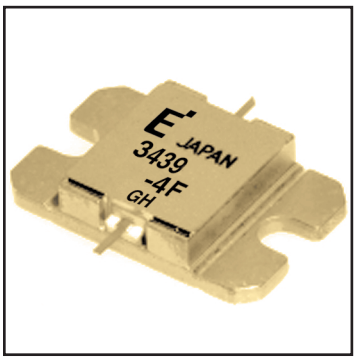
FLM3439-4F

C-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 36.5dBm (Typ.)
- High Gain: G_{1dB} = 12.0dB (Typ.)
- High PAE: η_{add} = 38% (Typ.)
- Low IM_3 = -46dBc@Po = 25.5dBm
- Broad Band: 3.4 ~ 3.9GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package



DESCRIPTION

The FLM3439-4F 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	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.

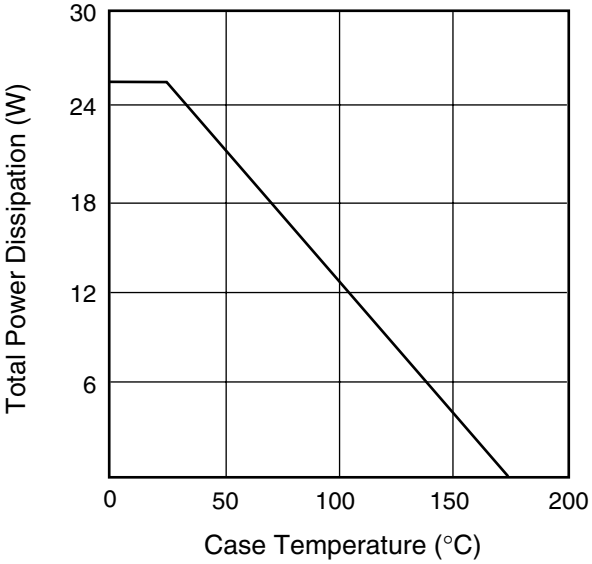
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	1950	2900	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 1100mA	-	1000	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 90mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -90μA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} =10V, I_{DS} = 0.55 I_{DSS} (Typ.), f = 3.4 ~ 3.9 GHz, Z_S=Z_L= 50 ohm	35.5	36.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		11.0	12.0	-	dB
Drain Current	I_{dsr}		-	1100	1300	mA
Power-added Efficiency	η_{add}		-	38	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 3.9 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

