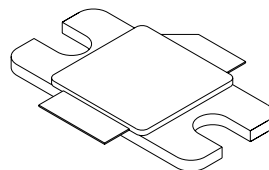


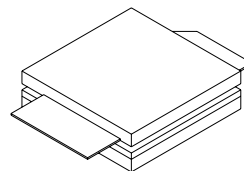
30W, 1880, 26V Broadband RF Power N-Channel Enhancement-Mode Lateral DMOS

Designed for DCS base station applications in the frequency band 1.805 to 1.880 GHz. Rated with a minimum output power of 30W, it is ideal for 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 for MRF18030
- Internally matched for repeatable manufacturing
- High gain, high efficiency and high linearity
- Typical EDGE Performance (ETSI 300-910 GSM 05.05 v. 5.5.1)
 - Average Load Power – 10 W
 - Associated PAE – 34 %
 - Power Gain – 12.5 dB
 - ACPR1 (30 kHz BW offset $\pm$ 400 kHz normalized to total power in a 30 kHz BW): -57 dBc
 - ACPR2 (30 kHz BW offset $\pm$ 600 kHz normalized to total power in a 30 kHz BW): -66 dBc



Package Type 440162



Package Type 440161

UPF18030

Maximum Ratings

Rating	Symbol	Value	Unit
Drain to Source Voltage, Gate connected to Source	BV_{DSS}	65	Volts
Gate to Source Voltage	BV_{GSS}	+15 to -0.5	Volts
Total Device Dissipation @ $T_C = 70^\circ\text{C}$ Derate above 70°C	P_D	65 0.5	Watts 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}	2.0	$^\circ\text{C/W}$

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 ($V_{GS}=0$, $I_D=1\text{mA}$)	BV_{DSS}	65	-	-	Volts
Drain to Source Leakage current ($V_{DS}=28\text{V}$, $V_{GS}=0$)	I_{DSS}	-	-	1.0	mA
Gate to Source Leakage current ($V_{GS}=15\text{V}$, $V_{DS}=0$)	I_{GSS}	-	-	1.0	μA
Threshold Voltage ($V_{DS}=10\text{V}$, $I_D=1\text{mA}$)	V_{TH}	-	3.5	-	Volts
Gate Quiescent Voltage ($V_{DS}=26\text{V}$, $I_D=250\text{mA}$)	$V_{GS(on)}$	3.0	4.0	5.0	Volts
Drain to Source On Voltage ($V_{GS}=10\text{V}$, $I_D=1\text{A}$)	$V_{DS(on)}$	-	0.28		Volts
Forward Transconductance ($V_{DS}=10\text{V}$, $I_D=5\text{A}$)	G_m		2.0	-	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}	-	26	-	pF
Feedback Capacitance ($V_{DS}=26\text{V}$, $V_{GS}=0\text{V}$, freq= 1MHz)	C_{RSS}	-	1.5	2.2	pF

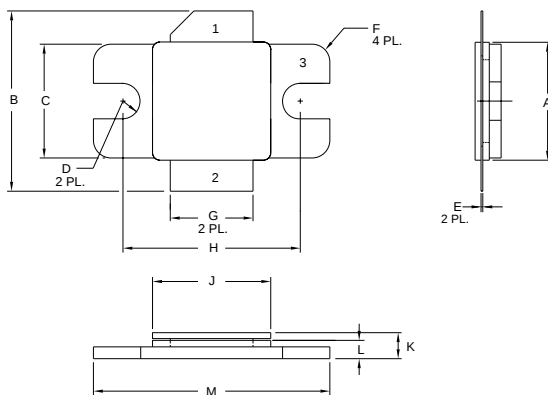
* For reference only.

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

Rating	Symbol	Min	Typ	Max	Unit
Two-Tone Common-Source Amplifier Power Gain $V_{DD}=26\text{V}$, $I_{DQ}=270\text{mA}$, $P_{OUT}=30\text{W}$ PEP $f_1=1805\text{ MHz}$, and 1880 MHz , Tone Spacing = 100kHz	G_{PS}	11.5	12.5	-	dB
Two-Tone Drain Efficiency $V_{DD}=26\text{V}$, $P_{OUT}=30\text{W}$ PEP, $I_{DQ}=270\text{mA}$ $f=1805\text{ MHz}$ and 1880 MHz , Tone Spacing = 100kHz	η	33	36	-	%
P_{OUT} , 1dB Compression Point $V_{DD}=26\text{V}$, $P_{OUT}=30\text{W}$ CW, $f=1880\text{ MHz}$	P1dB		30		W
Input Return Loss $V_{DD}=26\text{V}$, $P_{OUT}=30\text{W}$ PEP, $I_{DQ}=270\text{mA}$ $f=1805\text{ MHz}$ and 1880 MHz , Tone Spacing = 100kHz	IRL	-	-10	-	dB
Load Mismatch Tolerance ($V_{DD}=26\text{V}$, $I_{DQ}=250\text{mA}$, $P_{OUT}=30\text{W}$ $f=1880\text{ MHz}$)	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.

UPF18030



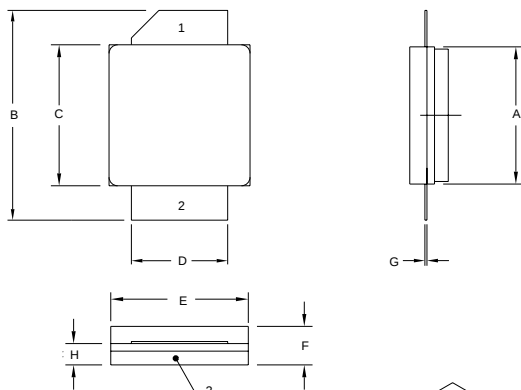
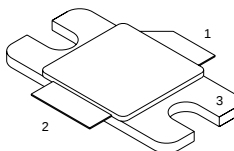
NOTES:

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

2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.395	.405	10.03	10.29
B	.580	.620	14.73	15.75
C	.380	.390	9.65	9.91
D	.055	.065	1.40	1.65
E	.004	.006	0.10	0.15
F	.055	.065	1.40	1.65
G	.275	.285	6.99	7.24
H	.595	.605	15.11	15.37
J	.395	.405	10.03	10.29
K	.129	.149	3.28	3.78
L	.055	.065	1.40	1.65
M	.795	.805	20.19	20.45

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



NOTES:

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

2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.395	.405	10.03	11.43
B	.580	.620	14.73	15.75
C	.390	.410	9.91	10.41
D	.275	.285	6.99	7.24
E	.395	.405	10.03	10.29
F	.129	.149	3.28	3.78
G	.004	.006	0.11	0.15
H	.055	.065	1.40	1.65

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

