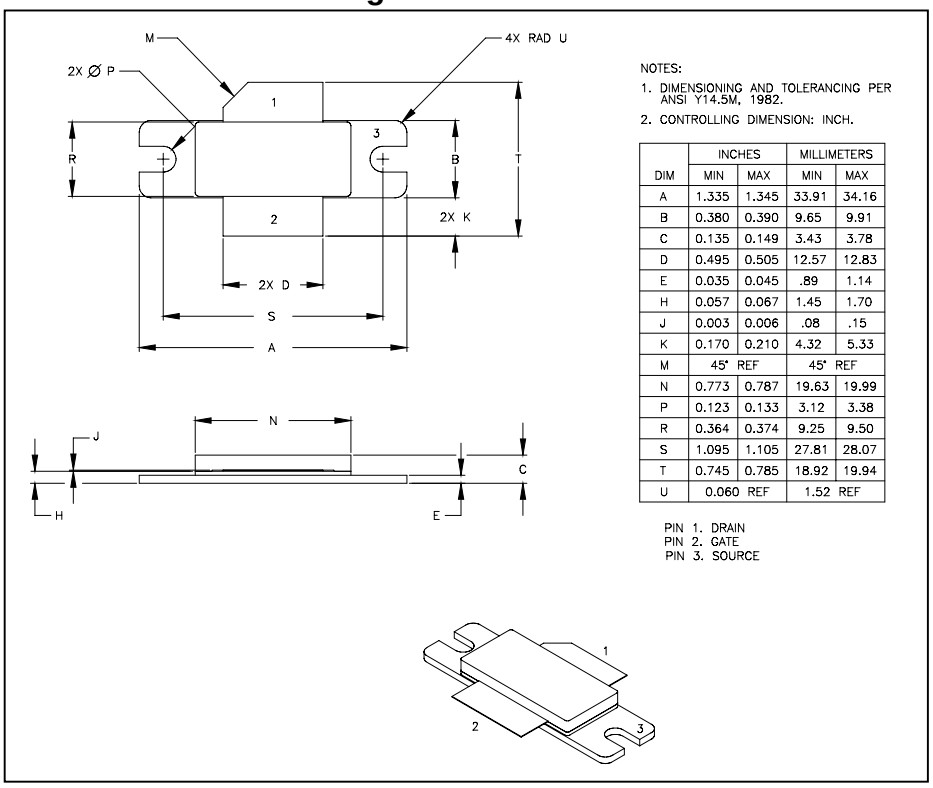
Note (unless otherwise specified):
1. Source and load impedance shall be 50 ohms.

*No degradation in device performance after test.

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

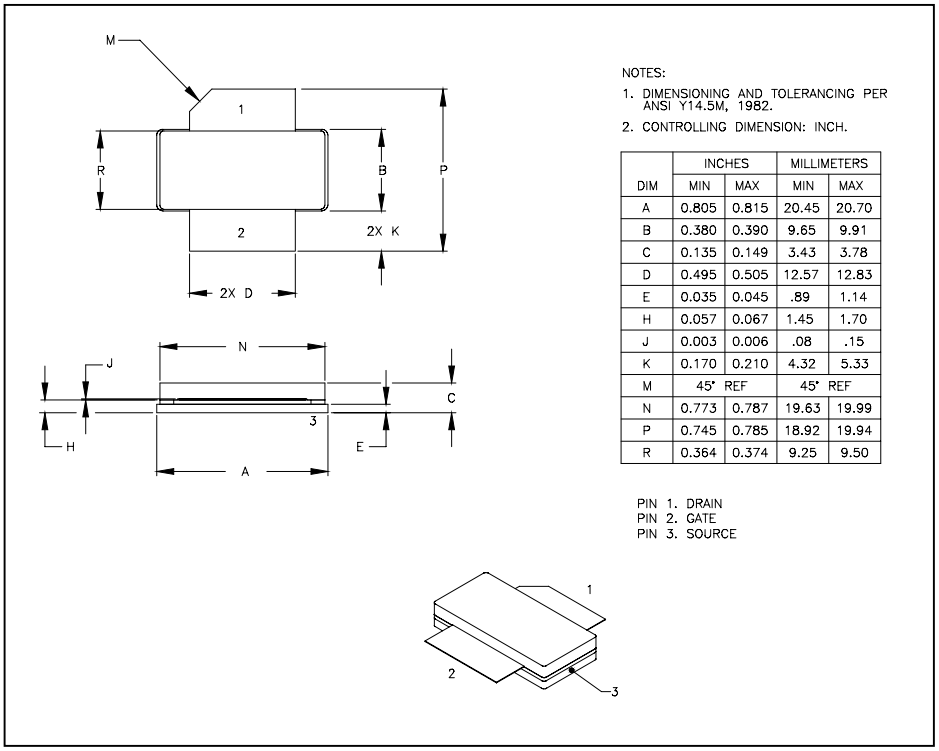
Product Dimensions

Package Number 440171



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	45° REF		45° 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	

Package Number 440172



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
K	0.170	0.210	4.32	5.33
M	45° REF		45° REF	
N	0.773	0.787	19.63	19.99
P	0.745	0.785	18.92	19.94
R	0.364	0.374	9.25	9.50