

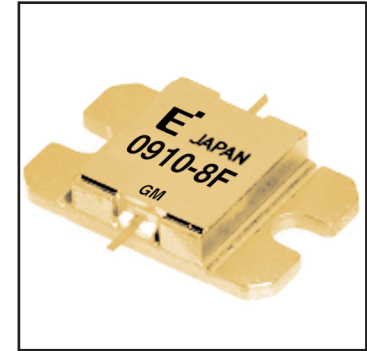
FEATURES

- High Output Power: $P_{1dB} = 39.0\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 7.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 29\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 28.5\text{dBm}$
- Broad Band: 9.5 ~ 10.5GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$

DESCRIPTION

The FLM0910-8F 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	$T_C = 25^\circ\text{C}$	42.8	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 32.0 and -4.4 mA respectively with gate resistance of 100 Ω .

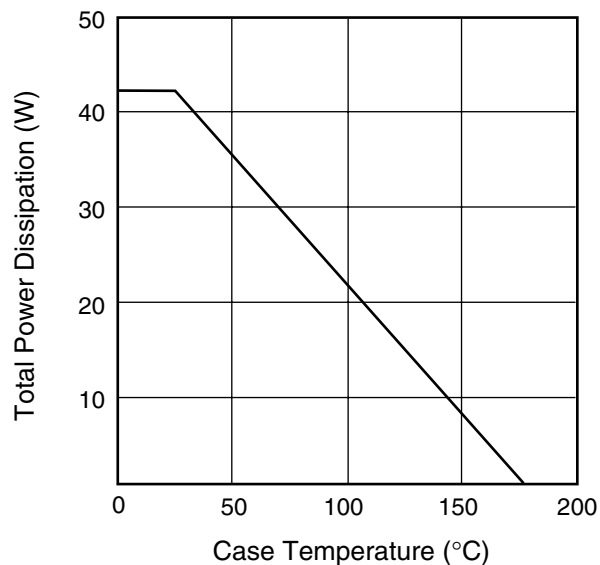
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	3400	5200	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 2200\text{mA}$	-	3400	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 170\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -170\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.65 I_{DSS}$ (Typ.), $f = 9.5 \sim 10.5 \text{ GHz},$ $Z_S = Z_L = 50 \text{ ohm}$	38.5	39.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.5	7.5	-	dB
Drain Current	I_{dsr}		-	2200	2600	mA
Power-added Efficiency	η_{add}		-	29	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 10.5 \text{ GHz}, \Delta f = 10 \text{ MHz}$ 2-Tone Test $P_{out} = 28.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	3.0	3.5	$^\circ\text{C/W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

