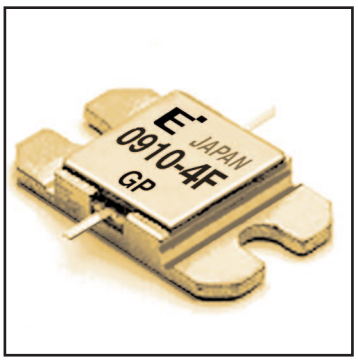
FLM0910-4F

X, Ku-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 36.0dBm (Typ.)
- High Gain: G_{1dB} = 7.5dB (Typ.)
- High PAE: η_{add} = 29% (Typ.)
- Low IM_3 = -46dBc@Po = 25.5dBm
- Broad Band: 9.5 ~ 10.5GHz
- Impedance Matched Zin/Zout = 50Ω



DESCRIPTION

The FLM0910-4F 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 16.0 and -2.2 mA respectively with gate resistance of 100Ω.

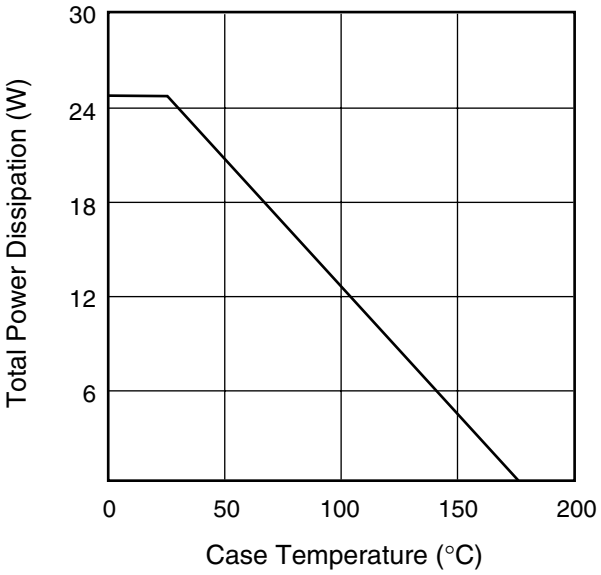
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	1700	2600	mA
Transconductance	gm	V_{DS} = 5V, I_{DS} = 1100mA	-	1700	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 85mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -85μA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} =10V, I_{DS} = 0.65 I_{DSS} (Typ.), f = 9.5 ~10.5 GHz, Z_S=Z_L= 50 ohm	35.5	36.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.5	7.5	-	dB
Drain Current	I_{dsr}		-	1100	1300	mA
Power-added Efficiency	ηadd		-	29	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 10.5 GHz, Δf = 10 MHz 2-Tone Test P_{out} = 25.5dBm 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}	-	-	80	°C

