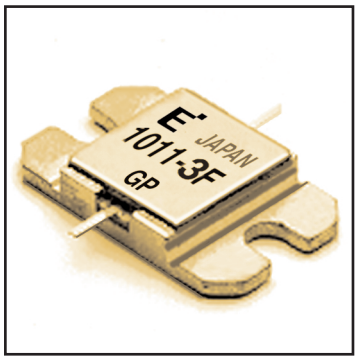
FLM1011-3F

X, Ku-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 35.0dBm (Typ.)
- High Gain: G_{1dB} = 7.5dB (Typ.)
- High PAE: η_{add} = 29% (Typ.)
- Low IM_3 = -46dBc@Po = 24.0dBm
- Broad Band: 10.7 ~ 11.7GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed



DESCRIPTION

The FLM1011-3F 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	25.0	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 13.0 and -1.4 mA respectively with gate resistance of 100Ω.

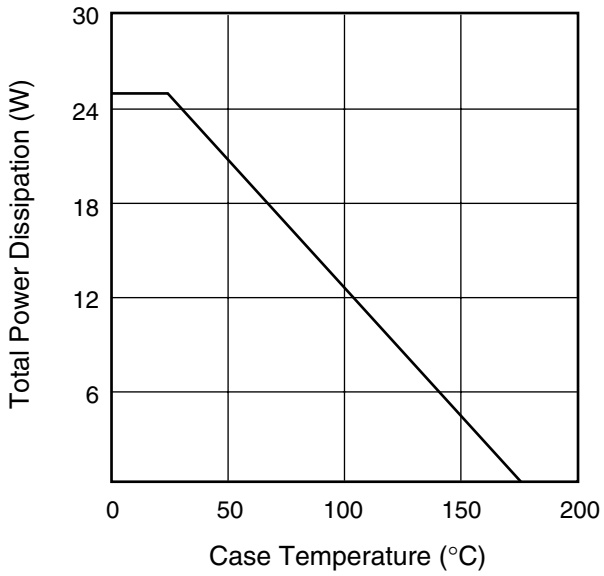
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	1400	2100	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 900mA	-	1300	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 70mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -70μA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS}(Typ.), f = 10.7 ~ 11.7 GHz, Z_S = Z_L = 50Ω	34.0	35.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.5	7.5	-	dB
Drain Current	I_{dsr}		-	900	1100	mA
Power-Added Efficiency	η_{add}		-	29	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 11.7GHz, Δf = 10MHz 2-Tone Test Pout = 24.0dBm S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	5.0	6.0	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	66	°C

