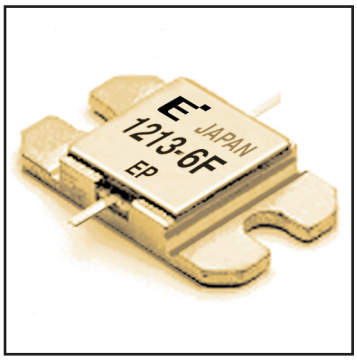
FLM1213-6F

X, Ku-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 37.5dBm (Typ.)
- High Gain: G_{1dB} = 7.0dB (Typ.)
- High PAE: η_{add} = 27% (Typ.)
- Low IM_3 = -45dBc@Po = 25dBm
- Broad Band: 12.7 ~ 13.2GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed



DESCRIPTION

The FLM1213-6F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

Eudyna's 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	31.2	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		175	°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 26.0 and -2.8 mA respectively with gate resistance of 100Ω.

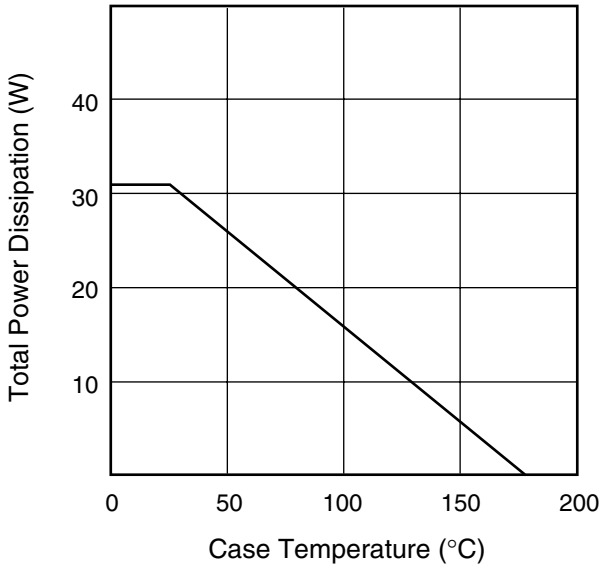
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	2800	4200	mA
Transconductance	gm	V_{DS} = 5V, I_{DS} = 1800mA	-	2350	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 120mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -120μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS}(Typ.), f = 12.7 ~ 13.2GHz, Z_S = Z_L = 50Ω	36.5	37.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.0	7.0	-	dB
Drain Current	I_{dsr}		-	1800	2100	mA
Power-Added Efficiency	η_{add}		-	27	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 13.2GHz, Δf = 10MHz 2-Tone Test Pout = 25dBm S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	4.0	4.5	°C/W