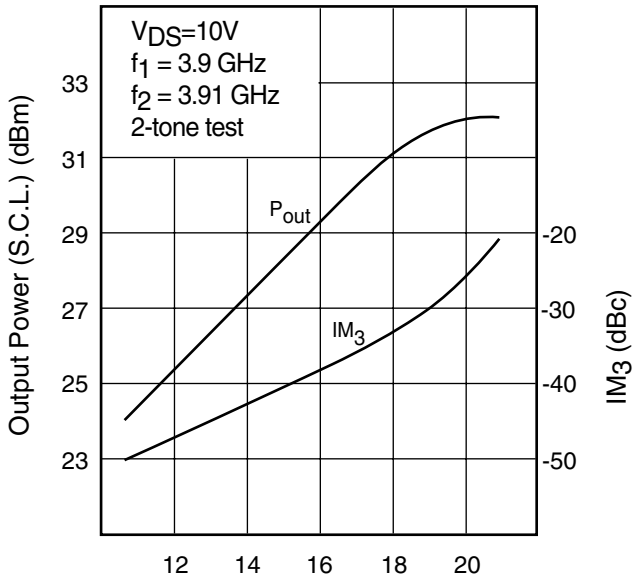
CASE STYLE: IB

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

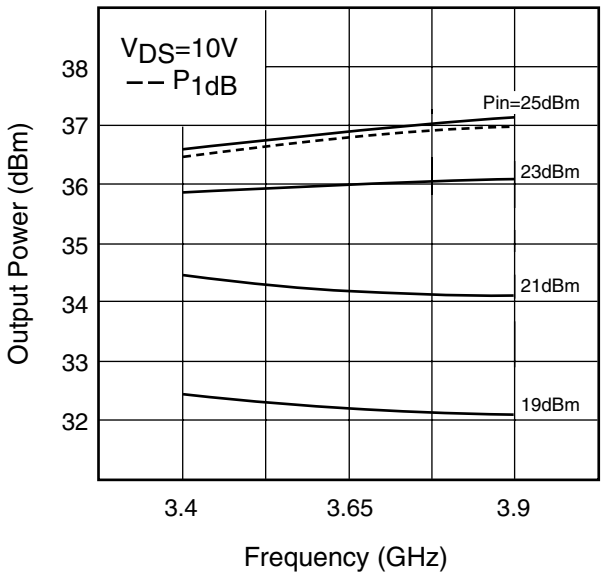
POWER DERATING CURVE



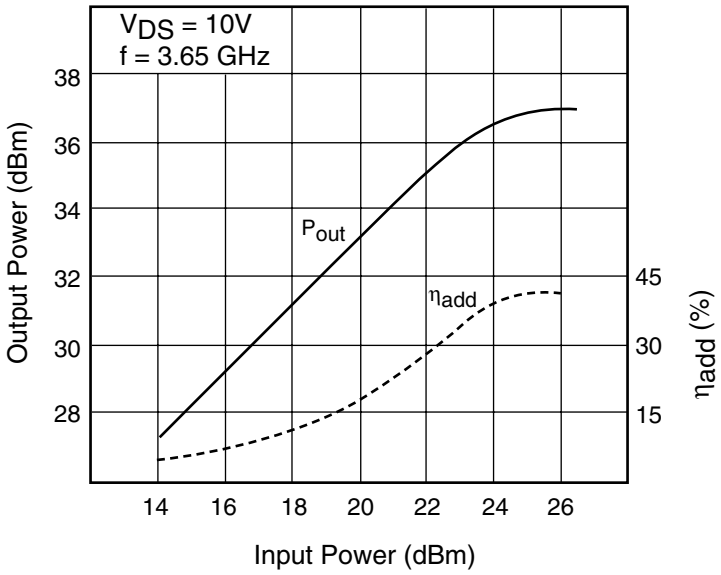
OUTPUT POWER & IM3 vs. INPUT POWER

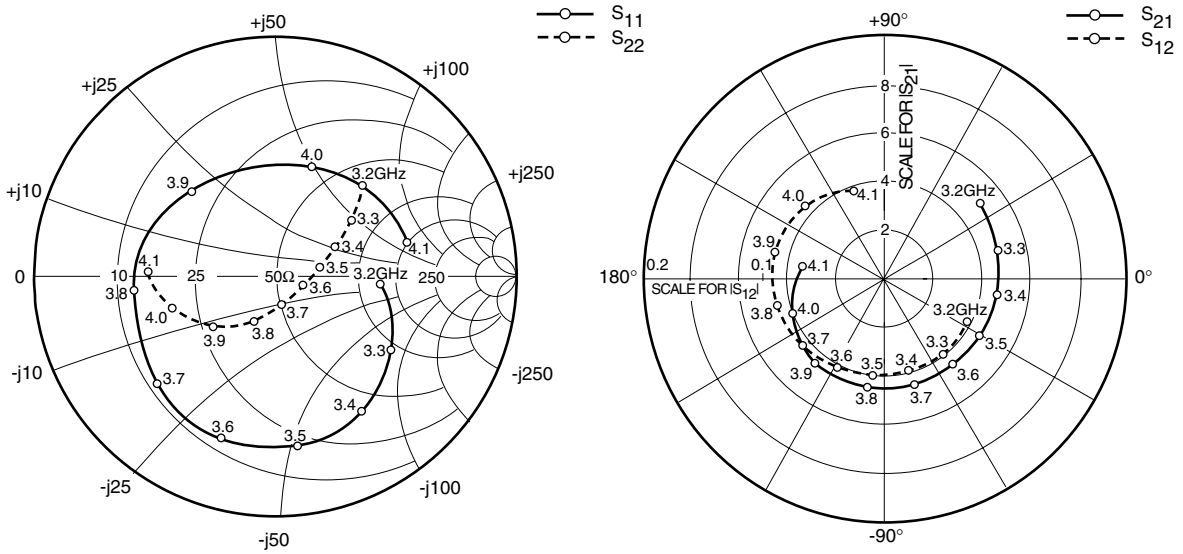


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





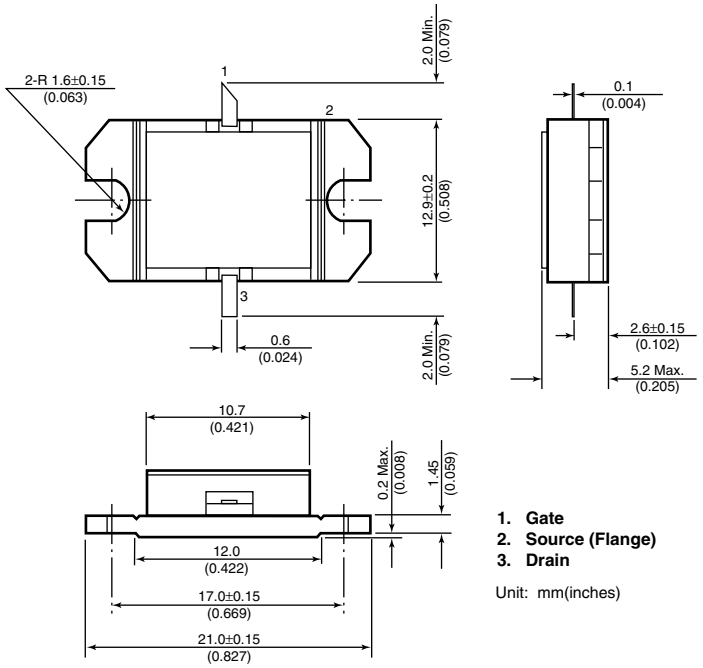
S-PARAMETERS

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

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3200	.435	-4.0	5.047	37.6	.077	-28.0	.521	45.7
3300	.577	-32.3	4.886	14.4	.080	-52.6	.391	35.4
3400	.669	-58.2	4.706	-8.0	.079	-75.0	.277	25.3
3500	.711	-82.6	4.588	-29.7	.082	-97.5	.187	11.3
3600	.709	-108.4	4.545	-51.4	.083	-118.1	.118	-19.0
3700	.670	-137.6	4.571	-74.4	.088	-141.4	.119	-76.0
3800	.589	-174.2	4.609	-99.3	.092	-164.8	.205	-115.9
3900	.493	135.0	4.516	-127.8	.094	166.6	.334	-141.3
4000	.478	71.5	4.128	-158.5	.089	137.3	.454	-162.5
4100	.573	14.1	3.414	171.8	.077	109.8	.532	178.2
4200	.685	-26.3	2.664	146.0	.062	85.7	.557	162.7

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.**