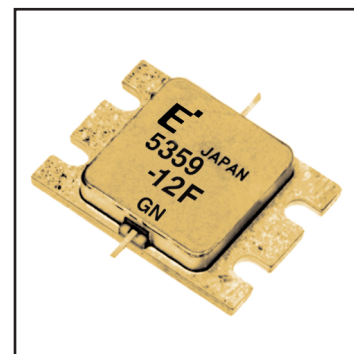


### FEATURES

- High Output Power:  $P_{1dB} = 41.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 9.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 38\%$  (Typ.)
- Low  $IM_3 = -46\text{dBc}$  @  $P_o = 30.5\text{dBm}$
- Broad Band: 5.3 ~ 5.9GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$



### DESCRIPTION

The FLM5359-12F 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	$P_T$	$T_C = 25^\circ\text{C}$	57.6	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 -5.6 mA respectively with gate resistance of  $50\Omega$ .

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 5V, V_{GS} = 0V$	-	5800	8700	mA
Transconductance	$g_m$	$V_{DS} = 5V, I_{DS} = 3400\text{mA}$	-	2900	-	mS
Pinch-off Voltage	$V_p$	$V_{DS} = 5V, I_{DS} = 300\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -300\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS} = 10V,$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 5.3 \sim 5.9\text{GHz},$ $Z_S = Z_L = 50\text{ohm}$	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		8.5	9.5	-	dB
Drain Current	$I_{dsr}$		-	3250	3800	mA
Power-added Efficiency	$\eta_{add}$		-	38	-	%
Gain Flatness	$\Delta G$		-	-	$\pm 0.6$	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 5.9\text{GHz}, \Delta f = 10\text{MHz}$ 2-Tone Test $P_{out} = 30.5\text{dBm S.C.L.}$	-44	-46	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	2.3	2.6	$^\circ\text{C/W}$
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

