

# FLM1011-6F

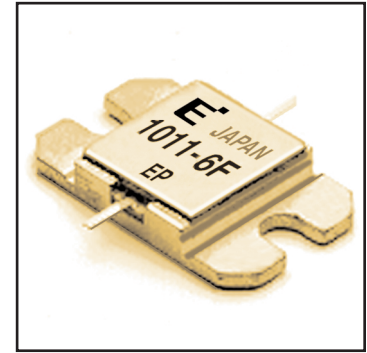
X, Ku-Band Internally Matched FET

## FEATURES

- High Output Power:  $P_{1dB} = 37.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 7.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 28\%$  (Typ.)
- Low  $IM_3 = -45\text{dBc}$  @  $P_o = 25\text{dBm}$
- Broad Band: 10.7 ~ 11.7GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed

## DESCRIPTION

The FLM1011-6F 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 $T_a=25^\circ\text{C}$ )

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_T$	$T_C = 25^\circ\text{C}$	31.2	W
Storage Temperature	$T_{stg}$		-65 to +175	$^\circ\text{C}$
Channel Temperature	$T_{ch}$		175	$^\circ\text{C}$

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 100 $\Omega$ .

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	2800	4200	mA
Transconductance	$g_m$	$V_{DS} = 5\text{V}, I_{DS} = 1800\text{mA}$	-	2350	-	mS
Pinch-off Voltage	$V_p$	$V_{DS} = 5\text{V}, I_{DS} = 120\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -120\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$		36.5	37.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$	$V_{DS} = 10\text{V},$ $I_{DS} = 0.6 I_{DSS}(\text{Typ.}),$ $f = 10.7 \sim 11.7 \text{GHz},$ $Z_S = Z_L = 50\Omega$	6.5	7.5	-	dB
Drain Current	$I_{dsr}$		-	1800	2100	mA
Power-Added Efficiency	$\eta_{add}$		-	28	-	%
Gain Flatness	$\Delta G$		-	-	$\pm 0.6$	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 11.7\text{GHz}, \Delta f = 10\text{MHz}$ 2-Tone Test $P_{out} = 25\text{dBm S.C.L.}$	-42	-45	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	4.0	4.5	$^\circ\text{C/W}$

