

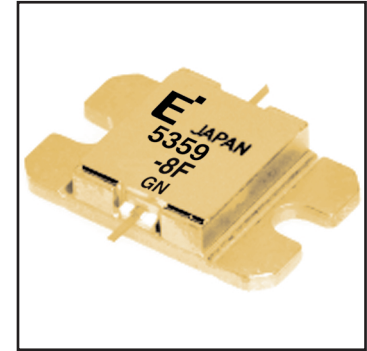
FEATURES

- High Output Power: $P_{1dB} = 39.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 36\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 28.5\text{dBm}$
- Broad Band: 5.3 ~ 5.9GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$

DESCRIPTION

The FLM5359-8F 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}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	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.), $f = 5.3 \sim 5.9 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	38.5	39.5	-	dBm	
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB	
Drain Current	I_{dsr}		-	2200	2600	mA	
Power-added Efficiency	η_{add}		-	36	-	%	
Gain Flatness	ΔG		-	-	± 0.6	dB	
3rd Order Intermodulation Distortion	IM_3		$f = 5.9 \text{GHz}, \Delta f = 10 \text{MHz}$ 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	$^\circ\text{C}/\text{W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$	

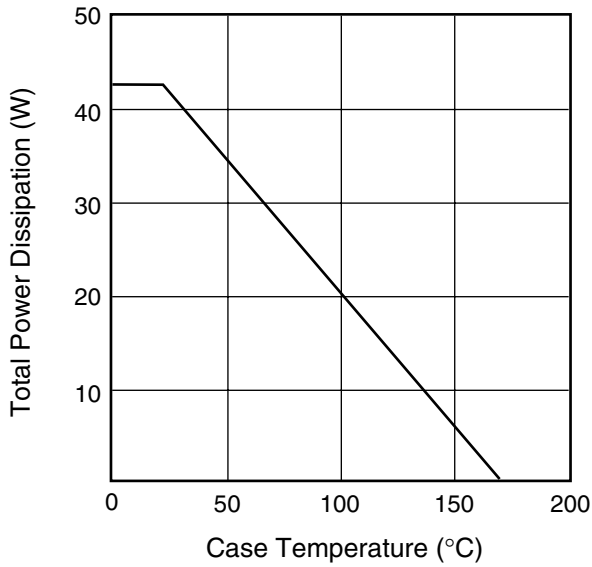
CASE STYLE: IB

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