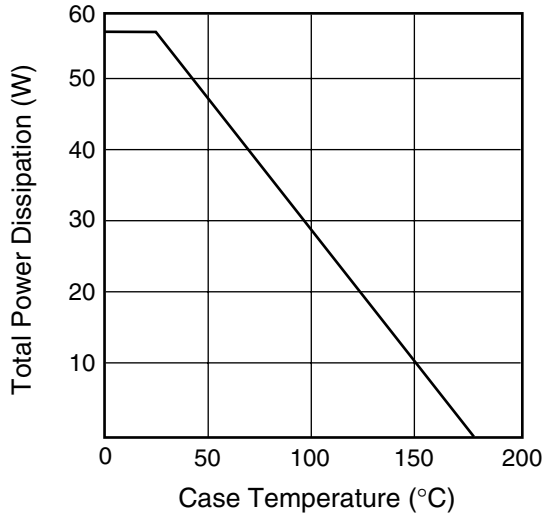
CASE STYLE: IK

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

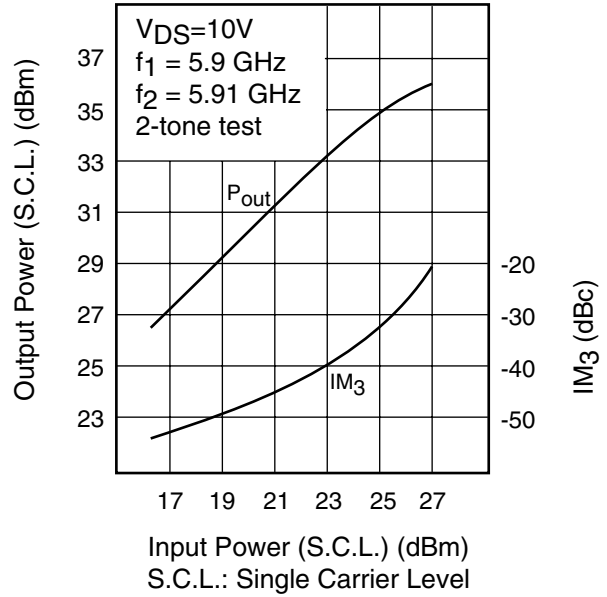
# FLM5359-12F

## C-Band Internally Matched FET

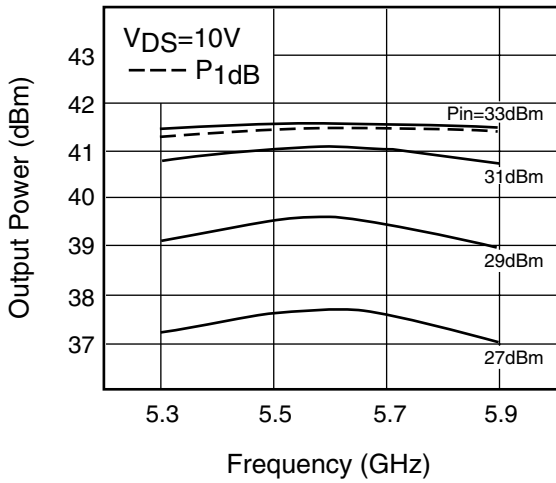
**POWER DERATING CURVE**



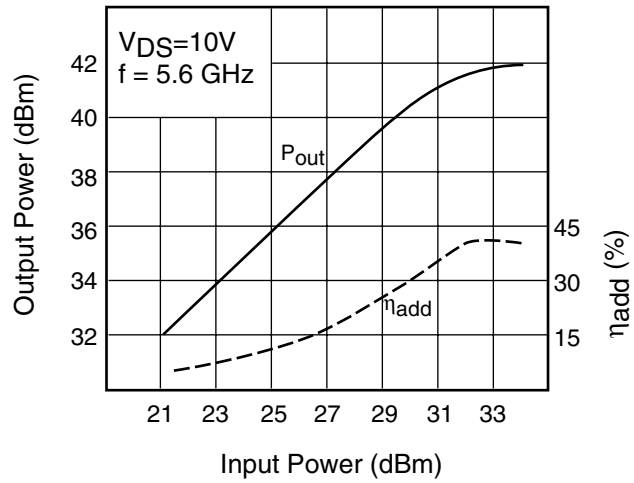
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**