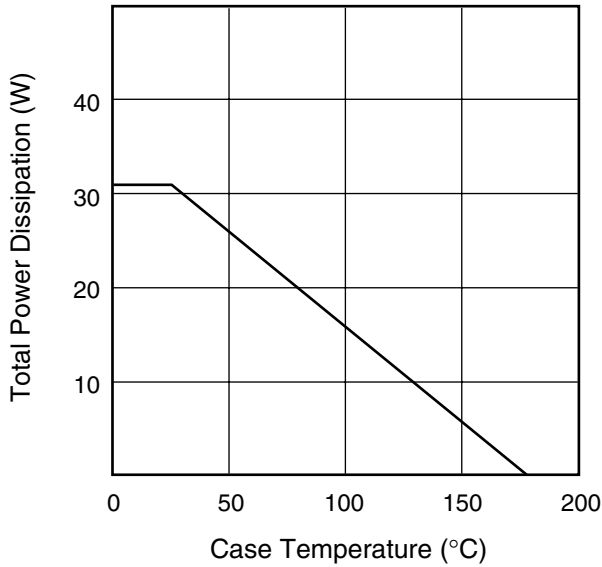
CASE STYLE: IA

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

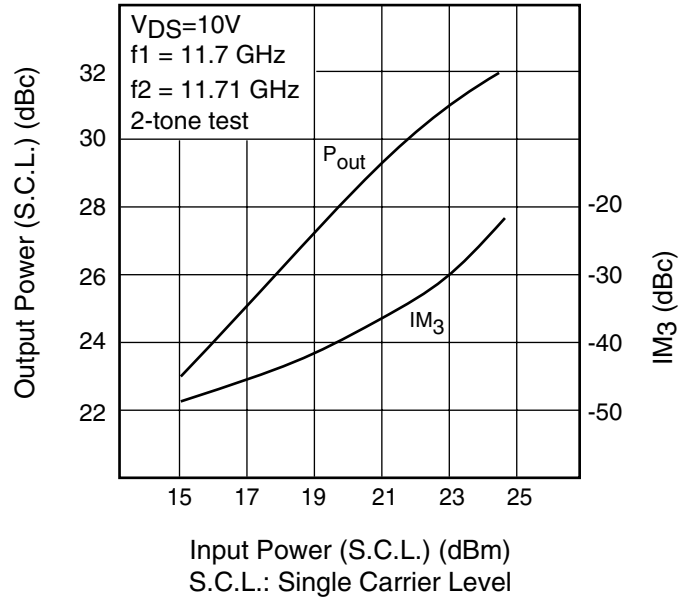
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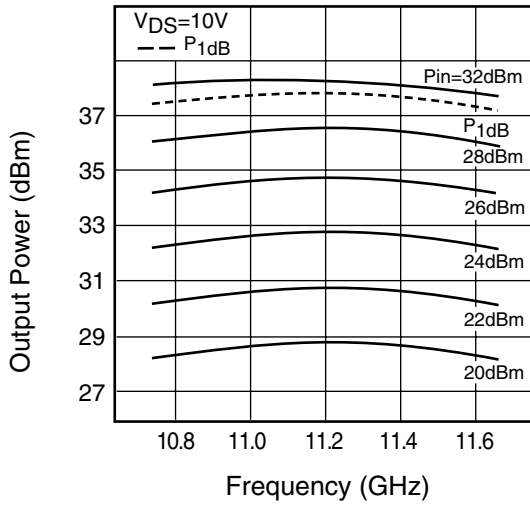
**POWER DERATING CURVE**



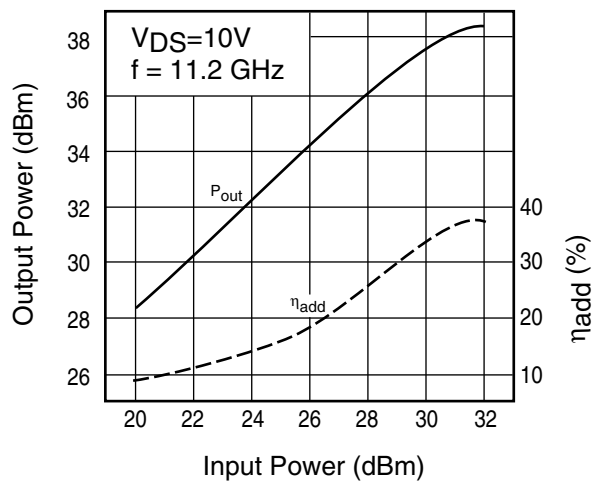
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**