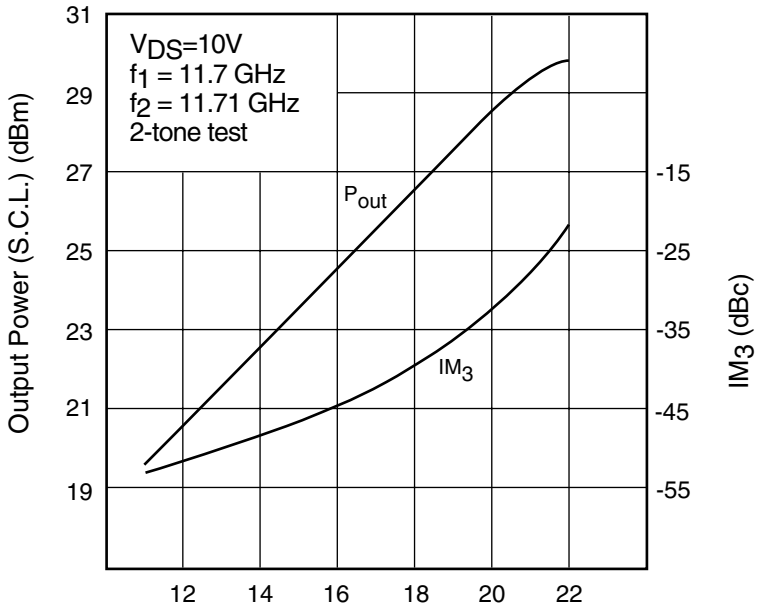
CASE STYLE: IA

G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

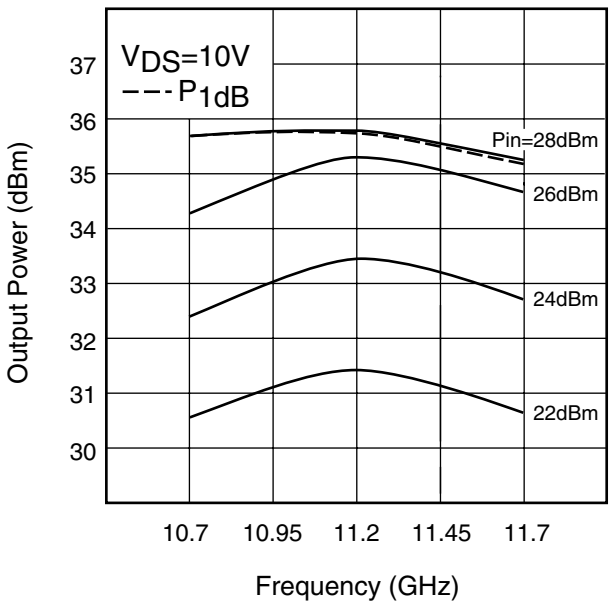
POWER DERATING CURVE



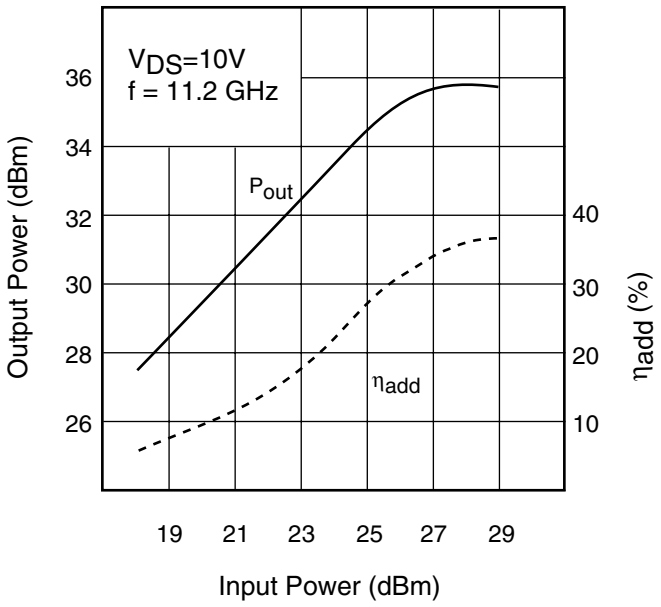
OUTPUT POWER & IM3 vs. INPUT POWER

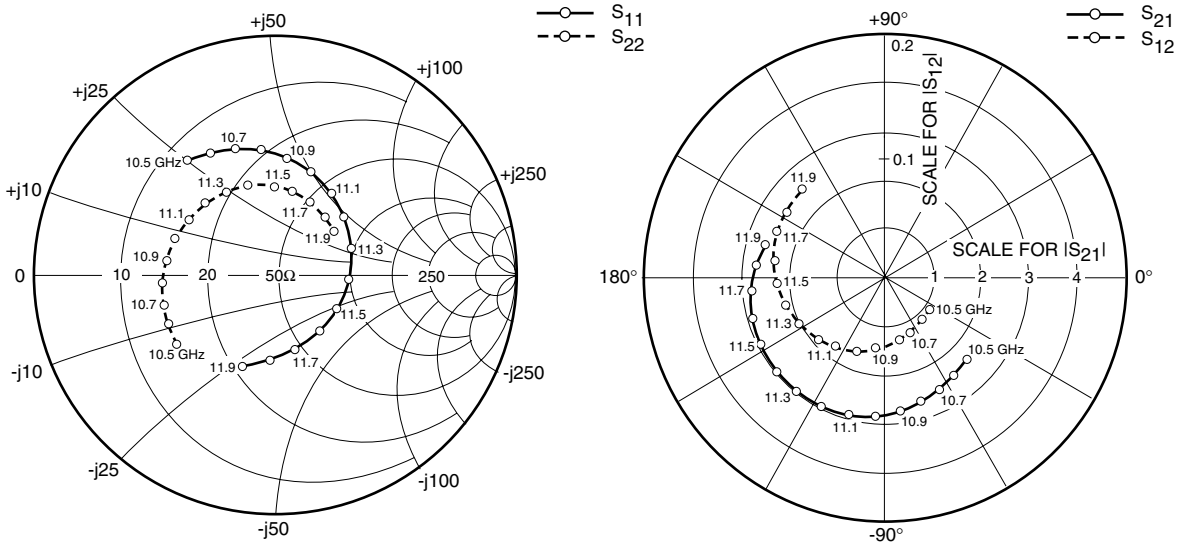


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

V_{DS} = 10V, I_{DS} = 900mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10500	.606	127.5	2.381	-45.7	.045	-34.6	.500	-144.6
10600	.586	118.0	2.475	-54.3	.047	-47.4	.491	-154.2
10700	.556	107.5	2.574	-63.8	.050	-64.6	.474	-165.0
10800	.532	96.4	2.663	-73.4	.053	-76.4	.466	-175.9
10900	.493	84.3	2.767	-83.3	.058	-98.2	.452	172.4
