

FLC161WF

C-Band Power GaAs FETs

ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ\text{C}$	7.5	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ\text{C}$
Channel Temperature	T_{ch}		175	$^\circ\text{C}$

Fujitsu recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed +2.0 and -1.0 mA respectively with gate resistance of 200 Ω .

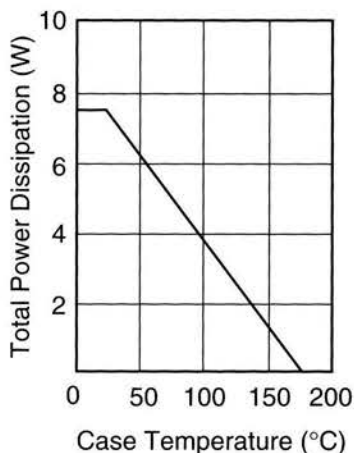
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	600	900	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 400\text{mA}$	-	300	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 30\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -30\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.6 I_{DSS} (\text{Typ.}),$ $f = 6 \text{GHz}$	30.5	31.8	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.5	7.5	-	dB
Power-added Efficiency	η_{add}		-	35	-	%
Thermal Resistance	R_{th}	Channel to Case	-	15	20	$^\circ\text{C}/\text{W}$

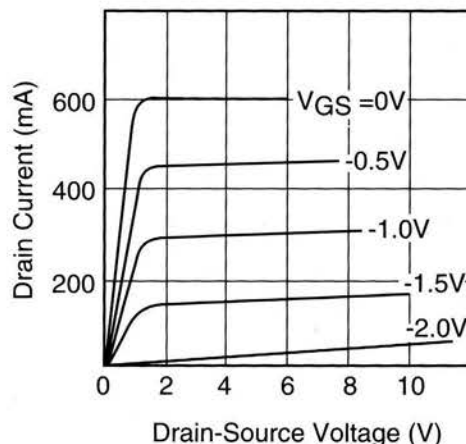
CASE STYLE: WF

G.C.P.: Gain Compression Point

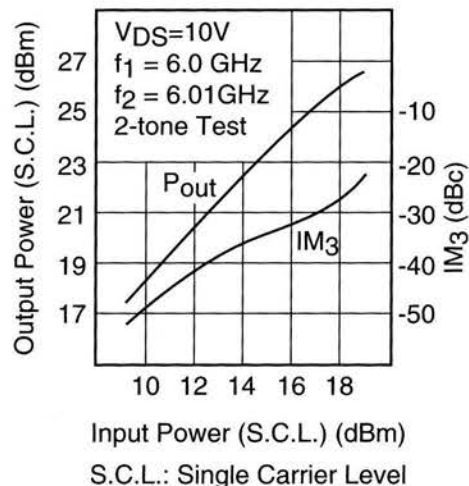
POWER DERATING CURVE



DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



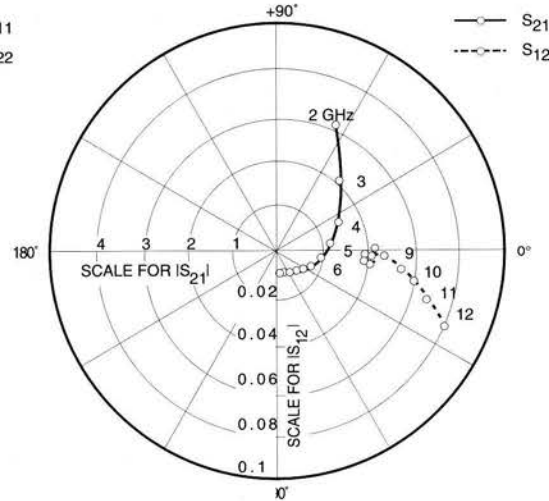
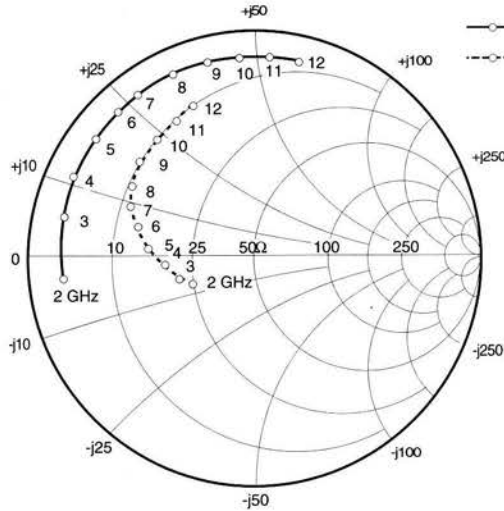
OUTPUT POWER & IM_3 vs. INPUT POWER



