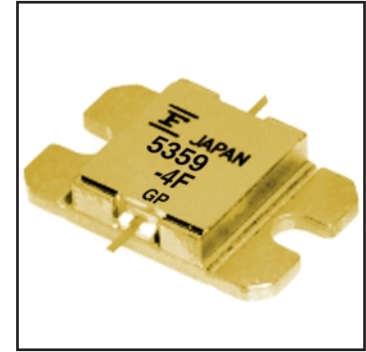
FLM5359-4F

C-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 36.5dBm (Typ.)
- High Gain: G_{1dB} = 10.5dB (Typ.)
- High PAE: η_{add} = 37% (Typ.)
- Low IM_3 = -46dBc@Po = 25.5dBm
- Broad Band: 5.3 ~ 5.9GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package



DESCRIPTION

The FLM5359-4F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

Fujitsu'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	-	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 = 5.3 ~ 5.9 GHz, Z_S=Z_L= 50 ohm	35.5	36.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		9.5	10.5	-	dB
Drain Current	I_{dsr}		-	1100	1300	mA
Power-added Efficiency	η_{add}		-	37	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 5.9 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

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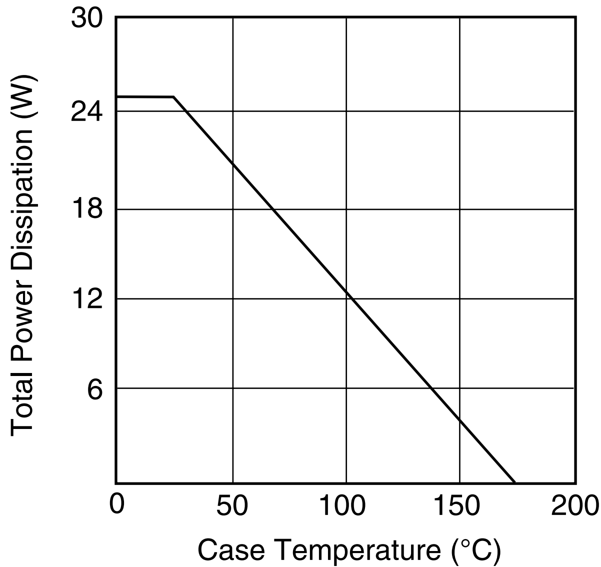
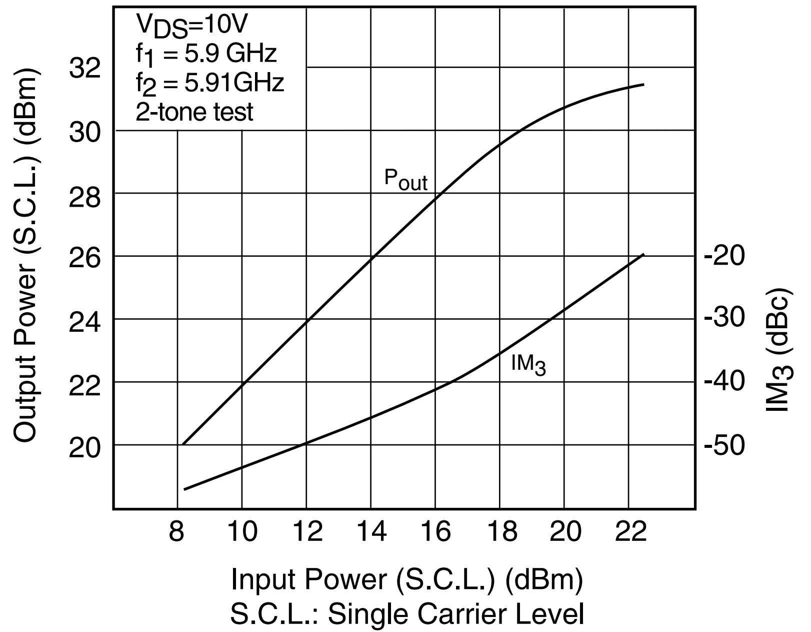
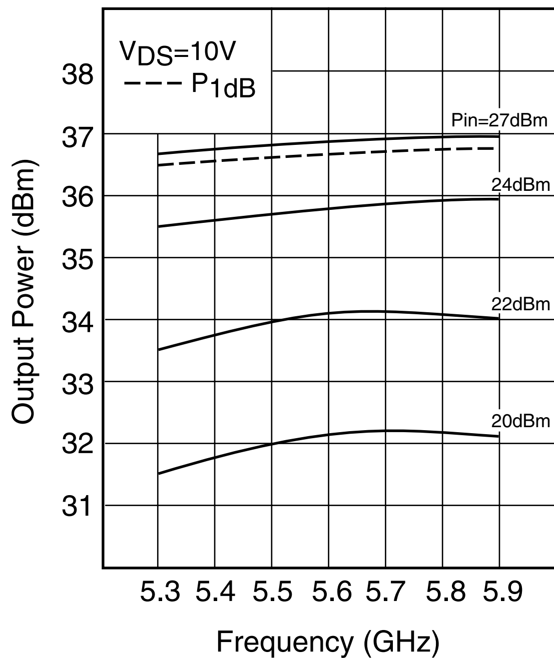
POWER DERATING CURVE