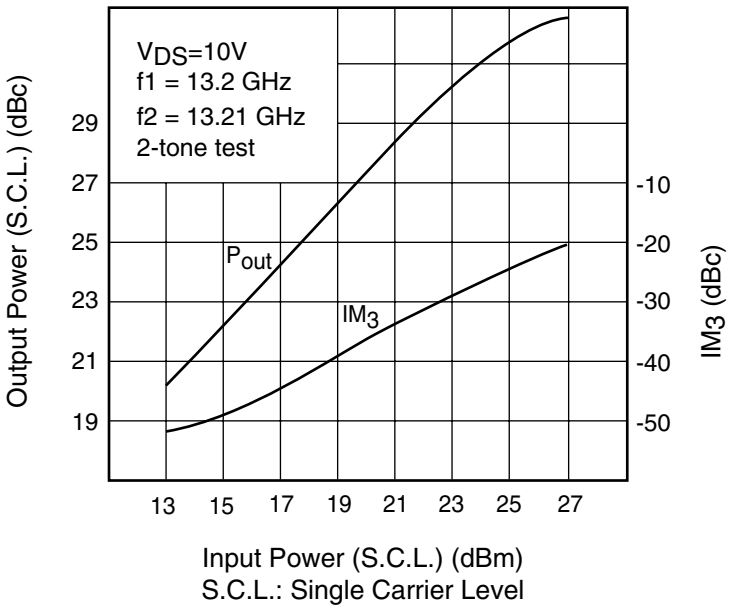
CASE STYLE: IA

G.C.P.: Gain Compression Point

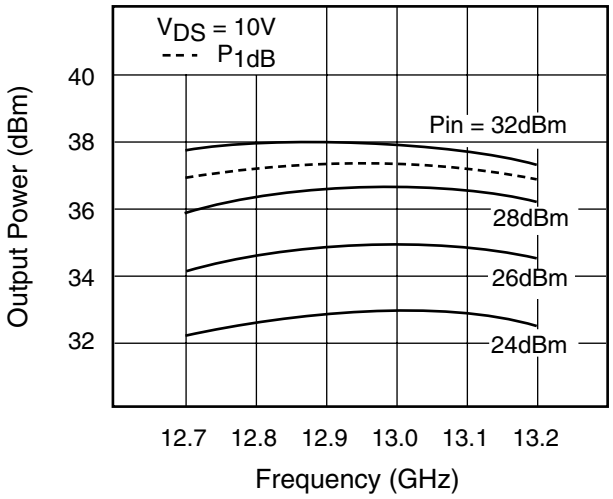
POWER DERATING CURVE



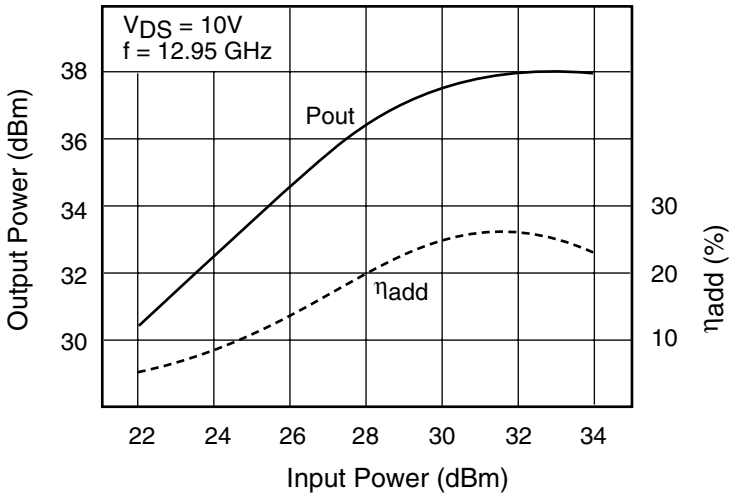
OUTPUT POWER & IM_3 vs. INPUT POWER

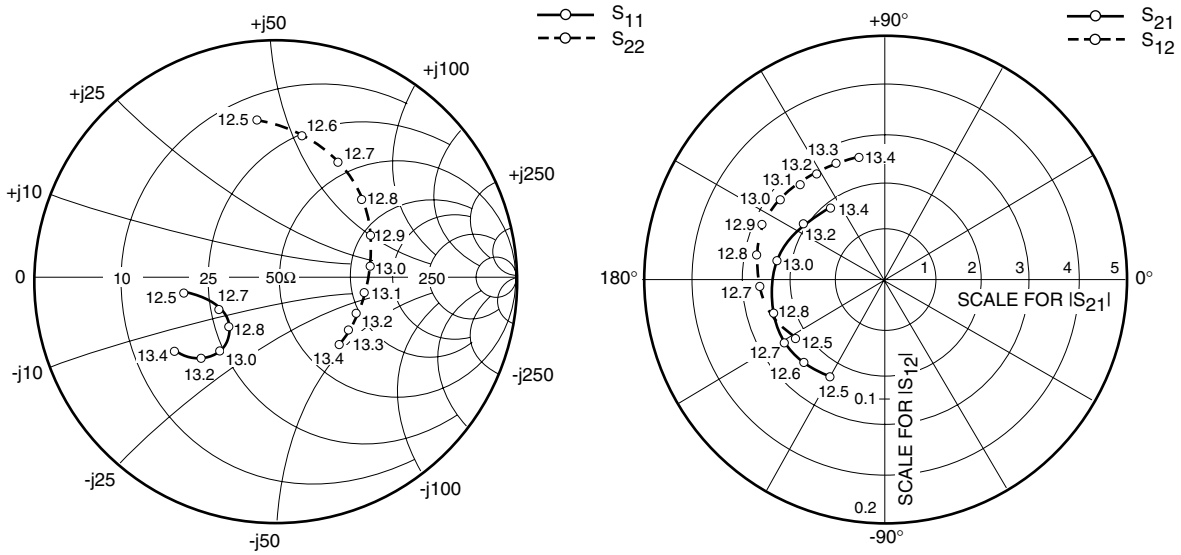


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

V_{DS} = 10V, I_{DS} = 1800mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
12500	.363	-170.0	2.314	-120.0	.089	-147.7	.666	96.7
12600	.292	-162.8	2.423	-134.4	.098	-162.0	.605	79.7
12700	.259	-147.8	2.485	-149.4	.106	-177.7	.549	61.7
12800	.283	-134.2	2.462	-163.9	.109	167.6	.483	42.8
12900	.331	-127.7	2.388	-177.9	.111	154.2	.430	23.9
