

FLC167WF

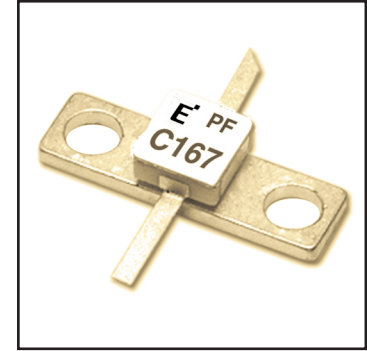
C-Band Power GaAs FET

FEATURES

- High Output Power: $P_{1dB} = 31.8\text{dBm(Typ.)}$
- High Gain: $G_{1dB} = 7.5\text{dB(Typ.)}$
- High PAE: $\eta_{add} = 35\%\text{(Typ.)}$
- Proven Reliability
- Hermetic Metal/Ceramic Package

DESCRIPTION

The FLC167WF 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's stringent Quality Assurance Program assures the highest reliability and consistent performance.

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	$^\circ\text{C}$

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

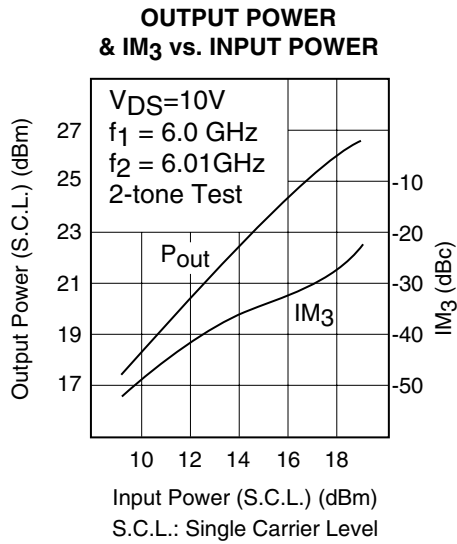
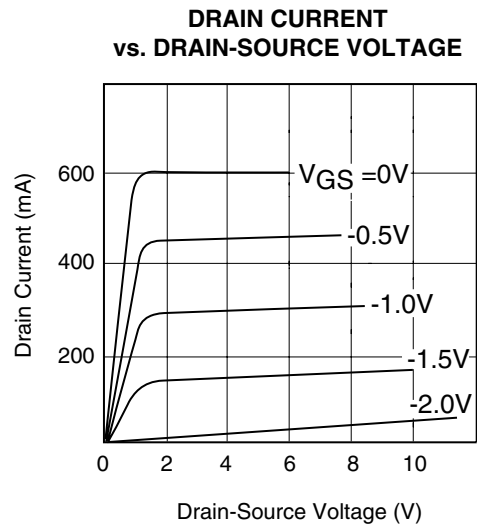
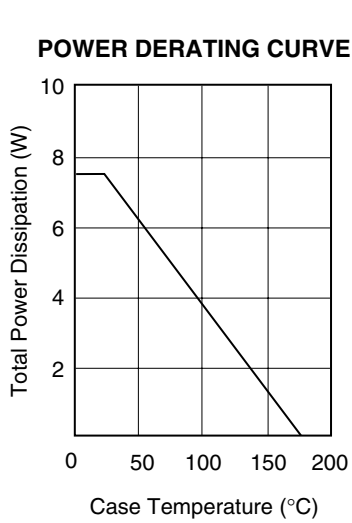
1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 9.6 and -1.0 mA respectively with gate resistance of 200Ω .
3. The operating channel temperature (T_{ch}) should not exceed 145°C .

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

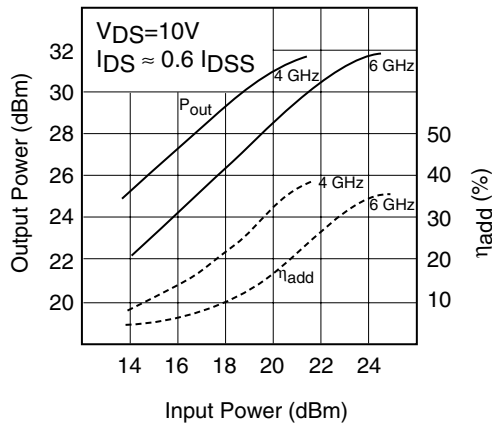
Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	600	900	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 400\text{mA}$	-	300	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 30\text{mA}$	-1.0	-2.0	-3.5	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	$^\circ\text{C/W}$