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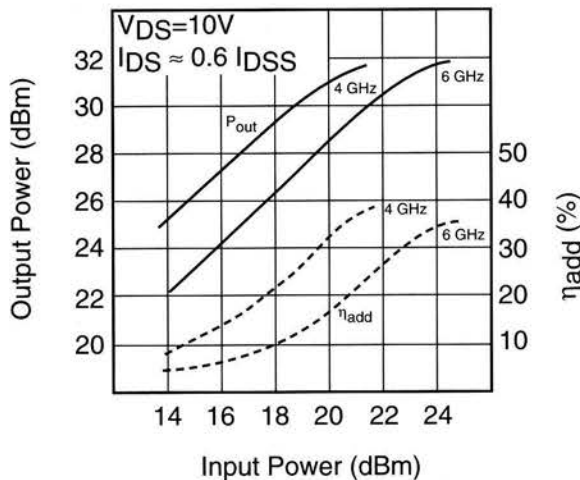


S-PARAMETERS

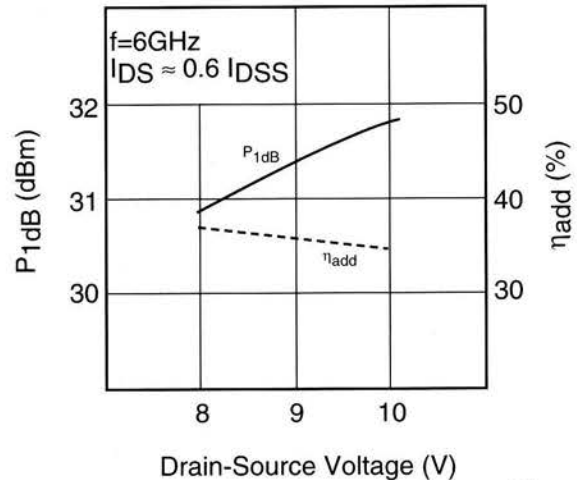
$V_{DS} = 10V, I_{DS} = 360mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.852	-94.3	9.235	125.6	.033	37.0	.222	-116.9
1000	.959	-138.0	5.805	96.6	.042	17.2	.285	-143.0
2000	.859	-173.6	3.086	65.5	.043	1.7	.343	-159.2
3000	.861	167.9	2.045	43.9	.041	-5.1	.399	-167.3
4000	.863	153.5	1.489	24.3	.039	-7.7	.459	-176.2
5000	.873	141.8	1.154	7.2	.038	-6.7	.518	174.9
6000	.887	131.5	.936	-8.7	.039	-4.8	.575	166.1
7000	.894	122.4	.783	-23.0	.041	-3.6	.626	158.0
8000	.900	113.5	.676	-37.3	.046	-2.4	.671	149.4
9000	.895	104.1	.586	-51.3	.052	-6.3	.700	139.8
10000	.891	94.6	.521	-64.5	.059	-11.1	.716	129.8
11000	.898	85.4	.476	-76.5	.067	-17.0	.736	120.0
12000	.909	75.6	.449	-89.5	.079	-24.3	.761	109.8

OUTPUT POWER vs. INPUT POWER



P1dB & ηadd vs. VDS



Case Style "WF" Metal-Ceramic Hermetic Package

