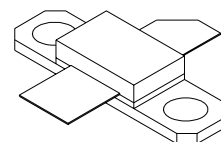
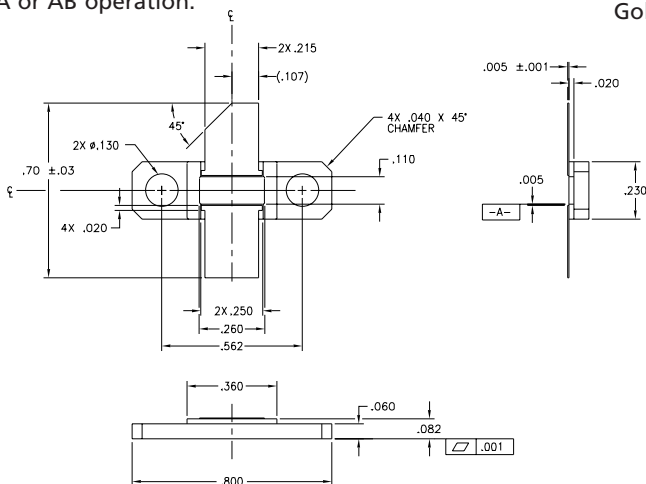


60W, 1GHz, 26V Broadband RF Power N-Channel Enhancement-Mode Lateral DMOS

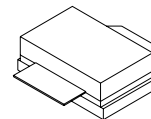
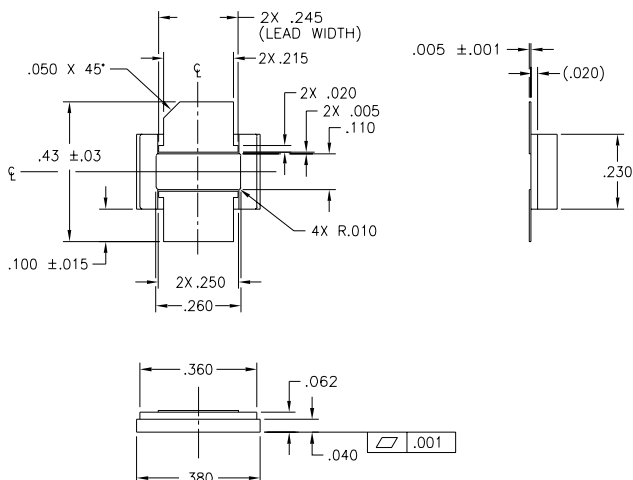
Description

This device is designed for base station applications up to frequencies of 1GHz. Rated with a minimum output power of 60W, it is ideal for CDMA, TDMA, GSM, FM, Single or Multi-Carrier Power Amplifiers in Class A or AB operation.

- Industry standard package.
- Low intermodulation distortion of -30dBc at 60W (PEP).
- Gold Metalization, Gold Bond Wires, Gold-Plated Packages.



Package Type 440095



Package Type 440134

UPF1060

Maximum Ratings

Rating	Symbol	Value	Unit
Drain to Source Voltage, gate connected to source	V_{DSS}	65	Volts
Gate to Source Voltage	V_{GS}	± 20	Volts
Total Device Dissipation @ $T_{case} = 70^{\circ}C$ Derate above $70^{\circ}C$	P_D	118 0.9	Watts $W/^{\circ}C$
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Operating Junction Temperature	T_J	200	$^{\circ}C$

Thermal Characteristics

Characteristics	Symbol	Maximum	Unit
Thermal Resistance, Junction to Case	Θ_{JC}	1.1	$^{\circ}C/W$

6

Electrical DC Characteristics ($T_C=25^{\circ}C$ 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 ($V_{DS}=28V$, $V_{GS}=0$)	I_{DSS}	-	-	1.0	mA
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	3.3	5.0	Volts
Gate Quiescent Voltage ($V_{DS}=26V$, $I_{DS}=400mA$)	$V_{GS(on)}$	3.0	4.0	6.0	Volts
Drain to Source On Voltage ($V_{GS}=10V$, $I_{DS}=1A$)	$V_{DS(on)}$	-	0.18	-	Volts
Forward Transconductance ($V_{DS}=10V$, $I_D=5A$)	G_M	2.2	2.8	-	S