CASE STYLE: WF

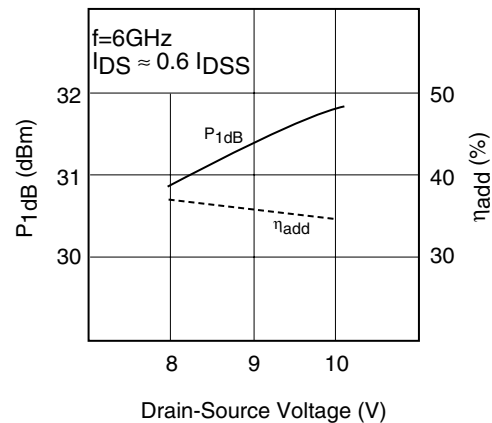
G.C.P.: Gain Compression Point



OUTPUT POWER & η_{add} vs. INPUT POWER

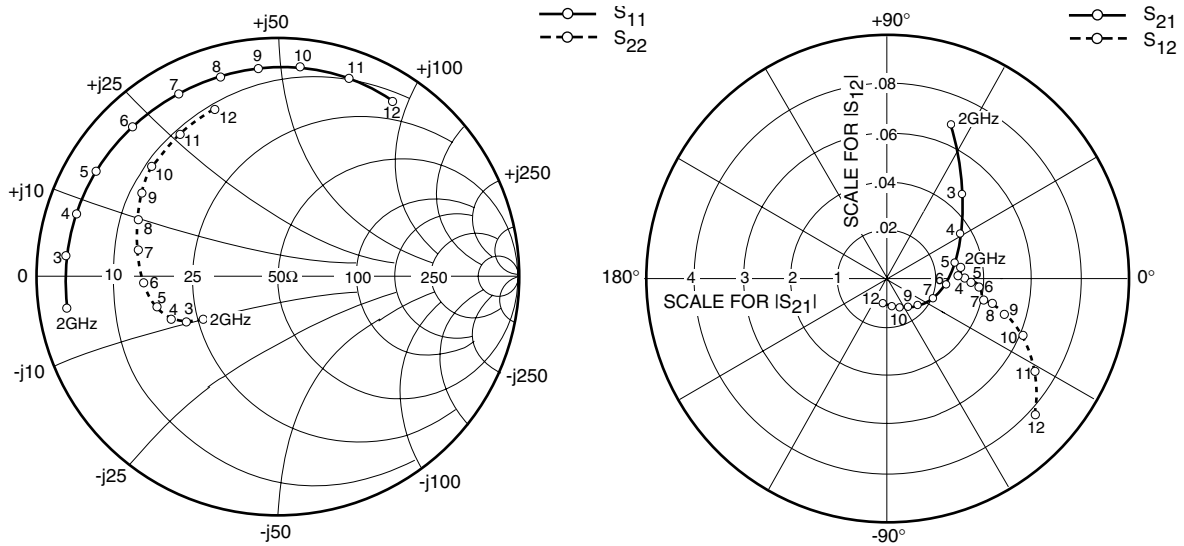


P_{1dB} & η_{add} vs. V_{DS}



FLC167WF

C-Band Power GaAs FET



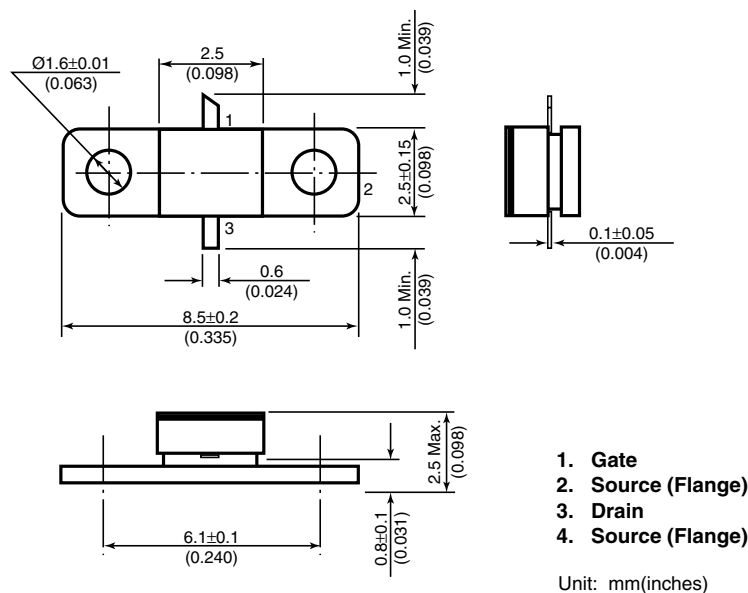
S-PARAMETERS

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

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.922	-104.6	11.190	119.4	.025	36.5	.234	-124.6
1000	.895	-142.7	6.587	94.0	.029	18.2	.290	-142.9
2000	.887	-171.4	3.424	67.1	.030	5.3	.360	-150.5
3000	.884	174.4	2.295	47.9	.030	1.0	.423	-153.5
4000	.877	163.1	1.762	30.6	.031	0.1	.475	-158.3
5000	.873	149.8	1.452	13.0	.034	-1.9	.511	-165.9
6000	.870	134.2	1.227	-6.0	.038	-5.5	.547	-177.6
7000	.867	118.6	1.019	-24.9	.040	-12.7	.585	168.5
8000	.860	106.0	.843	-40.9	.044	-13.1	.625	157.3
9000	.866	95.5	.725	-54.7	.051	-17.7	.664	148.4
10000	.875	84.0	.656	-69.2	.060	-22.9	.692	138.4
11000	.877	70.5	.596	-85.7	.072	-32.1	.717	124.3
12000	.871	57.3	.525	-101.4	.082	-42.2	.747	110.6

Case Style "WF"

Metal-Ceramic Hermetic Package



For further information please contact:

Eudyna Devices USA Inc.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
TEL: (408) 232-9500
FAX: (408) 428-9111
www.us.eudyna.com

Eudyna Devices Europe Ltd.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

Eudyna Devices Asia Pte Ltd.

Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd.
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

Eudyna Devices Inc.

Sales Division
1, Kanai-cho, Sakae-ku
Yokohama, 244-0845, Japan
TEL: +81-45-853-8156
FAX: +81-45-853-8170

CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

Eudyna Devices Inc. reserves the right to change products and specifications without notice. The information does not convey any license under rights of Eudyna Devices Inc. or others.

© 2004 Eudyna Devices USA Inc.
Printed in U.S.A.