

UGF2016

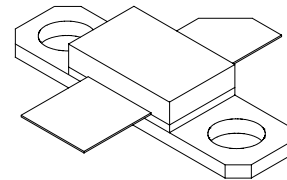
16W, 2.0 GHz, 26V Broadband RF Power N-Channel Enhancement-Mode Lateral MOSFET

This device is designed for base station applications up to frequencies of 2.0 GHz. Rated with a minimum output power of 16W, it is ideal for CDMA, TDMA, GSM, FM, Single or Multi-Carrier Power Amplifiers in Class A or AB operation.

- ALL GOLD metal system for highest reliability.
- Industry standard package.
- Low intermodulation distortion of -30dBc at 16W (PEP).

- **Application Specific Performance, 1.84 GHz**

GSM:	16 Watts	13.5 dB
EDGE:	8 Watts	13.5 dB
IS95 CDMA:	3.5 Watts	13.5 dB
W-CDMA:	2.3 Watts	13.5 dB



Package Type 440095

PN: UGF2016F

Maximum Ratings

Rating	Symbol	Value	Unit
Drain to Source Voltage, gate connected to source	BV_{DSS}	65	Volts
Gate to Source Voltage	BV_{GSS}	+/- 20	Volts
Total Device Dissipation @ Tcase = 70°C Derate above 70°C	P_D	36.1 0.28	Watts W/°C
Storage Temperature Range	T_{STG}	-60 to +150	°C
Operating Junction Temperature	T_J	200	°C

Thermal Characteristics

Characteristics	Symbol	Typical	Unit
Thermal Resistance, Junction to Case	θ_{jc}	3.8	°C/W

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

Rating	Symbol	Min	Typ	Max	Unit
Drain to Source Voltage, gate connected to source (V _{GS} = 0, I _{DS} = 1mA)	BV_{DSS}	65	-	-	Volts
Drain to Source Leakage current (V _{DS} = 26V, V _{GS} = 0)	I_{DSS}	-	-	0.5	μA
Gate to Source Leakage current (V _{GS} = 20V, V _{DS} = 0)	I_{GSS}	-	-	1.0	μA
Threshold Voltage (V _{DS} = 10V, I _{DS} = 1mA)	V_{TH}	2.0	3.0	5.0	Volts
Gate Quiescent Voltage (V _{DS} = 26 V, I _{DQ} = 150mA)	$V_{GS(on)}$	3.0	4.0	6.0	Volts
Drain to Source On Voltage (V _{GS} = 10V, I _{DS} = 200mA)	$V_{DS(on)}$	-	-	0.18	Volts
Forward Transconductance (V _{DS} = 10V, I _D = 0.5A)	G_M	-	0.8	-	S

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

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

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

Rating	Symbol	Min	Typ	Max	Unit
Linear Power Gain, Single Tone ($V_{DS}=26\text{V}$, $I_{DQ}=150\text{mA}$, $P_{OUT}=8\text{W}$, $f=1840\text{ MHz}$)	G_L	12.5	13.5	-	dB
Compressed Power Gain, Single Tone ($V_{DS}=26\text{V}$, $I_{DQ}=150\text{mA}$, $P_{OUT}=16\text{W}$, $f=1840\text{ MHz}$)	G_P	11.5	12.5	-	dB
Drain Efficiency, Single Tone ($V_{DS}=26\text{V}$, $I_{DQ}=150\text{mA}$, $P_{OUT}=16\text{W}$, $f=1840\text{ MHz}$)	η_D	42	48	-	%
Intermodulation Distortion, Two Tone ($V_{DS}=26\text{V}$, $I_{DQ}=150\text{mA}$, $P_{OUT}=16\text{W PEP}$ $f_1=1840\text{ MHz}$, $f_2=1840.1\text{MHz}$)	IMD	-	-32	-30	dBc
Load Mismatch Tolerance ($V_{DS}=26\text{V}$, $I_{DQ}=150\text{mA}$, $P_{OUT}=16\text{W}$, $f=1840\text{ MHz}$)	VSWR*	10:1	-	-	Ψ

Note (unless otherwise specified):

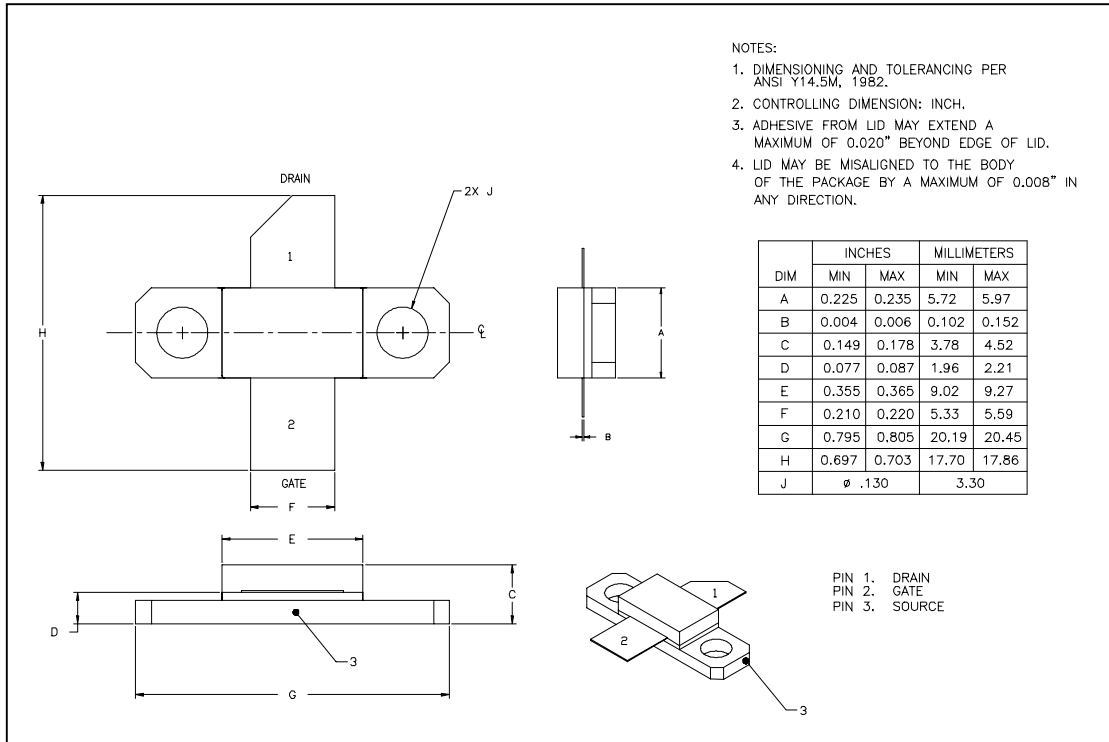
1. Source and load impedance shall be 50 ohms.

*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

UGF2016F -Package Number 440095





PRELIMINARY DATA SHEET

UGF2016

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