

FLM3439-8F

C-Band Internally Matched FET

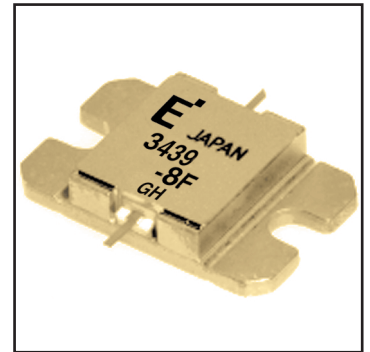
FEATURES

- High Output Power: $P_{1dB} = 39.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 11.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 37\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 28.5\text{dBm}$
- Broad Band: 3.4 ~ 3.9GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM3439-8F 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 100Ω .

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	3900	5850	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 2200\text{mA}$	-	2000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 180\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -180\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 3.4 \sim 3.9 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	38.5	39.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		10.0	11.0	-	dB
Drain Current	I_{dsr}		-	2200	2600	mA
Power-added Efficiency	η_{add}		-	40	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 3.9 \text{GHz}, \Delta f = 10 \text{MHz}$ 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	$^\circ\text{C}$

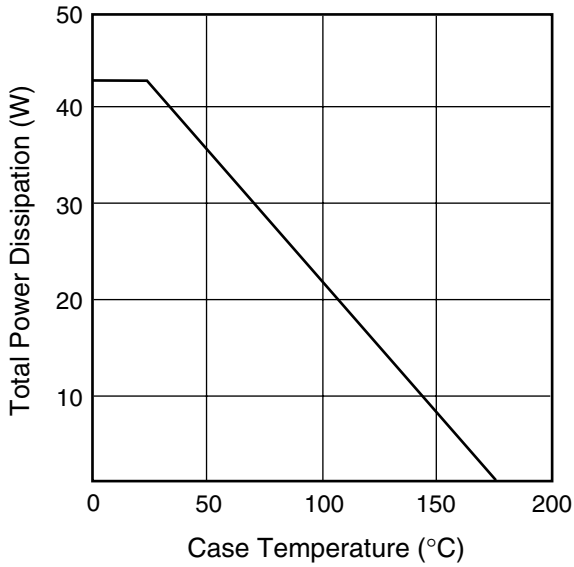
CASE STYLE: IB

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

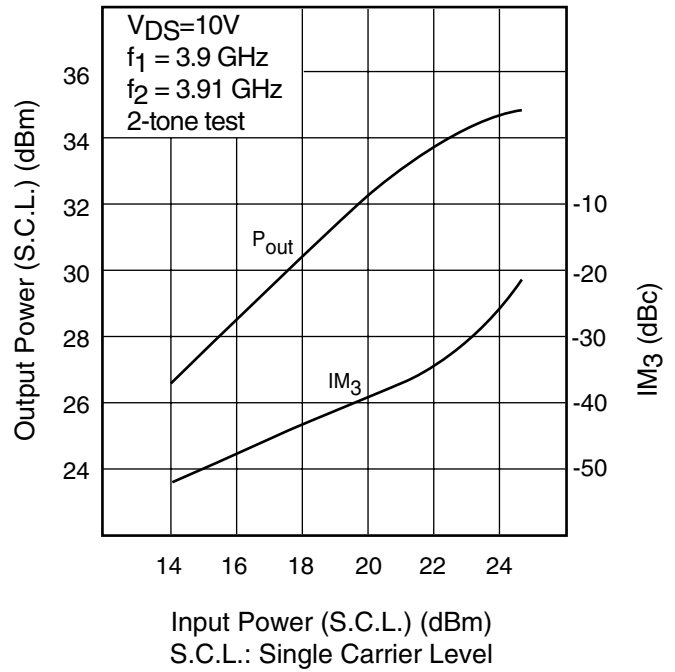
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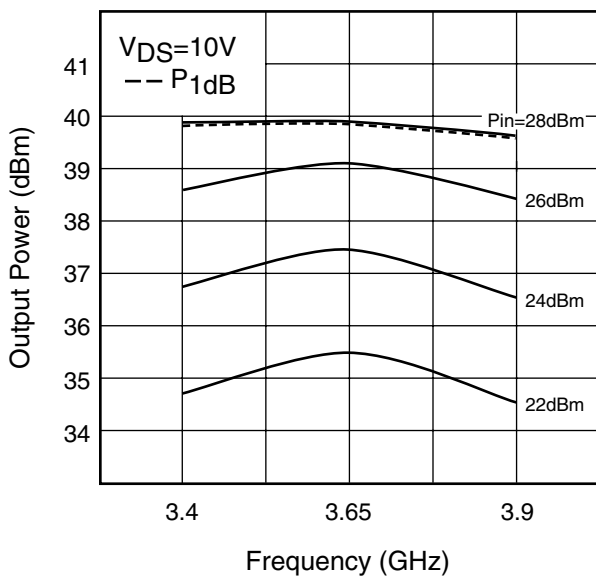
POWER DERATING CURVE



