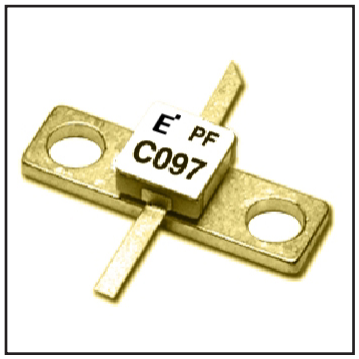
FLC097WF

C-Band Power GaAs FET

FEATURES

- High Output Power: P_{1dB} = 28.8dBm (Typ.)
- High Gain: G_{1dB} = 8.5dB(Typ.)
- High PAE: η_{add} = 35%(Typ.)
- Proven Reliability
- Hermetic Metal/Ceramic Package



DESCRIPTION

The FLC097WF is a power GaAs FET that is designed for general purpose applications in the C-Band frequency range as it provides superior power, gain, and efficiency.

Eudyna stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Ambient Temperature Ta=25°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°C	4.16	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		175	°C

Eudyna 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 4.8 and -0.5 mA respectively with gate resistance of 400Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

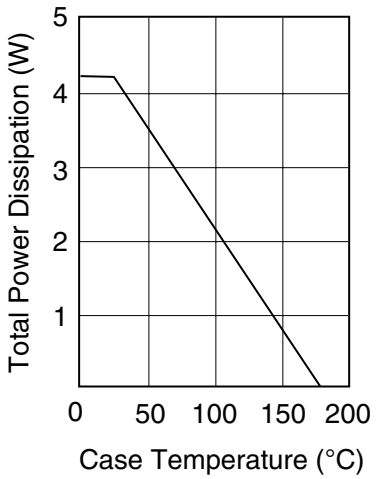
Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	300	450	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 200mA	-	150	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} =15mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -15μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS} (Typ.), f = 6 GHz	27.5	28.8	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.5	8.5	-	dB
Power-added Efficiency	η_{add}		-	35	-	%
Thermal Resistance	R_{th}	Channel to Case	-	25	36	°C/W