**OUTPUT POWER vs. FREQUENCY**

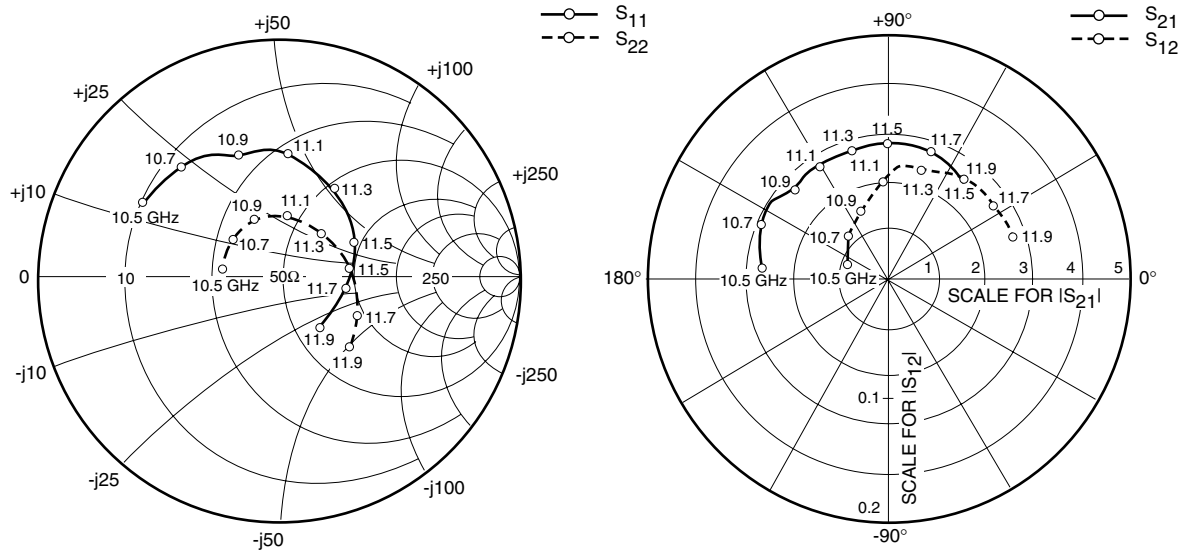


**OUTPUT POWER vs. INPUT POWER**



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X, Ku-Band Internally Matched FET



## S-PARAMETERS

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

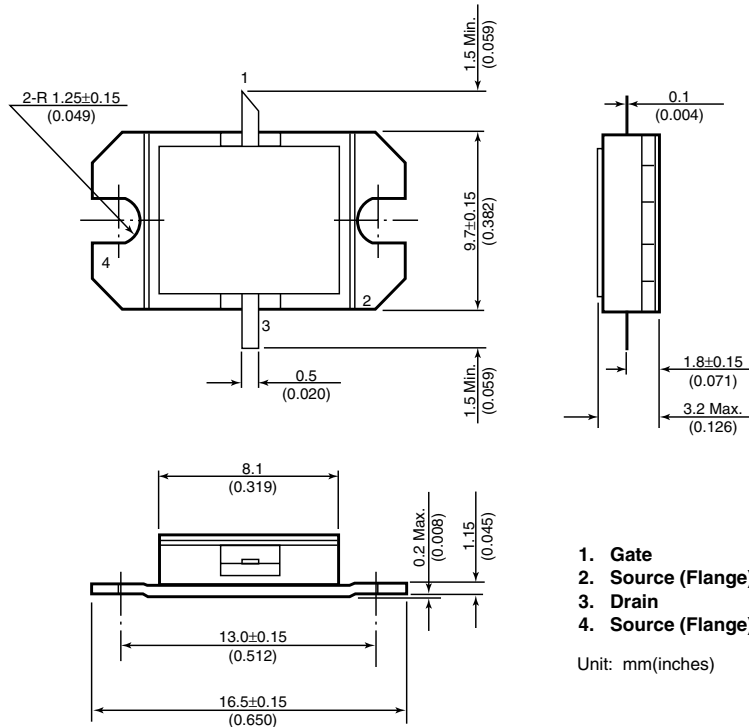
FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10500	.655	149.3	2.654	175.1	.037	160.5	.230	168.6
10600	.639	139.8	2.766	167.0	.039	151.3	.245	151.6
10700	.621	130.3	2.896	157.7	.049	135.2	.264	136.9
10800	.601	120.5	2.899	146.9	.050	127.2	.270	123.0
10900	.580	109.7	2.855	137.6	.060	113.5	.293	111.3
11000	.555	98.4	2.760	128.8	.066	104.6	.284	96.4
11100	.523	85.9	2.685	121.5	.078	93.9	.290	83.8
11200	.488	72.6	2.683	114.7	.086	83.3	.281	67.2
11300	.443	58.8	2.693	107.1	.091	74.1	.282	49.6
11400	.397	42.8	2.736	99.3	.097	62.7	.286	29.7
11500	.350	27.2	2.740	90.6	.099	53.0	.302	11.4
11600	.311	9.3	2.785	82.0	.103	41.7	.315	-5.8
11700	.282	-9.1	2.780	70.9	.103	35.4	.348	-22.4
11800	.259	-30.2	2.663	58.7	.108	25.6	.372	-36.8
11900	.252	-51.0	2.469	49.1	.107	18.6	.396	-48.2

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### Case Style "IA"

#### Metal-Ceramic Hermetic Package



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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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