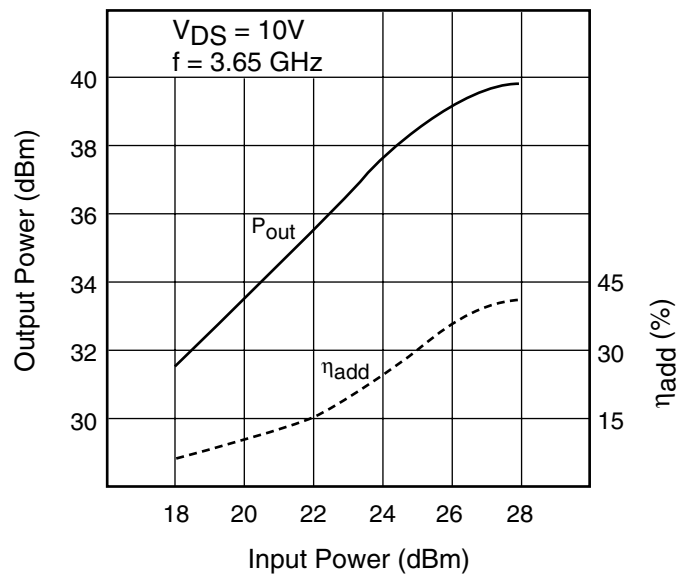
OUTPUT POWER & IM₃ vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY

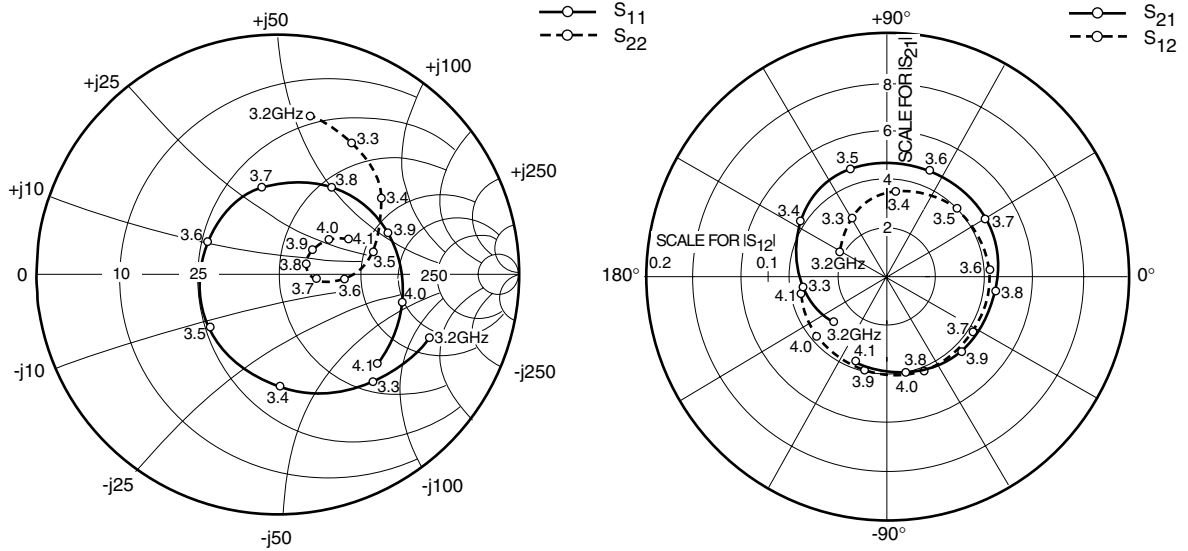


OUTPUT POWER vs. INPUT POWER



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S-PARAMETERS

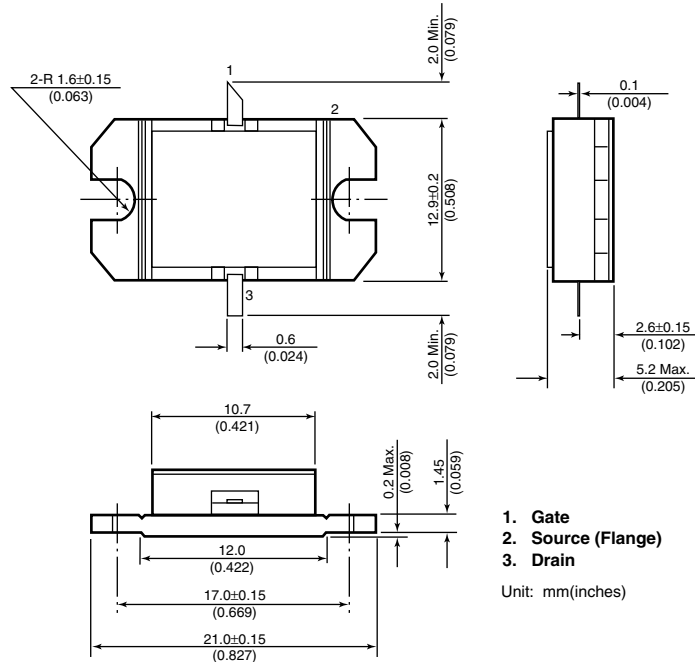
$V_{DS} = 10V, I_{DS} = 2200mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3200	.678	-23.1	2.932	-142.8	.045	153.4	.678	78.6
3300	.592	-48.9	3.564	-173.1	.056	123.1	.628	60.6
3400	.468	-89.5	4.318	148.1	.070	84.0	.533	36.5
3500	.356	-142.0	4.736	108.4	.080	44.3	.405	13.3
3600	.325	155.0	4.801	68.4	.085	4.6	.270	-4.4
3700	.370	100.5	4.708	29.7	.085	-33.5	.159	-6.5
3800	.430	58.4	4.507	-7.2	.083	-69.5	.121	19.6
3900	.482	20.9	4.242	-44.7	.080	-105.6	.172	37.8
4000	.521	-12.8	3.952	-79.7	.077	-139.4	.252	35.1
4100	.555	-42.3	3.701	-110.7	.073	-168.7	.328	27.1

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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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