13000	.381	-127.4	2.291	169.6	.111	142.7	.398	6.7
13100	.426	-130.4	2.171	157.7	.108	131.1	.374	-10.3
13200	.467	-133.5	2.065	146.3	.107	121.0	.365	-24.0
13300	.493	-138.1	1.948	136.7	.106	112.3	.373	-37.4
13400	.509	-143.1	1.858	126.8	.105	102.8	.386	-47.0

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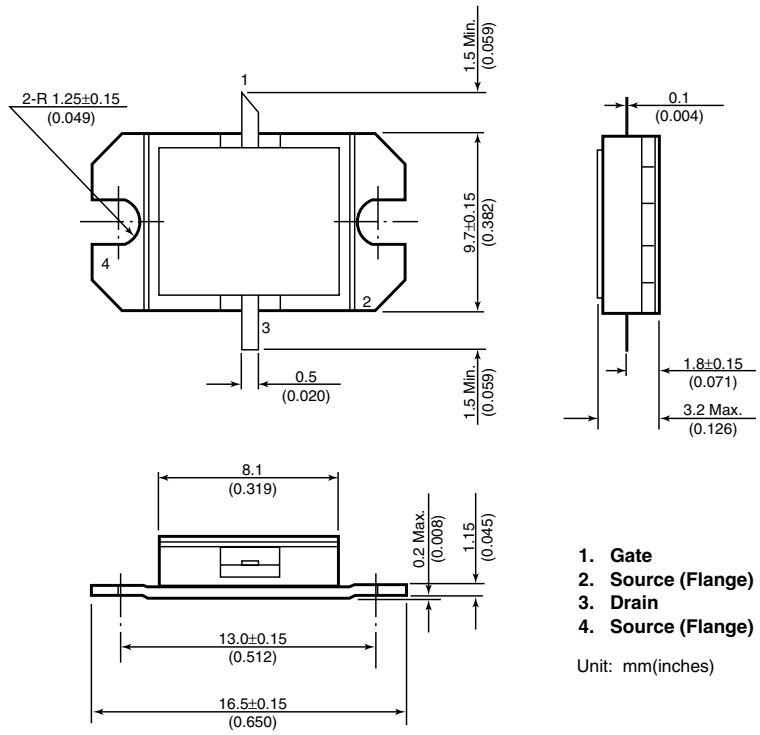
Case Style "IA"

Metal-Ceramic Hermetic Package



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

Unit: mm(inches)

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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.**

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