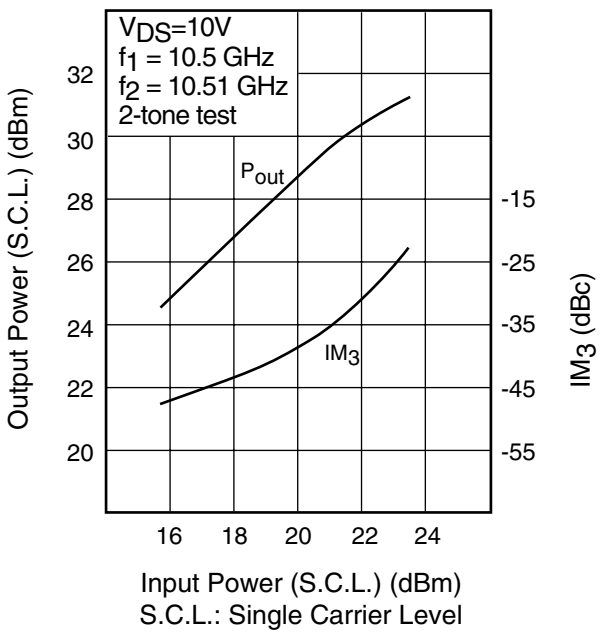
CASE STYLE: IA

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

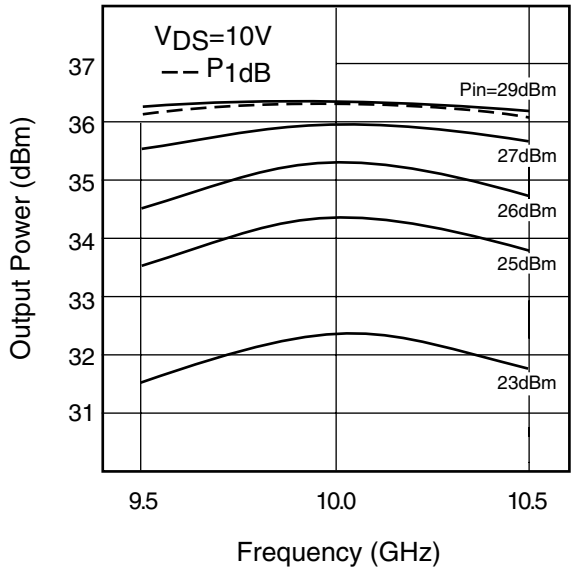
POWER DERATING CURVE



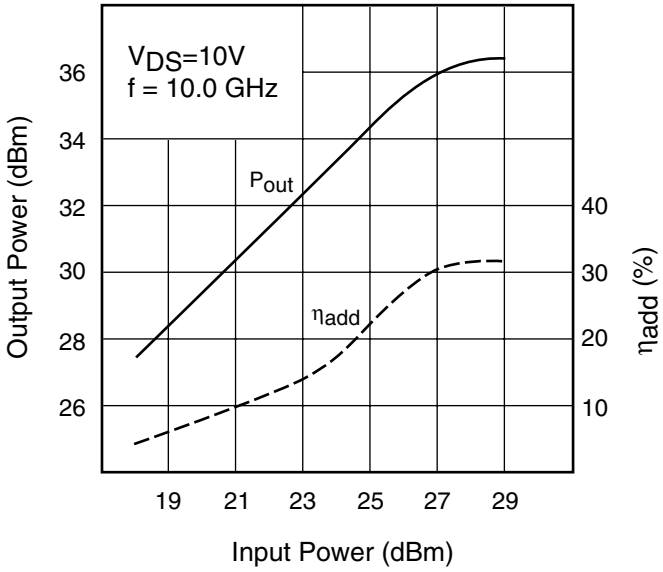
OUTPUT POWER & IM_3 vs. INPUT POWER

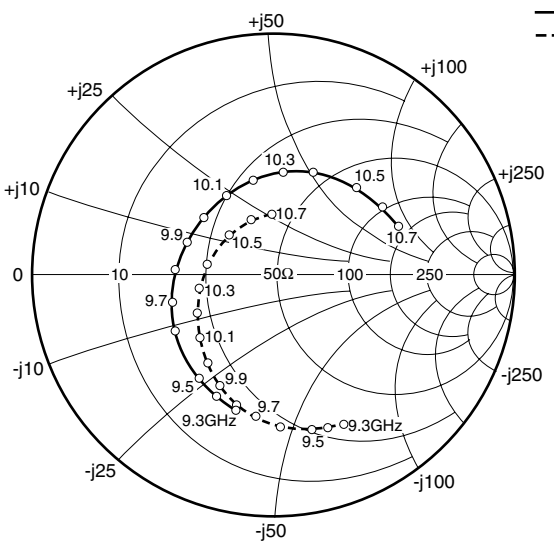


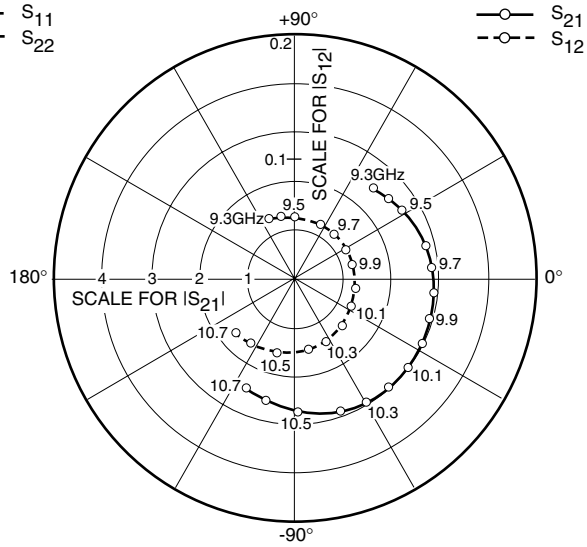
OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER







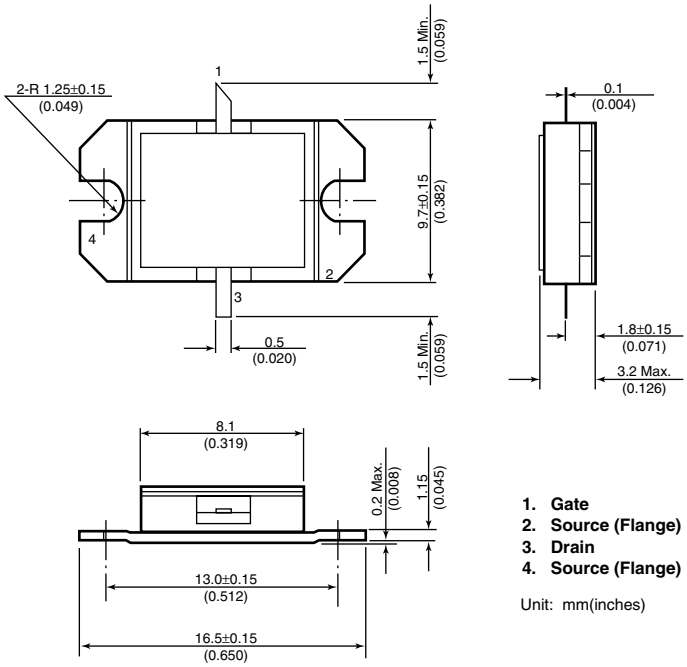
S-PARAMETERS

V_{DS} = 10V, I_{DS} = 1100mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
9300	.585	-106.3	2.447	48.4	.053	113.7	.686	-65.4
9400	.559	-115.3	2.515	40.1	.053	103.2	.677	-70.8
9500	.530	-125.8	2.585	31.9	.051	90.5	.666	-76.4
9600	.467	-150.3	2.763	13.9	.049	62.4	.625	-89.7
9700	.435	-165.5	2.841	4.0	.049	47.4	.596	-97.3
9800	.410	177.6	2.906	-6.5	.046	28.0	.557	-106.1
9900	.385	159.3	2.934	-17.0	.049	13.1	.515	-115.8
10000	.378	140.6	2.946	-27.6	.051	-7.5	.463	-126.6
10100	.381	121.2	2.956	-38.1	.052	-27.6	.409	-139.1
10200	.402	102.4	2.964	-48.9	.053	-45.8	.356	-153.1
10300	.427	85.0	2.943	-59.8	.057	-61.5	.313	-169.5
10400	.456	69.1	2.898	-71.0	.059	-79.3	.277	171.6
10500	.499	46.8	2.742	-89.2	.064	-104.5	.246	138.5
10600	.532	31.7	2.590	-103.3	.065	-124.2	.243	111.8
10700	.553	21.2	2.448	-114.0	.067	-137.7	.251	91.3

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.**