11000	.457	71.3	2.859	-94.1	.064	-110.4	.442	159.8
11100	.413	55.9	2.929	-105.0	.070	-126.2	.430	146.9
11200	.375	38.7	2.984	-116.4	.075	-137.1	.424	133.6
11300	.333	19.7	2.995	-127.8	.081	-151.9	.411	120.4
11400	.301	-3.4	2.992	-139.6	.086	-164.5	.394	106.6
11500	.291	-28.4	2.935	-151.4	.089	-177.0	.375	92.5
11600	.297	-51.8	2.861	-162.7	.093	171.1	.361	79.1
11700	.320	-74.6	2.776	-173.8	.096	157.2	.341	65.6
11800	.354	-93.8	2.681	175.3	.097	147.3	.320	50.6
11900	.399	-109.4	2.565	164.8	.099	134.2	.305	37.7

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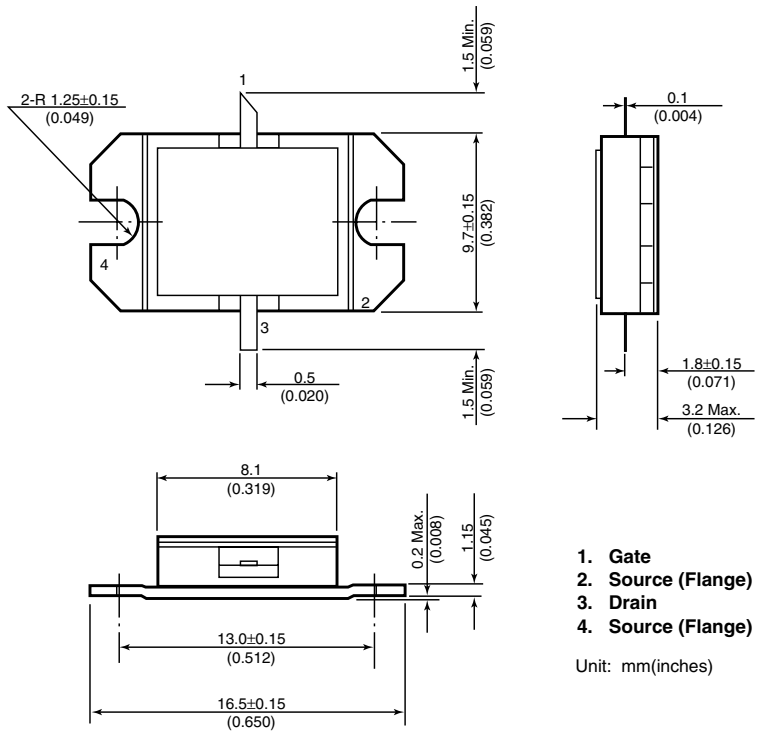
Case Style "IA"

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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