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

Rating	Symbol	Min	Typ	Max	Unit
Input Capacitance ($V_{DS}=26\text{V}$, $V_{GS}=0$, freq= 1MHz)	C_{ISS}	-	77	-	pF
Output capacitance ($V_{DS}= 26\text{V}$, $V_{GS}=0\text{V}$, freq= 1MHz)	C_{OSS}	-	40	-	pF
Feedback capacitance ($V_{DS}=26\text{V}$, $V_{GS}=0\text{V}$, freq= 1MHz)	C_{RSS}	-	2.8	-	pF

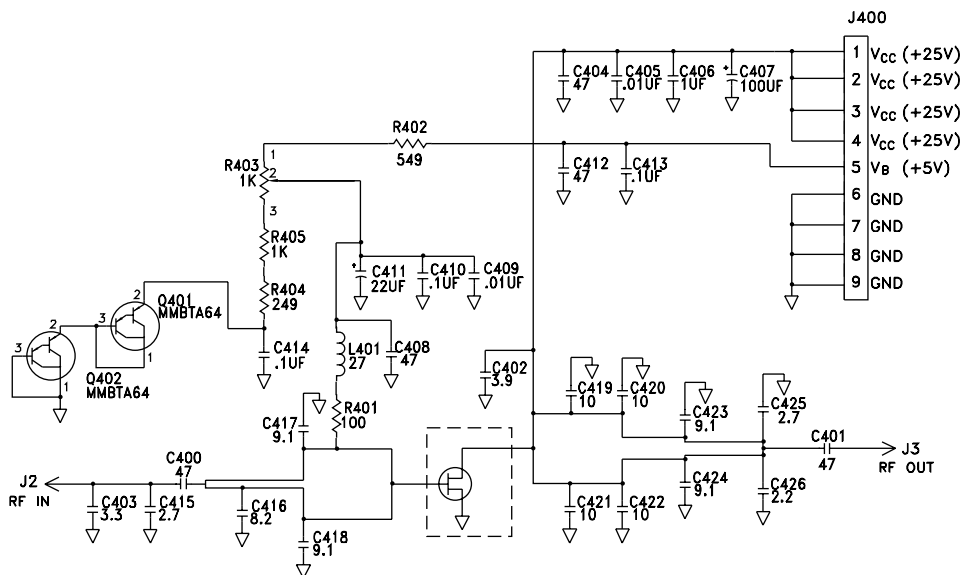
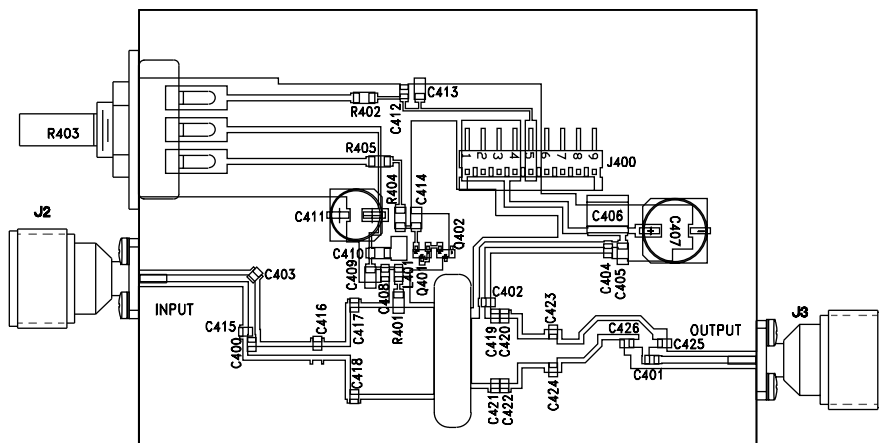
RF and Functional Tests ($T_C=25^\circ\text{C}$ unless otherwise specified, UltraRF Broadband Fixture)