CASE STYLE: WF

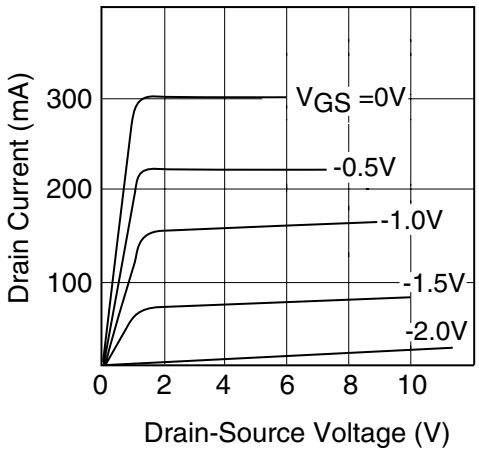
G.C.P.: Gain Compression Point

Eudyna

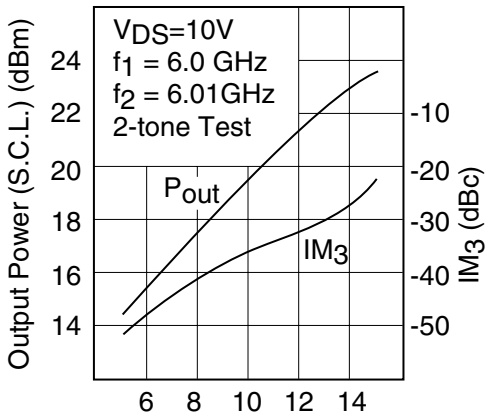
POWER DERATING CURVE



DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

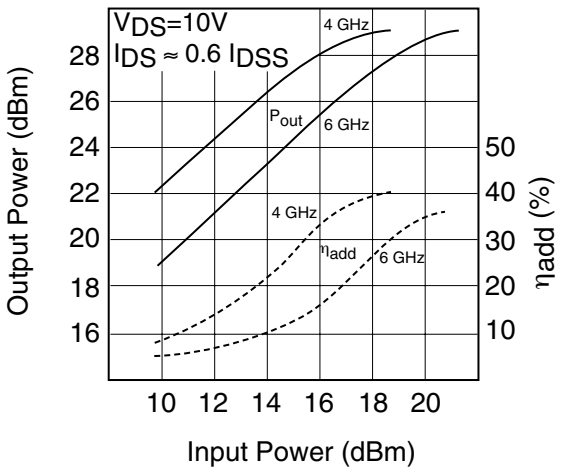


OUTPUT POWER & IM_3 vs. INPUT POWER

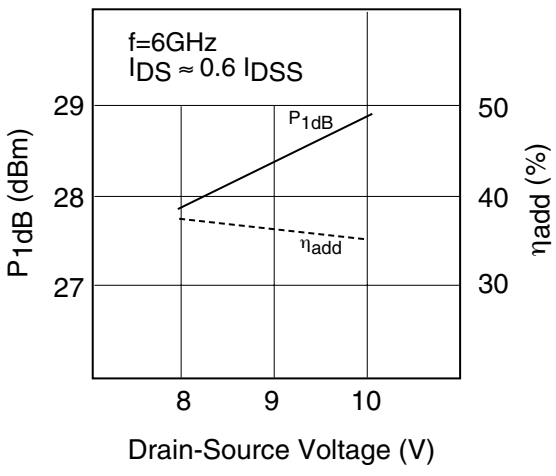


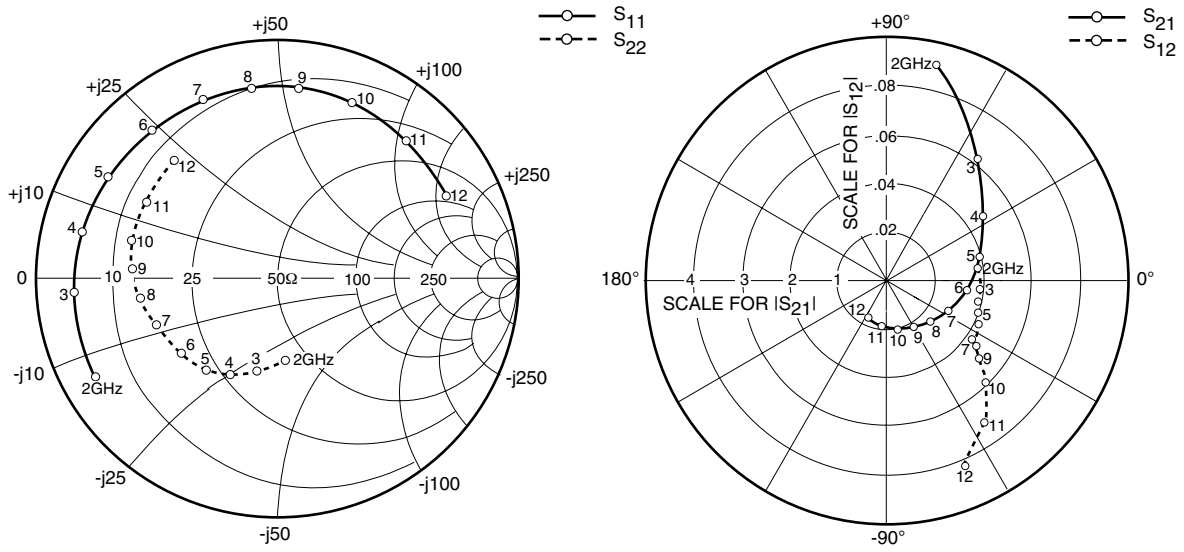
S.C.L.: Single Carrier Level

OUTPUT POWER vs. INPUT POWER



P_{1dB} & η_{add} vs. V_{DS}





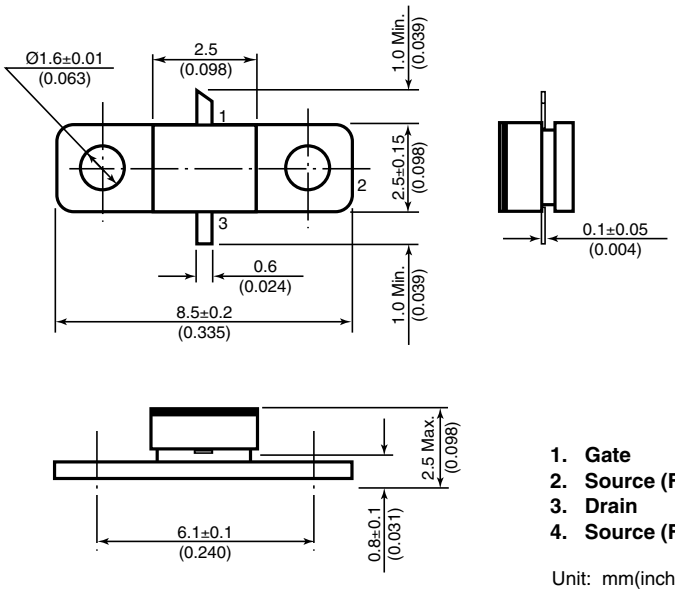
S-PARAMETERS

V_{DS} = 10V, I_{DS} = 180mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.950	-61.4	10.087	140.8	.022	55.5	.399	-31.1
2000	.857	-151.4	4.537	76.8	.038	7.0	.344	-83.9
3000	.841	-176.1	3.114	52.9	.039	-6.0	.392	-102.2
4000	.832	166.3	2.398	33.0	.039	-13.1	.445	-115.6
5000	.825	148.7	1.978	13.6	.040	-19.6	.480	-127.7
6000	.820	129.8	1.681	-6.3	.042	-26.4	.506	-142.2
7000	.817	112.1	1.418	-25.9	.043	-34.9	.534	-158.6
8000	.807	97.6	1.212	-43.2	.045	-36.2	.571	-172.0
9000	.804	83.6	1.080	-59.4	.050	-40.8	.603	176.6
10000	.799	67.2	1.011	-76.6	.059	-45.9	.620	165.2
11000	.794	47.0	.954	-96.5	.071	-55.4	.629	149.3
12000	.784	26.9	.864	-117.0	.082	-66.9	.649	130.8

Case Style "WF"

Metal-Ceramic Hermetic Package



1. **Gate**
2. **Source (Flange)**
3. **Drain**
4. **Source (Flange)**

Unit: mm(inches)