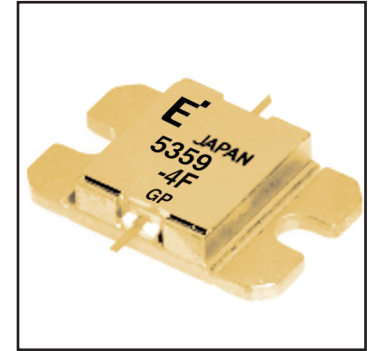


### FEATURES

- High Output Power:  $P_{1dB} = 36.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 10.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 37\%$  (Typ.)
- Low  $IM_3 = -46\text{dBc}$  @  $P_o = 25.5\text{dBm}$
- Broad Band: 5.3 ~ 5.9GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$
- 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.

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 | $P_T$     | $T_c = 25^\circ\text{C}$ | 25.0        | 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 16.0 and -2.2 mA respectively with gate resistance of  $100\Omega$ .

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

| Item                                 | Symbol          | Test Conditions  | Limit  |      |           | Unit             |                           |
|--------------------------------------|-----------------|--|--|------|-----------|------------------|---------------------------|
|                                      |                 |  | Min.   | Typ. | Max.      |                  |                           |
| Saturated Drain Current              | $I_{DSS}$       | $V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$   | -  | 1950 | 2900      | mA               |                           |
| Transconductance                     | $g_m$           | $V_{DS} = 5\text{V}, I_{DS} = 1100\text{mA}$   | -  | 1000 | -         | mS               |                           |
| Pinch-off Voltage                    | $V_p$           | $V_{DS} = 5\text{V}, I_{DS} = 90\text{mA}$   | -1.0   | -2.0 | -3.5      | V                |                           |
| Gate Source Breakdown Voltage        | $V_{GSO}$       | $I_{GS} = -90\mu\text{A}$  | -5.0   | -    | -         | V                |                           |
| Output Power at 1dB G.C.P.           | $P_{1dB}$       | $V_{DS} = 10\text{V},$<br>$I_{DS} = 0.55 I_{DSS}$ (Typ.),<br>$f = 5.3 \sim 5.9\text{GHz},$<br>$Z_S = Z_L = 50\text{ohm}$ | 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               | $\eta_{add}$    |  | -  | 37   | -         | %                |                           |
| Gain Flatness                        | $\Delta G$      |  | -  | -    | $\pm 0.6$ | dB               |                           |
| 3rd Order Intermodulation Distortion | $IM_3$          |  | $f = 5.9\text{GHz}, \Delta f = 10\text{MHz}$<br>2-Tone Test<br>$P_{out} = 25.5\text{dBm}$ S.C.L. | -44  | -46       | -                | dBc                       |
| Thermal Resistance                   | $R_{th}$        |  | Channel to Case  | -    | 5.0       | 6.0              | $^\circ\text{C}/\text{W}$ |
| Channel Temperature Rise             | $\Delta T_{ch}$ | $10\text{V} \times I_{dsr} \times R_{th}$  | -  | -    | 80        | $^\circ\text{C}$ |                           |