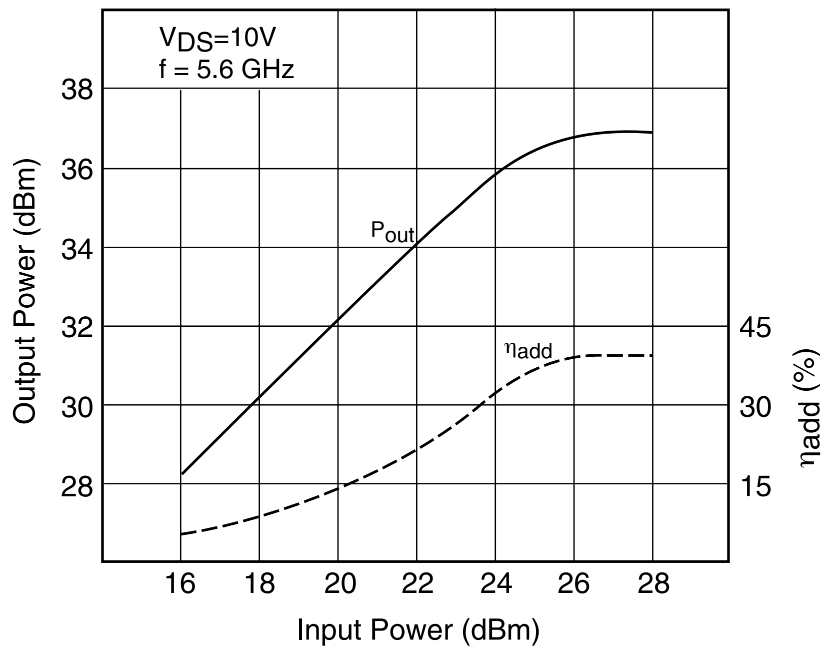
OUTPUT POWER & IM3 vs. INPUT POWER

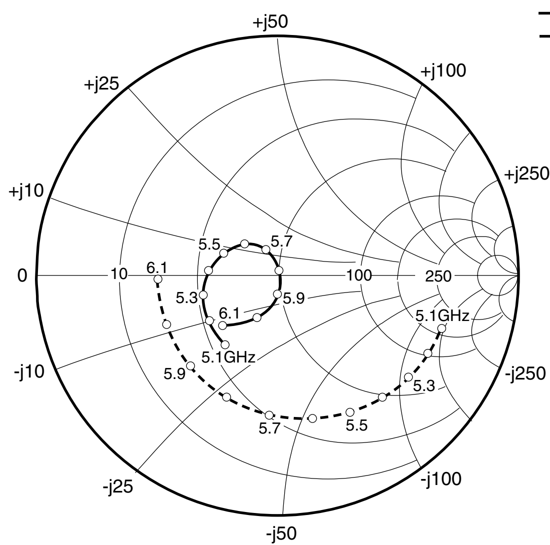


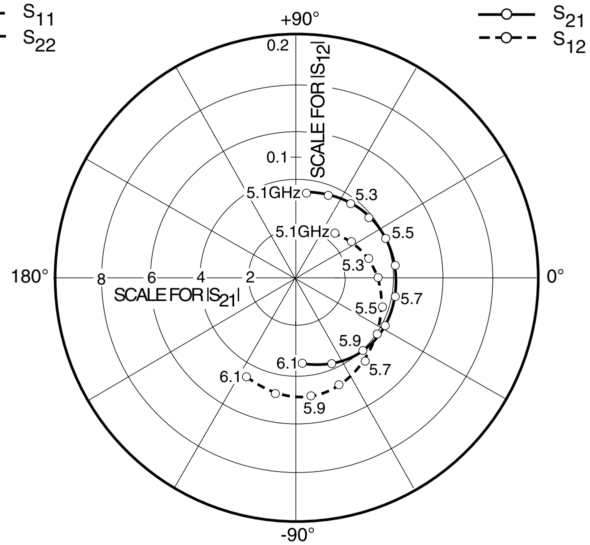
OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER