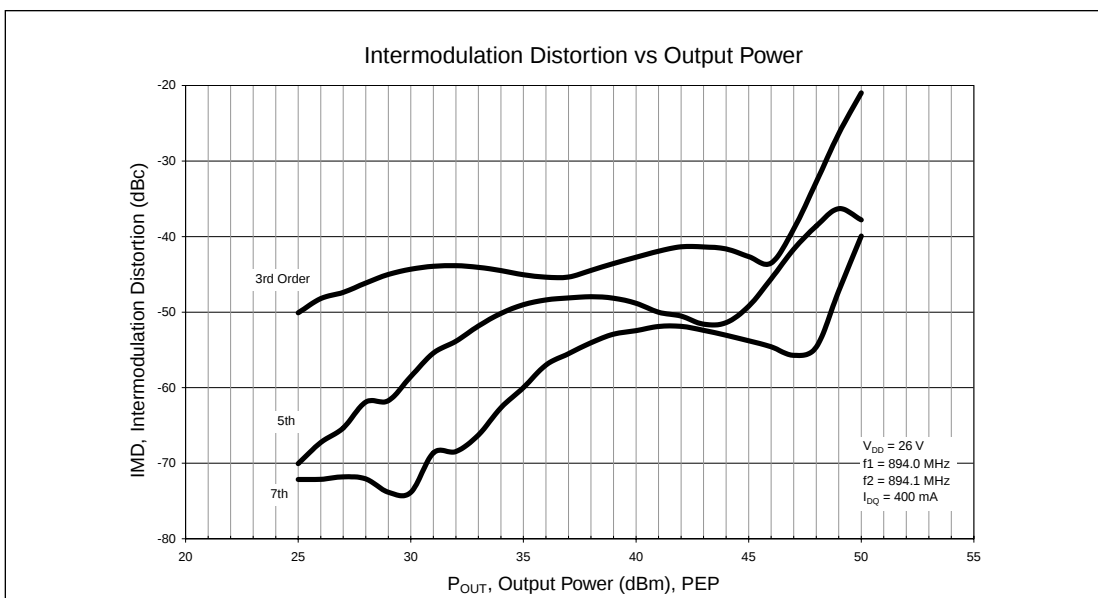
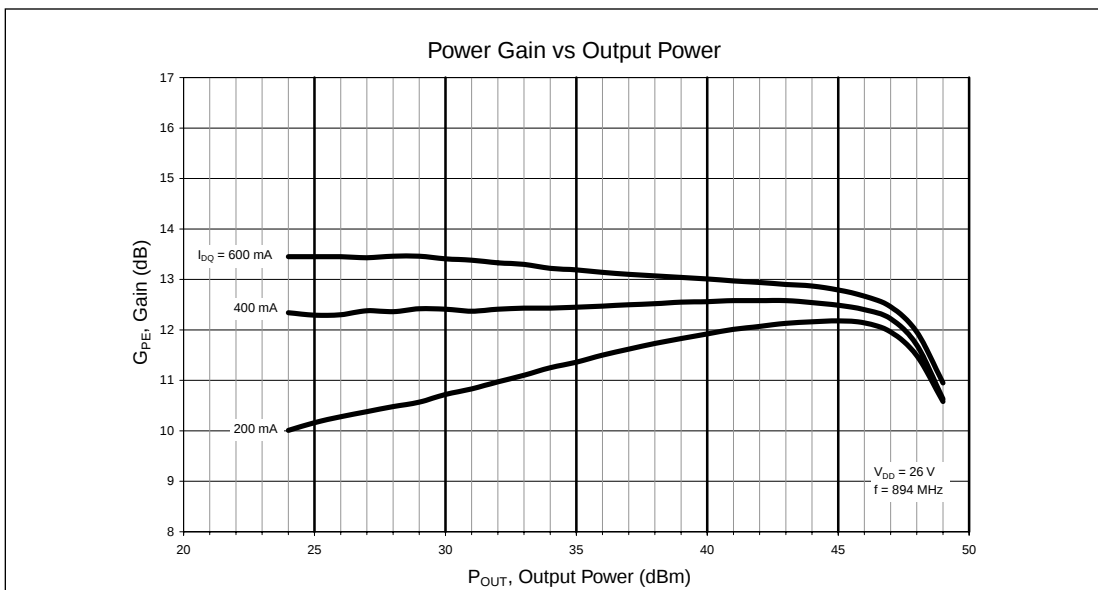
Rating	Symbol	Min	Typ	Max	Unit
Linear Power Gain, Single Tone ($V_{DS}=26\text{V}$, $I_{DQ}=400\text{mA}$, $P_{OUT}=10\text{W}$, f=894 MHz)	G_{plin}	11.0	12.5	-	dB
Compressed Power Gain, Single tone ($V_{DS}=26\text{V}$, $I_{DQ}=400\text{mA}$, $P_{OUT}=60\text{W}$, f=894 MHz)	G_{ps}	10.5	11.5	-	dB
Drain Efficiency, Single Tone ($V_{DS}=26\text{V}$, $I_{DQ}=400\text{mA}$, $P_{OUT}=60\text{W}$, f=894 MHz)	η	45	52	-	%
Intermodulation Distortion, Two Tone ($V_{DS}=26\text{V}$, $I_{DQ}=400\text{mA}$, $P_{OUT}=60\text{W PEP}$ f1=894 MHz, f2=894.1MHz)	IMD	-	-32	-30	dBc
Load Mismatch Tolerance ($V_{DS}=26\text{V}$, $I_{DQ}=400\text{mA}$, $P_{OUT}=60\text{W}$, f=894 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.