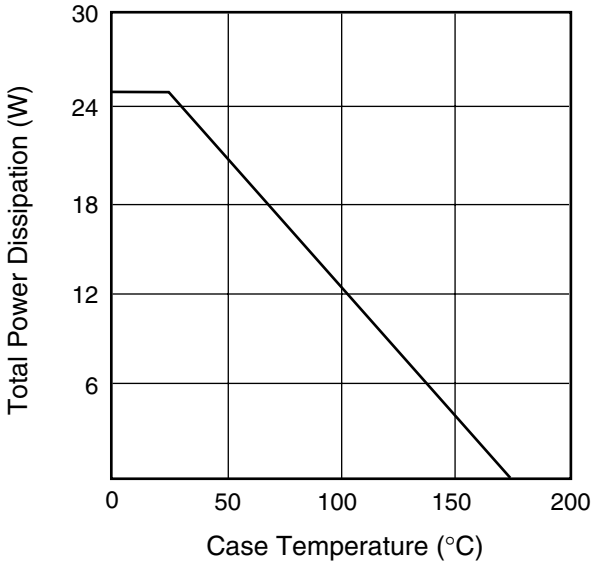
CASE STYLE: IB

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

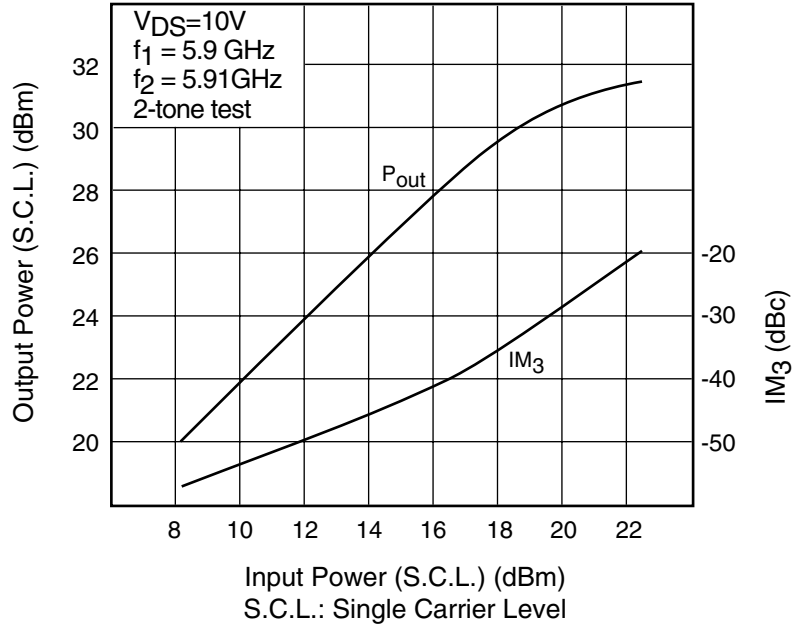
# FLM5359-4F

## C-Band Internally Matched FET

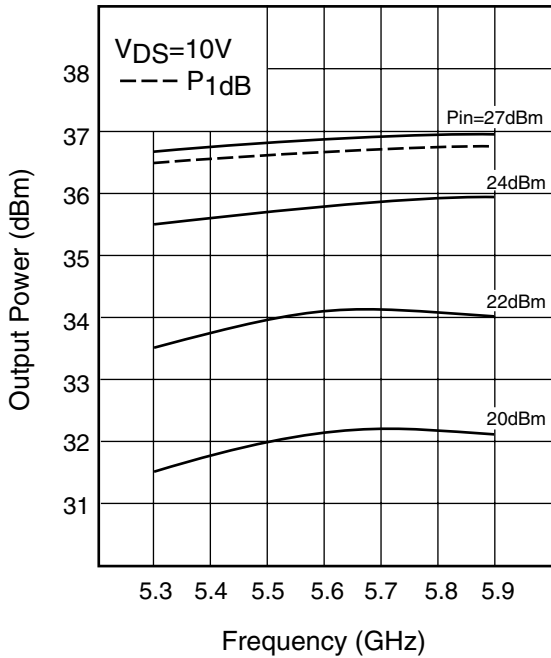
**POWER DERATING CURVE**



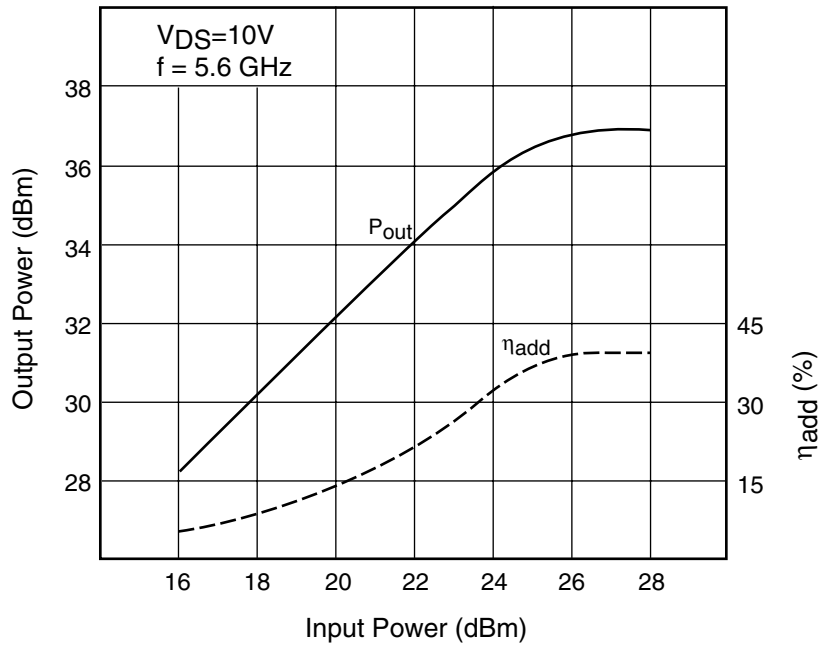
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**

