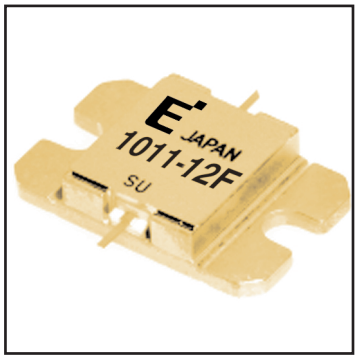
FLM1011-12F

X, Ku-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 40.5dBm (Typ.)
- High Gain: G_{1dB} = 6.0dB (Typ.)
- High PAE: η_{add} = 25% (Typ.)
- Low IM_3 = -45dBc@Po = 29.5dBm
- Broad Band: 10.7 ~ 11.7GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed



DESCRIPTION

The FLM1011-12F 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	57.6	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 32.0 and -5.6 mA respectively with gate resistance of 50Ω.

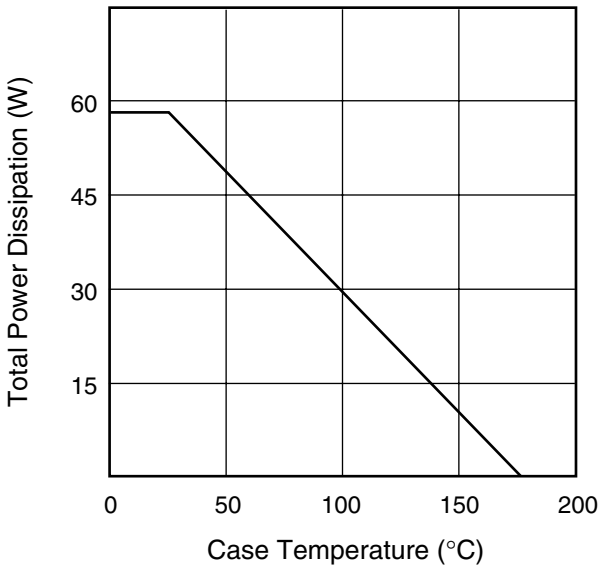
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	6000	9000	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 3600mA	-	5000	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 300mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -340μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V f = 10.7 ~ 11.7 GHz I_{DS} = 0.6 I_{DSS}(Typ.) Z_S = Z_L = 50Ω	39.5	40.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		5.0	6.0	-	dB
Drain Current	I_{dsr}		-	3600	4500	mA
Power-Added Efficiency	η_{add}		-	25	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 11.7GHz, Δf = 10MHz 2-Tone Test Pout = 29.5 dBm S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	2.3	2.6	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	80	°C