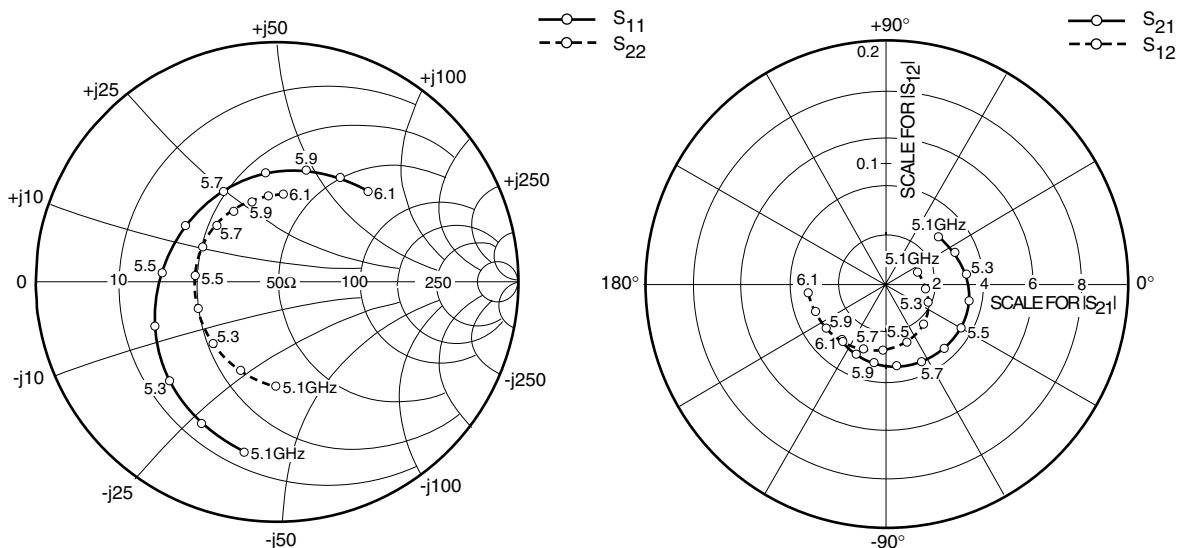


**OUTPUT POWER vs. FREQUENCY**



**OUTPUT POWER vs. INPUT POWER**





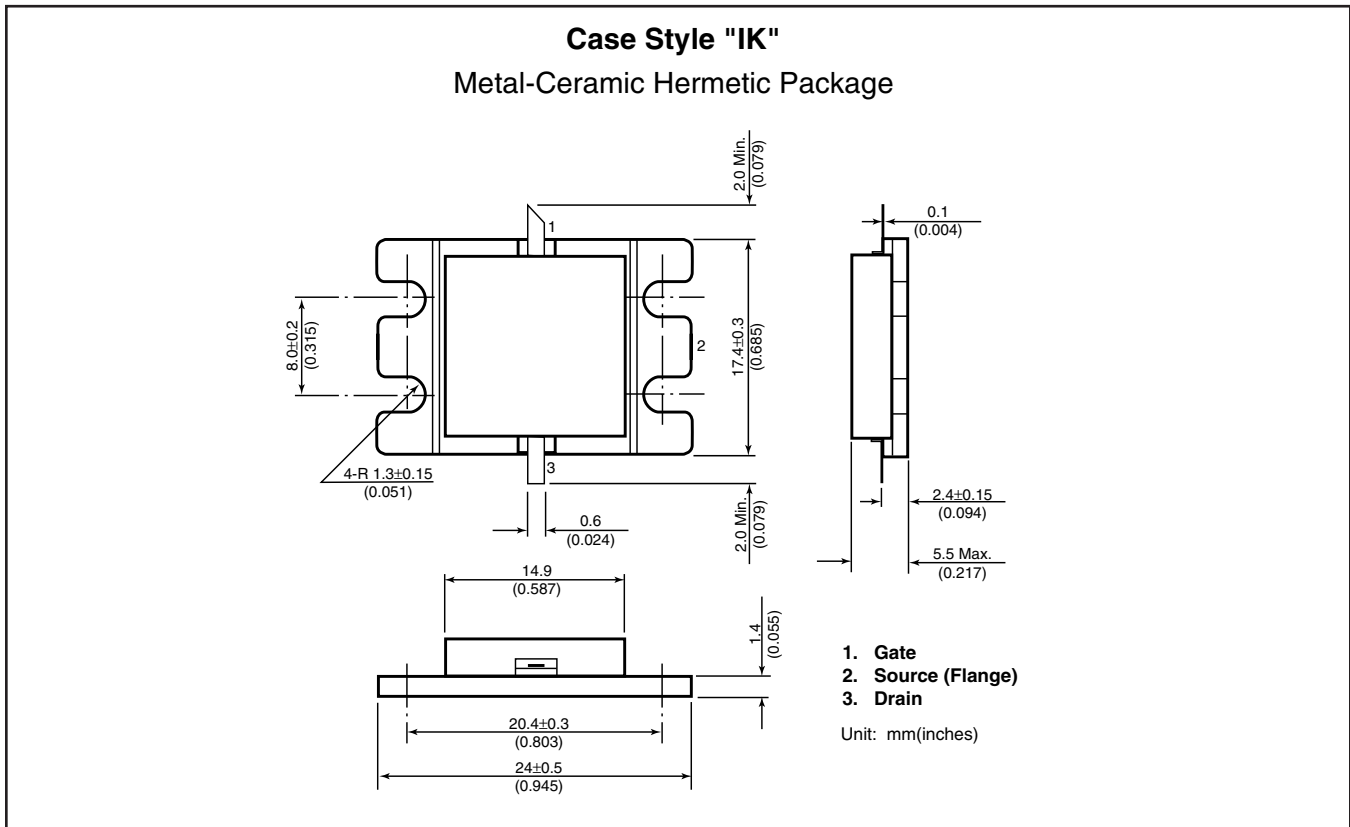
### S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 340mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5100	.722	-100.8	2.867	43.0	.027	21.1	.434	-91.7
5200	.670	-118.0	3.100	25.4	.031	-4.1	.401	-113.1
5300	.608	-137.4	3.299	7.2	.038	-26.3	.372	-136.6
5400	.543	-159.6	3.429	-11.6	.044	-49.2	.352	-161.0
5500	.485	175.3	3.497	-30.0	.050	-71.0	.343	175.8
5600	.448	148.0	3.502	-48.4	.054	-91.6	.344	155.0
5700	.441	120.7	3.449	-66.1	.057	-110.3	.344	137.0
5800	.458	96.4	3.357	-83.2	.060	-128.1	.346	121.8
5900	.485	76.0	3.250	-99.5	.063	-144.4	.350	108.2
6000	.513	59.3	3.141	-114.9	.064	-159.7	.357	96.8
6100	.536	45.2	3.053	-129.7	.066	-174.1	.365	86.8

# FLM5359-12F

## C-Band Internally Matched FET



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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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