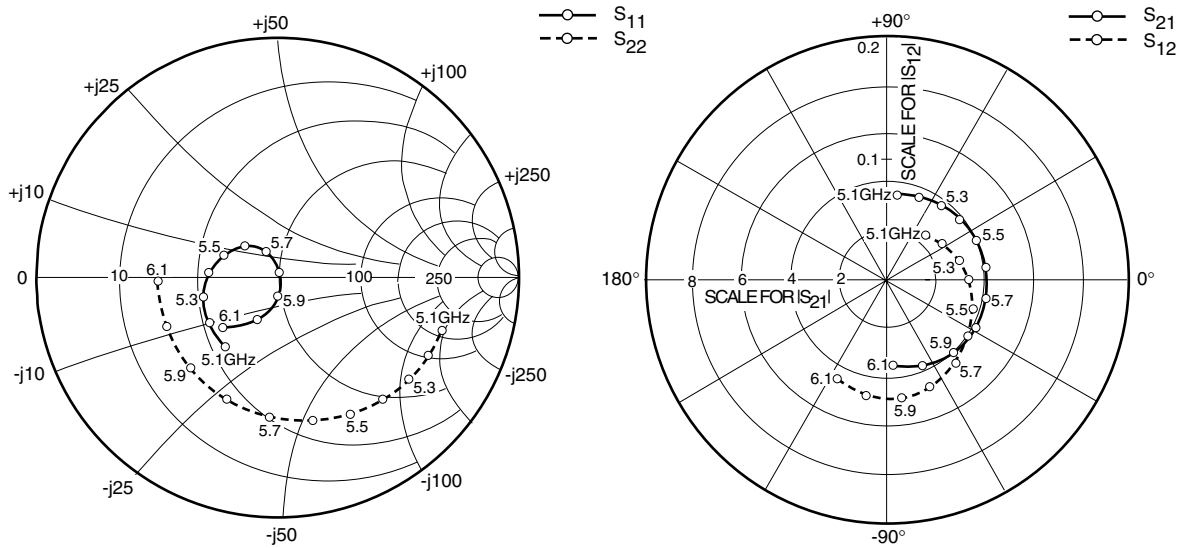


**OUTPUT POWER vs. FREQUENCY**



**OUTPUT POWER vs. INPUT POWER**





### S-PARAMETERS

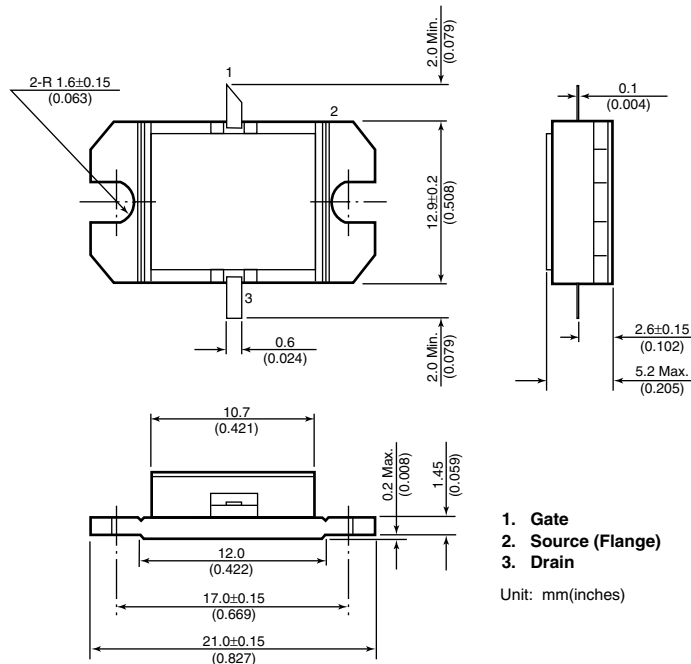
$V_{DS} = 10V, I_{DS} = 1100mA$

| FREQUENCY<br>(MHZ) | S11  |        | S21   |       | S12  |        | S22  |        |
|--------------------|------|--------|-------|-------|------|--------|------|--------|
|                    | 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 |

# FLM5359-4F

## 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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