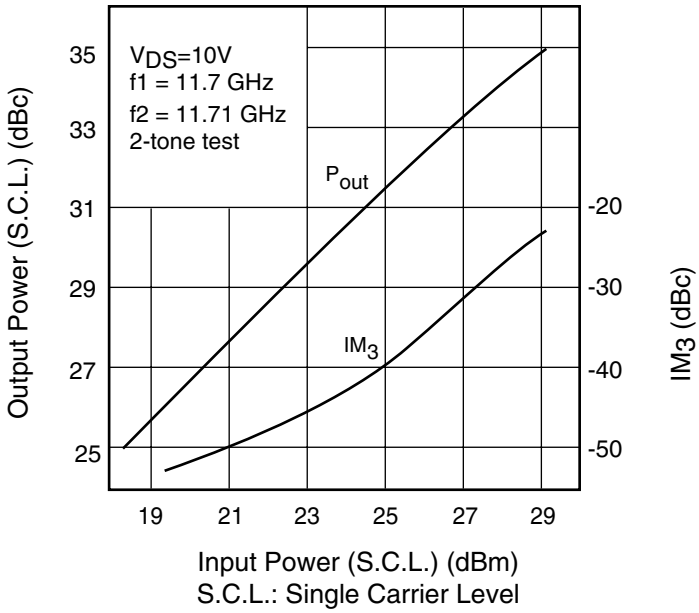
CASE STYLE: IB

G.C.P.: Gain Compression Point

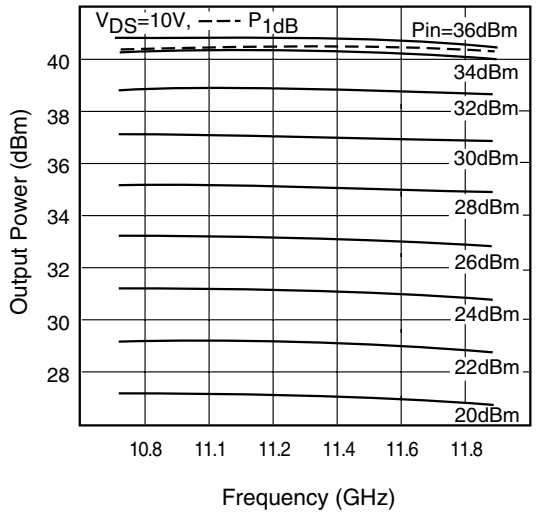
POWER DERATING CURVE



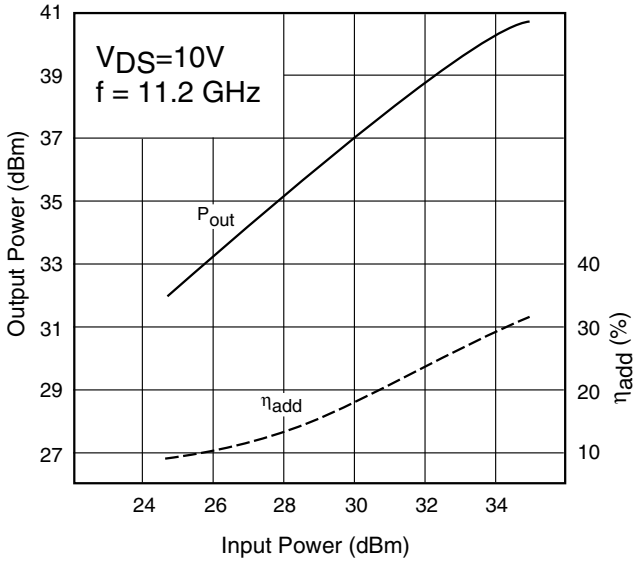
OUTPUT POWER & IM3 vs. INPUT POWER

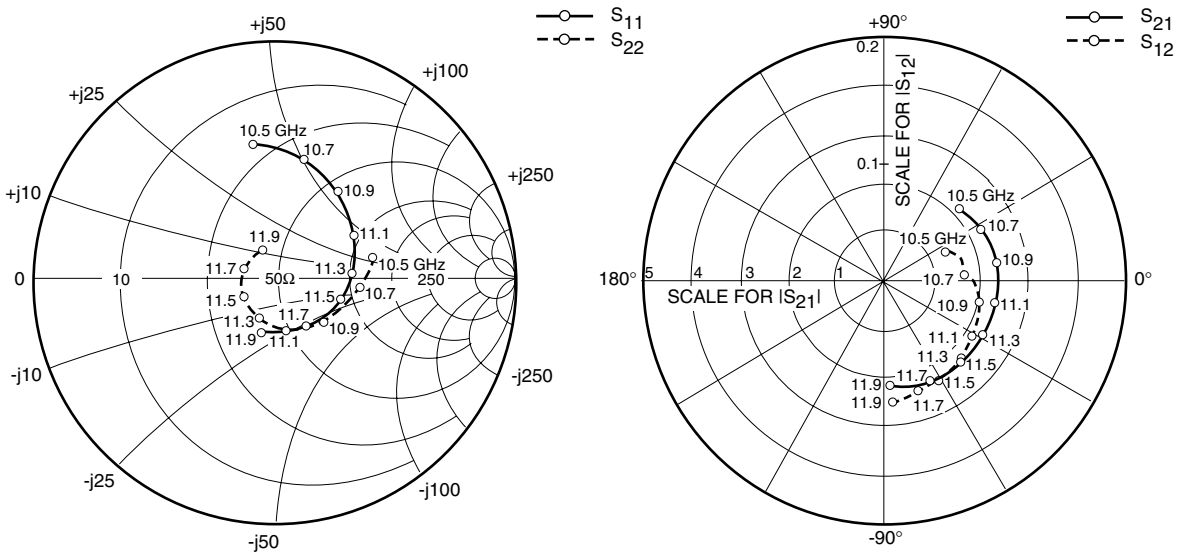


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





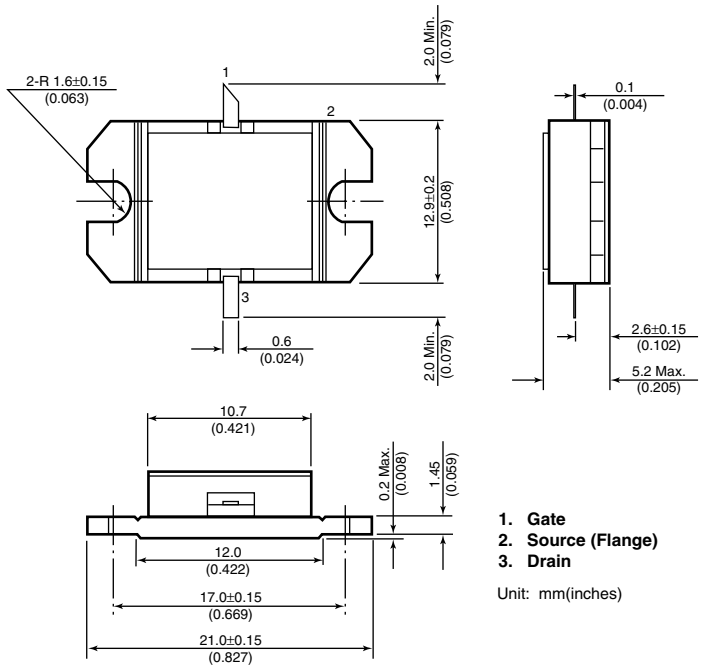
S-PARAMETERS

V_{DS} = 10V, I_{DS} = 3600mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10500	.575	98.6	2.142	44.3	.054	23.7	.389	6.8
10600	.549	87.9	2.158	36.2	.065	19.5	.362	-3.3
10700	.522	77.4	2.223	28.8	.066	3.2	.315	-14.9
10800	.487	66.0	2.316	18.9	.074	-1.4	.278	-29.5
10900	.457	55.0	2.337	8.9	.078	-14.3	.247	-44.1
11000	.421	43.3	2.326	-1.7	.083	-19.7	.222	-61.7
11100	.387	31.8	2.263	-11.0	.085	-32.4	.200	-78.4
11200	.355	19.5	2.257	-19.0	.086	-38.8	.180	-98.7
11300	.321	7.4	2.282	-27.7	.089	-47.0	.162	-116.7
11400	.292	-5.8	2.302	-37.1	.092	-55.5	.148	-137.7
11500	.265	-20.2	2.269	-47.2	.093	-61.9	.136	-161.2
11600	.240	-37.0	2.247	-56.4	.092	-70.6	.136	177.0
11700	.219	-55.9	2.235	-66.2	.098	-78.0	.139	155.0
11800	.205	-78.7	2.204	-77.3	.097	-86.7	.137	133.9
11900	.211	-103.2	2.117	-87.2	.101	-96.5	.137	111.5

Case Style "IB"

Metal-Ceramic Hermetic Package



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

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.**