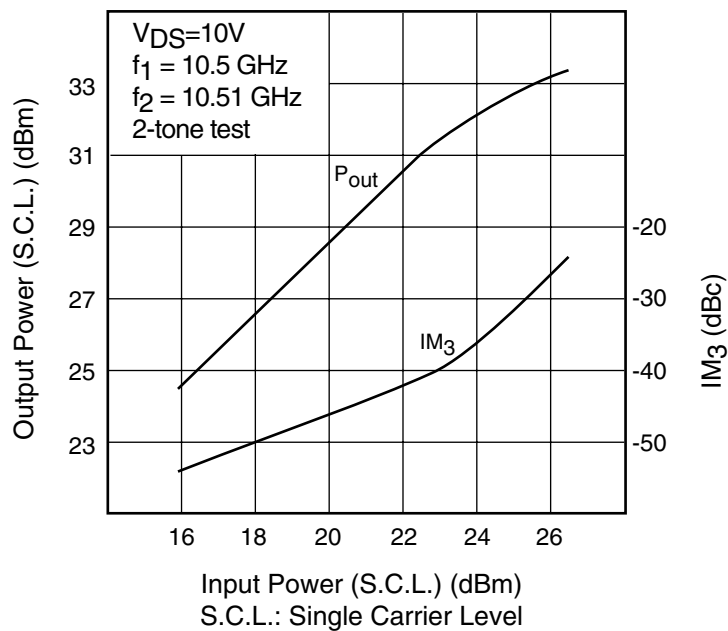
CASE STYLE: IB

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

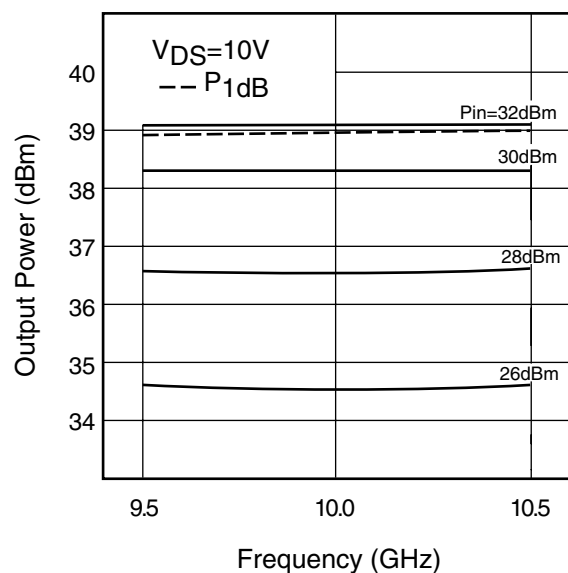
POWER DERATING CURVE



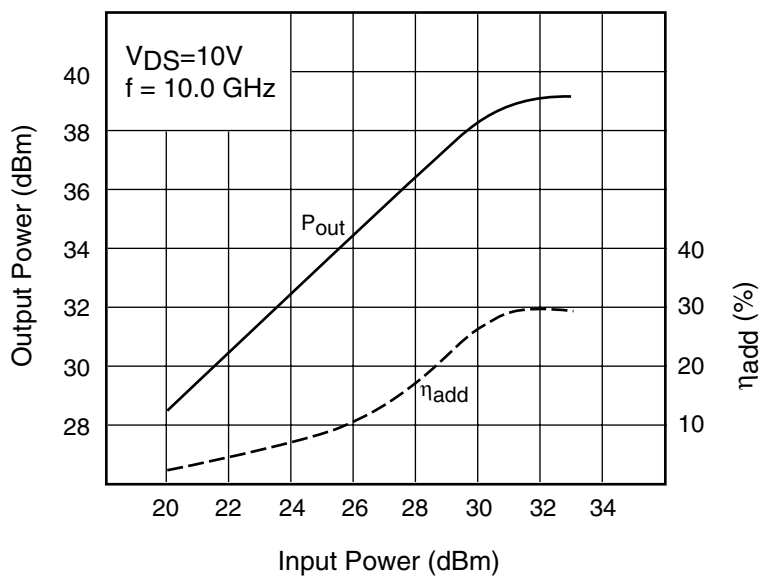
OUTPUT POWER & IM₃ vs. INPUT POWER

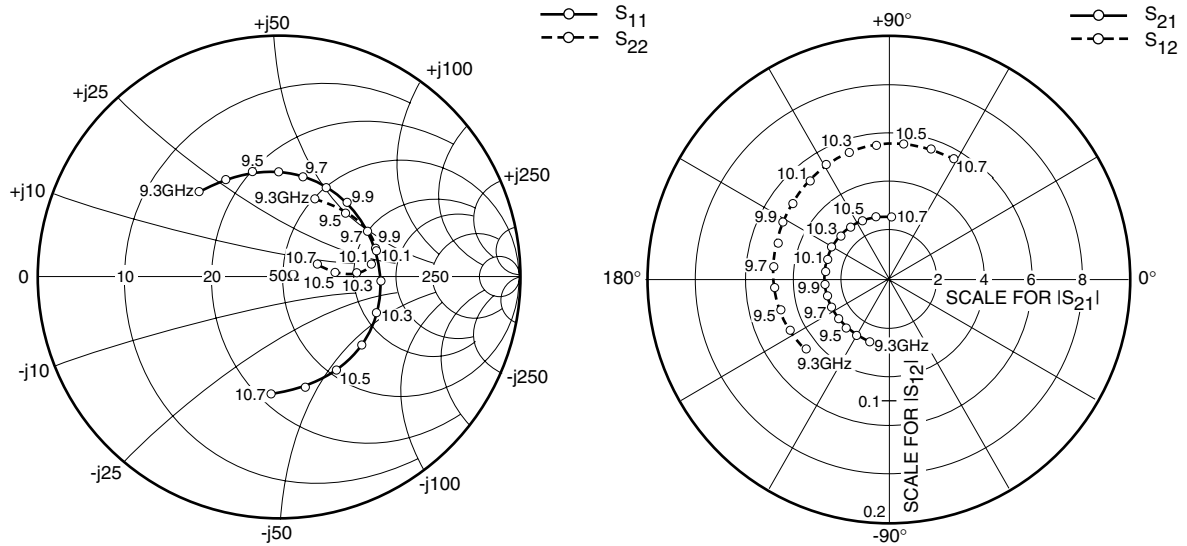


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

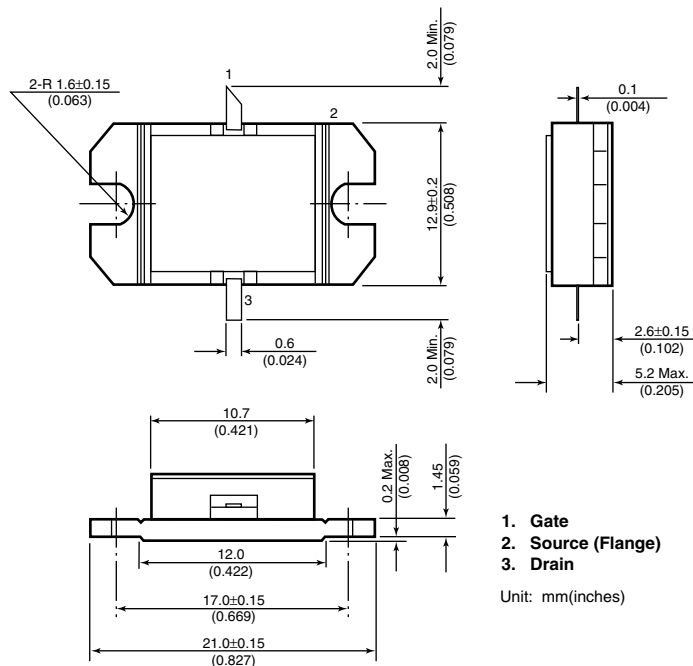
$V_{DS} = 10V, I_{DS} = 2200mA$

FREQUENCY (MHZ)	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
9300	.489	132.9	2.699	-108.2	.090	-140.2	.352	66.0
9400	.464	118.8	2.686	-120.0	.092	-152.4	.364	54.7
9500	.451	104.4	2.692	-131.6	.093	-164.8	.377	44.2
9600	.438	90.5	2.657	-142.5	.095	-175.1	.397	35.3
9700	.428	76.7	2.642	-153.9	.096	174.3	.412	28.2
9800	.421	62.4	2.640	-164.8	.095	162.4	.421	21.9
9900	.420	48.0	2.637	-175.5	.100	151.7	.417	17.2
10000	.418	32.1	2.651	173.5	.101	142.3	.406	12.1
10100	.420	15.7	2.668	162.3	.104	130.3	.385	7.9
10200	.424	-2.0	2.689	150.9	.107	119.4	.358	5.2
10300	.428	-20.4	2.703	138.8	.109	108.0	.320	2.6
10400	.440	-39.3	2.703	126.7	.108	96.1	.276	2.6
10500	.452	-58.2	2.691	114.2	.112	84.3	.231	3.3
10600	.469	-76.6	2.656	101.7	.112	72.3	.194	8.4
10700	.484	-94.2	2.600	89.0	.111	61.1	.166	17.4

FLM0910-8F

X, Ku-Band Internally Matched FET

Case Style "IB" 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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