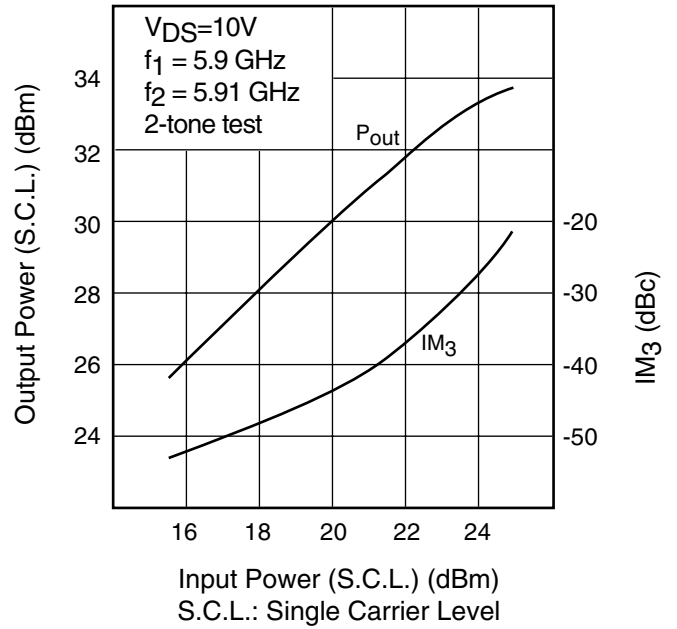
FLM5359-8F

C-Band Internally Matched FET

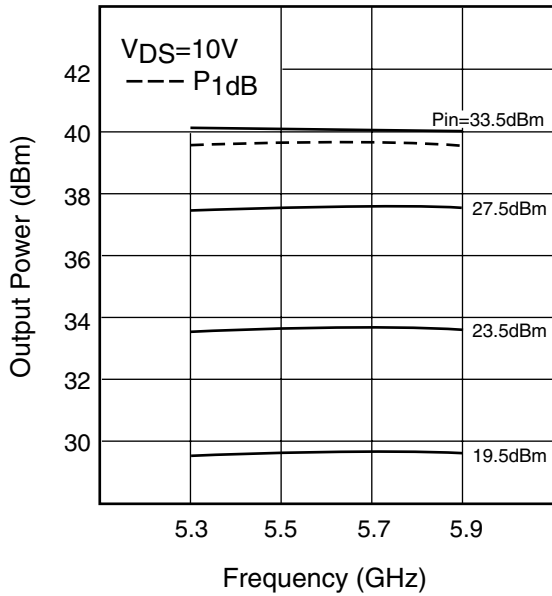
POWER DERATING CURVE



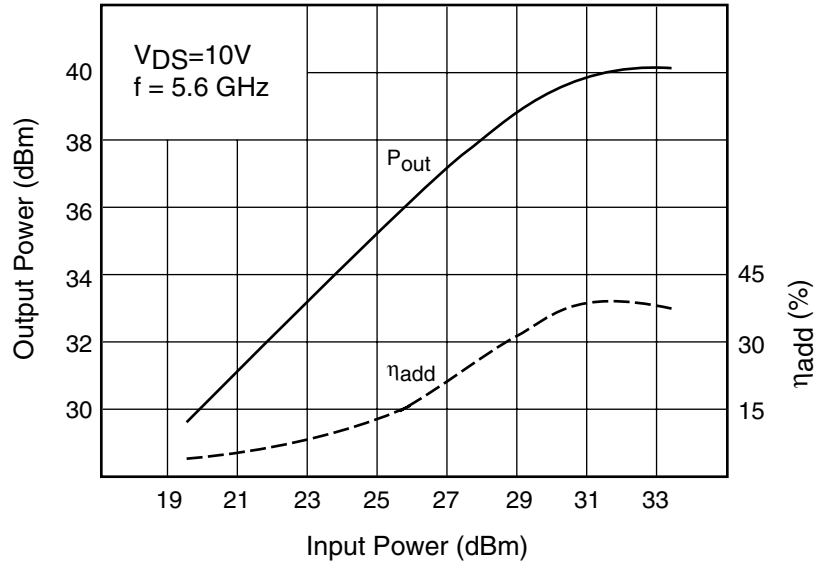
OUTPUT POWER & IM₃ vs. INPUT POWER

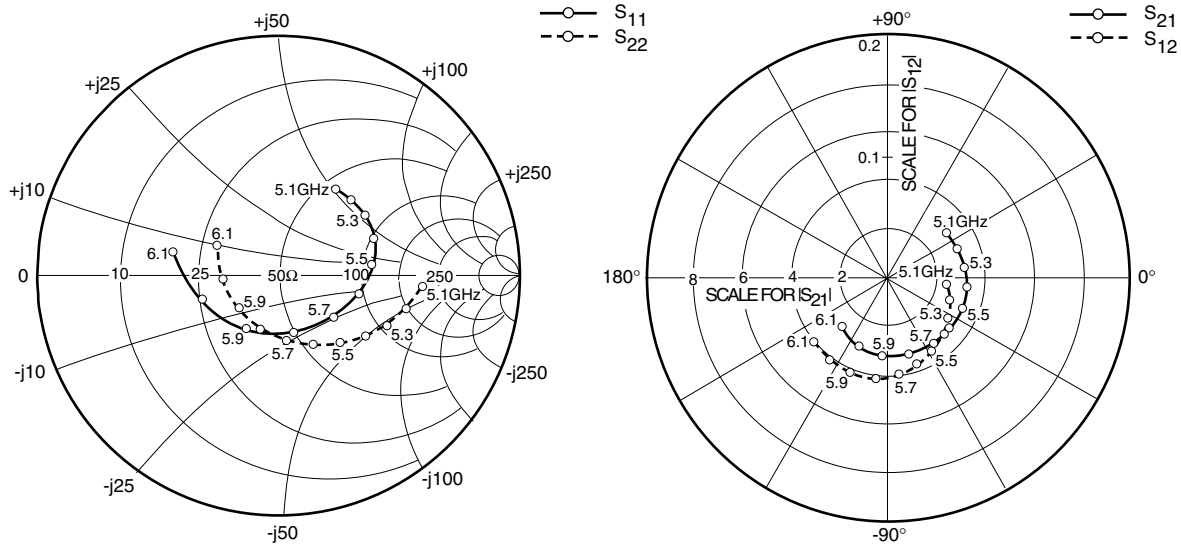


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

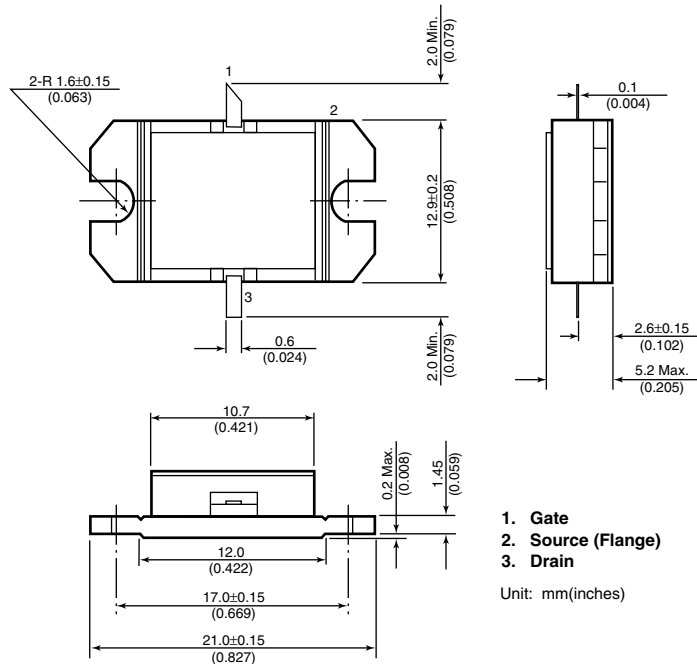
$V_{DS} = 10V, I_{DS} = 2200mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5100	.436	57.3	3.020	37.7	.048	-5.7	.596	-5.3
5200	.439	46.6	3.090	23.2	.053	-20.0	.548	-15.2
5300	.436	35.7	3.162	8.3	.058	-33.6	.500	-25.2
5400	.417	21.8	3.217	-6.8	.065	-45.7	.442	-35.1
5500	.385	6.8	3.228	-22.6	.067	-58.8	.382	-47.6
5600	.339	-13.3	3.229	-39.2	.073	-72.3	.322	-63.6
5700	.282	-38.2	3.242	-56.6	.079	-83.7	.278	-83.6
5800	.247	-75.8	3.220	-75.1	.083	-98.1	.241	-108.0
5900	.251	-122.5	3.191	-94.5	.084	-112.8	.216	-140.2
6000	.334	-162.8	3.053	-114.3	.083	-126.5	.230	-177.1
6100	.447	167.3	2.796	-134.3	.081	-140.0	.287	153.2

FLM5359-8F

C-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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