UPF1060

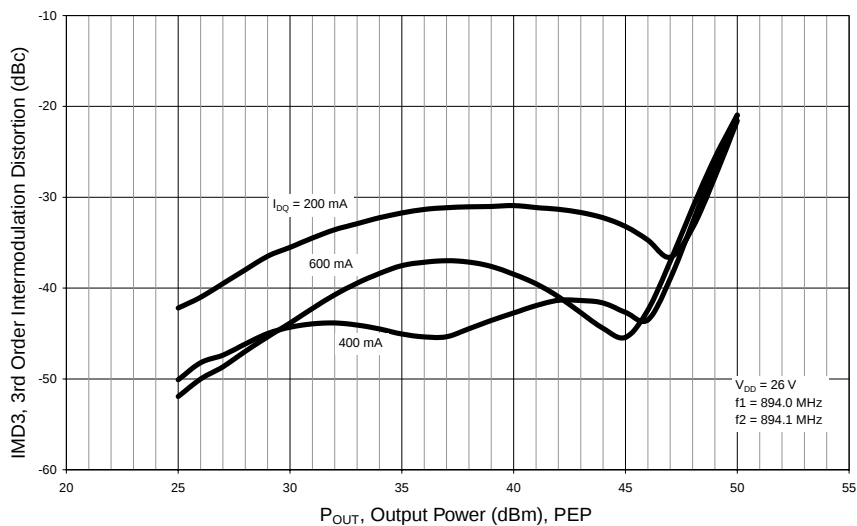
Fixture Drawings



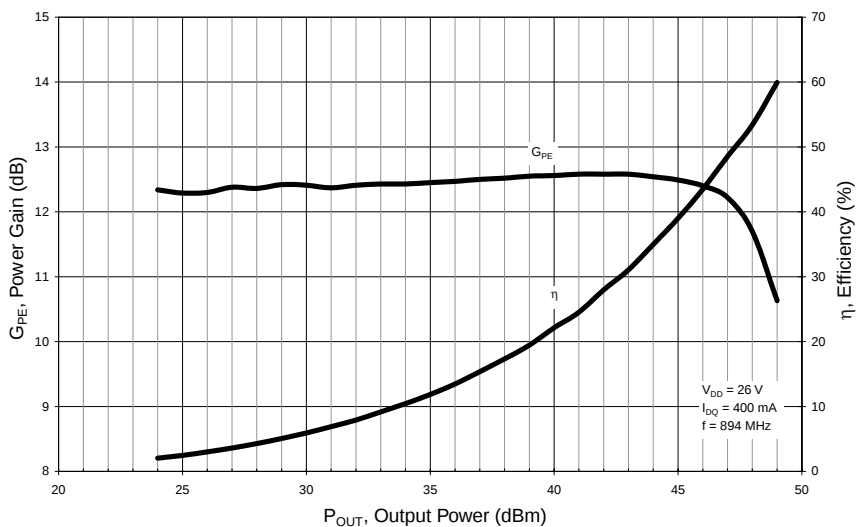


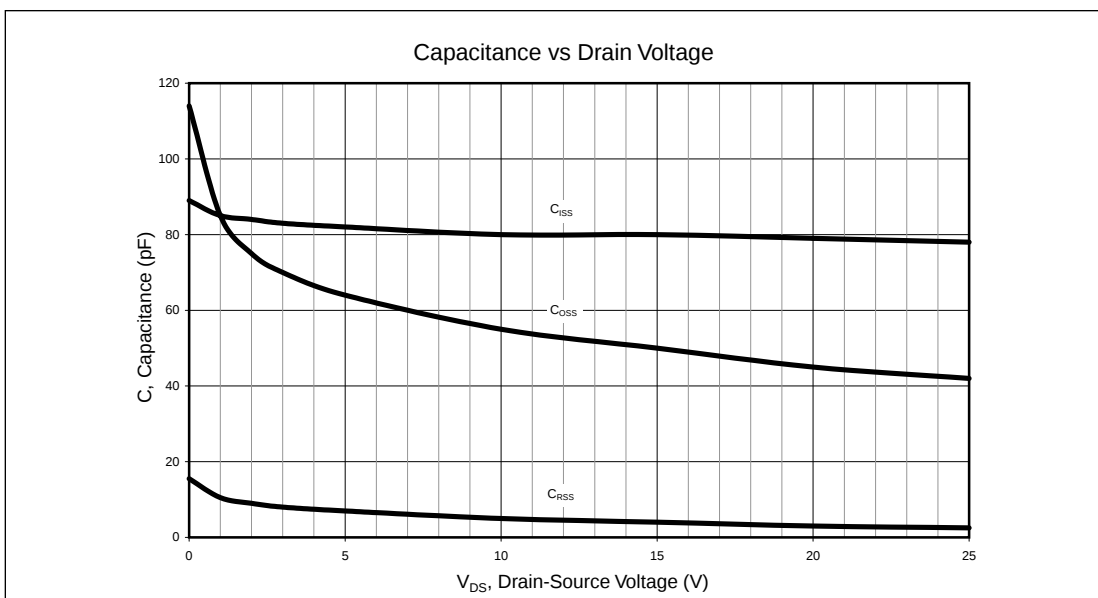
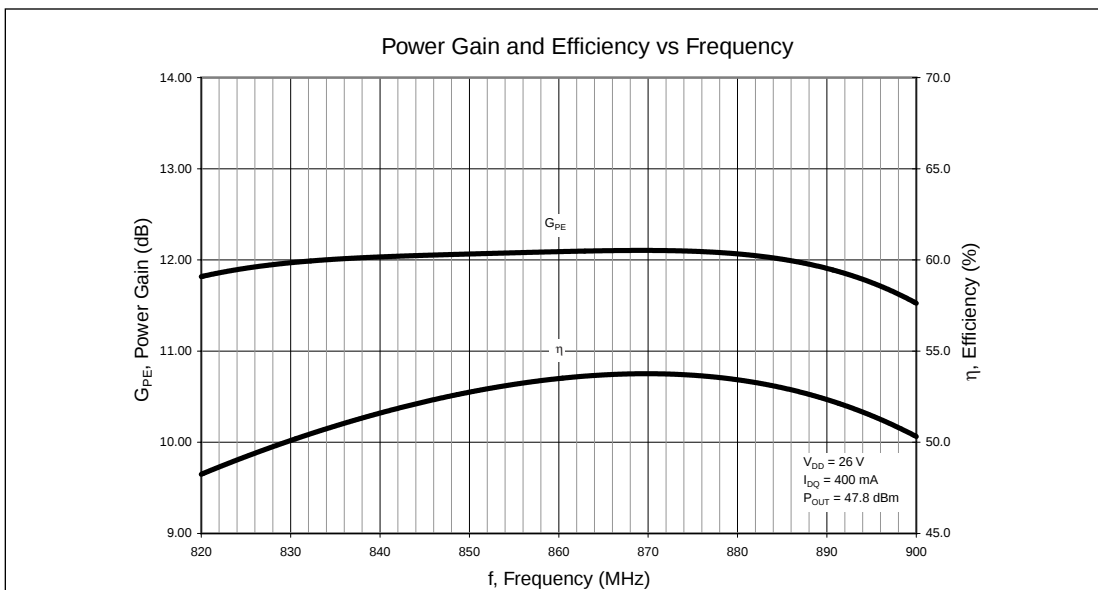
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Intermodulation Distortion vs Output Power

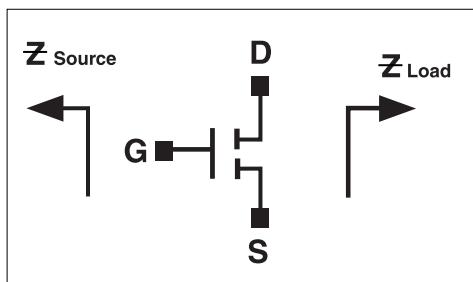


Power Gain & Efficiency vs Output Power





UPF1060



$$V_{DD} = 26V$$

$$I_{DQ} = 400mA$$

Frequency (MHz)	Z Source	Z Load
850	.45 - j1.10	1.47 + j.27
860	.46 - j1.12	1.52 + j.31
870	.48 - j1.14	1.60 + j.34
880	.49 - j1.16	1.68 + j.36
890	.51 - j1.18	1.79 + j.36
900	.52 - j1.20	1.87 + j.36

6

DC Safe Operating Area