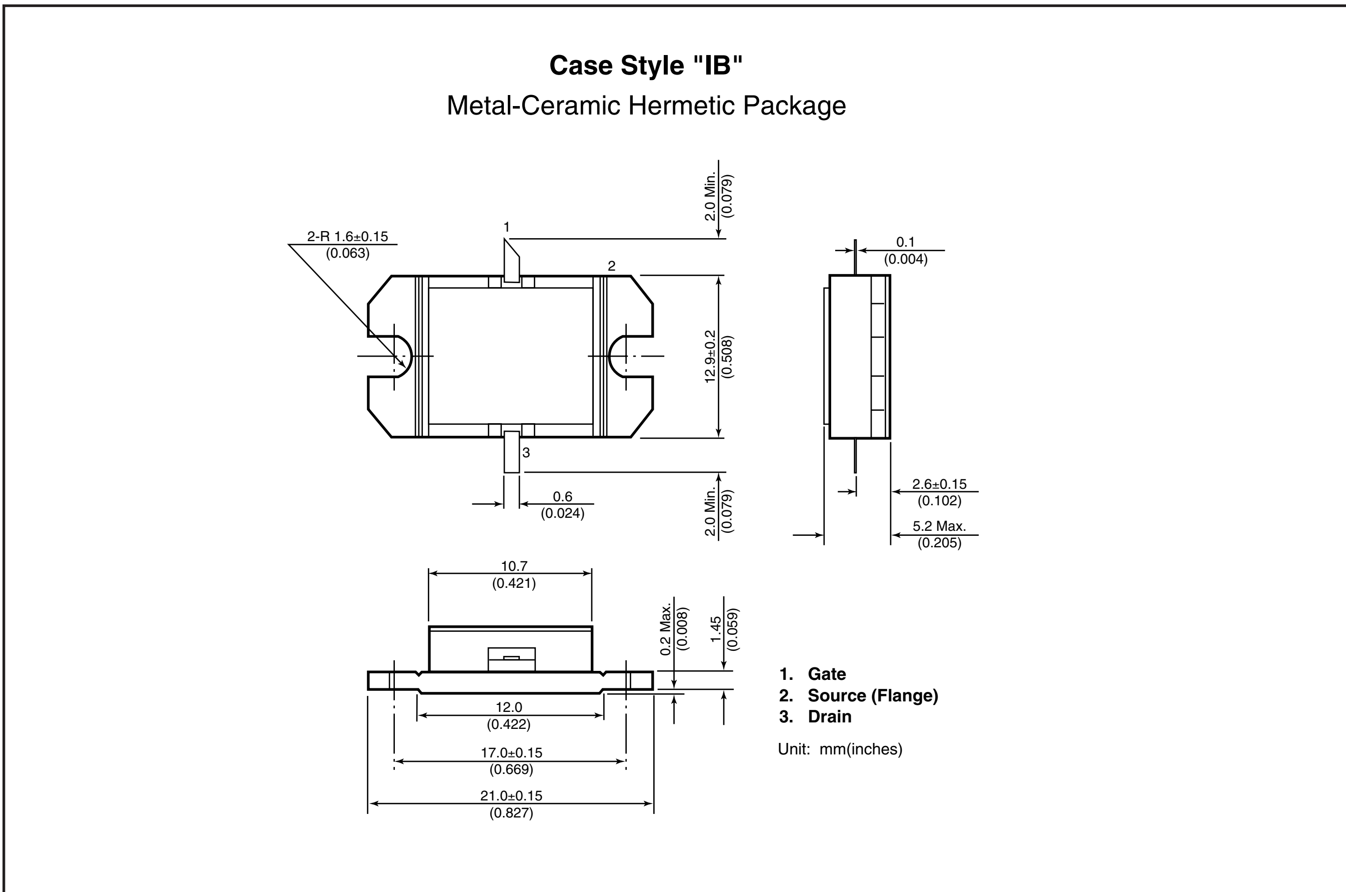
S-PARAMETERS

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

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5100	.363	-126.5	3.558	83.3	.048	48.4	.708	-18.0
5200	.341	-146.1	3.665	69.1	.054	31.8	.697	-27.6
5300	.317	-165.4	3.769	54.5	.062	14.5	.680	-38.0
5400	.287	175.9	3.887	39.5	.068	-0.5	.664	-49.3
5500	.244	156.5	4.001	23.8	.076	-17.8	.642	-62.2
5600	.189	136.3	4.092	7.2	.083	-33.6	.611	-76.7
5700	.116	113.0	4.150	-10.5	.089	-49.8	.579	-93.9
5800	.029	69.0	4.141	-29.0	.093	-67.8	.548	-113.2
5900	.082	-88.4	4.025	-48.1	.097	-83.5	.524	-134.1
6000	.195	-115.1	3.822	-67.5	.096	-100.3	.508	-156.3
6100	.309	-137.5	3.523	-86.8	.091	-117.0	.502	-178.2

Case Style "IB"

Metal-Ceramic Hermetic Package



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Fujitsu Compound Semiconductor 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 these products 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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