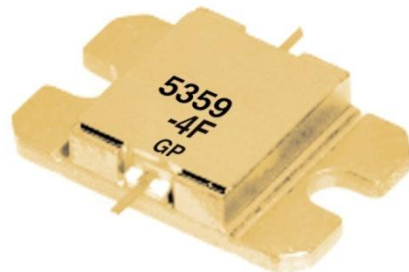


FEATURES

- 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 IM3 = $-46\text{dBc}@P_o = 25.5\text{dBm}$
- Broad Band: 5.3 to 5.9GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- 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.

SEDI's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25\text{deg.C}$)

| Item | Symbol | Condition | Rating | Unit |
|-------------------------|-----------|------------------------|-------------|-------|
| Drain-Source Voltage | V_{DS} | | 15 | V |
| Gate-Source Voltage | V_{GS} | | -5 | V |
| Total Power Dissipation | P_T | $T_c = 25\text{deg.C}$ | 25.0 | W |
| Storage Temperature | T_{stg} | | -65 to +175 | deg.C |
| Channel Temperature | T_{ch} | | 175 | deg.C |

SEDI 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 100ohm.

ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25\text{deg.C}$)

| 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 | $V_{DS}=5V, I_{DS}=1100\text{mA}$ | - | 1000 | - | mS |
| Pinch-off Voltage | V_p | $V_{DS}=5V, I_{DS}=90\text{mA}$ | -1.0 | -2.0 | -3.5 | V |
| Gate Source Breakdown Voltage | V_{GSO} | $I_{GS}=-90\text{uA}$ | -5.0 | - | - | V |
| Output Power at 1dB G.C.P. | P_{1dB} | $V_{DS}=10V,$ | 35.5 | 36.5 | - | dBm |
| Power Gain at 1dB G.C.P. | G_{1dB} | $I_{DS}=0.55 I_{DSS}$ (Typ.), | 9.5 | 10.5 | - | dB |
| Drain Current | I_{dsr} | $f=5.3$ to 5.9 GHz, | - | 1100 | 1300 | mA |
| Power-added Efficiency | η_{add} | $Z_S=Z_L=50\text{ohm}$ | - | 37 | - | % |
| Gain Flatness | ΔG | | - | - | +/-0.6 | dB |
| 3rd Order Intermodulation Distortion | IM_3 | $f = 5.9$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 25.5\text{dBm S.C.L.}$ | -44 | -46 | - | dBc |
| Thermal Resistance | R_{th} | Channel to Case | - | 5.0 | 6.0 | deg.C/W |
| Channel Temperature Rise | ΔT_{ch} | $10V \times I_{dsr} \times R_{th}$ | - | - | 80 | deg.C |

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

CASE STYLE

IB

ESD

Class 3A

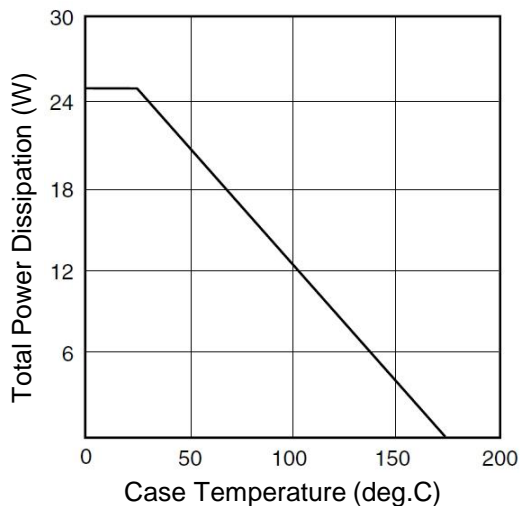
4000V to 8000V

Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)

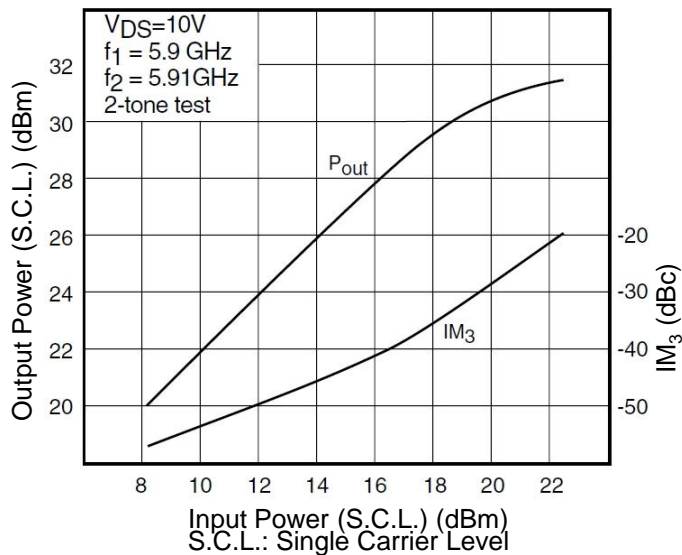
RoHS Compliance

Yes

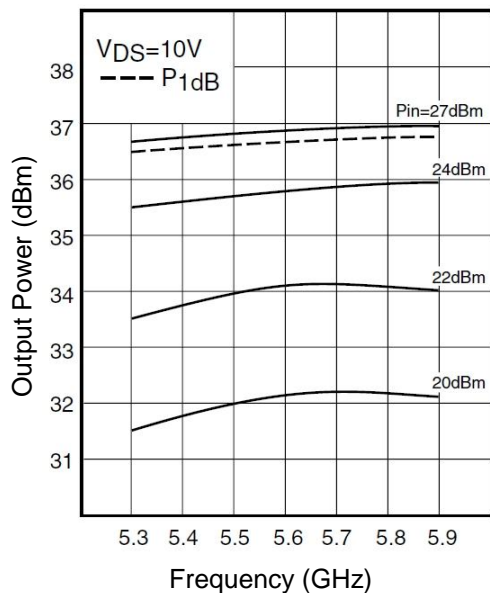
POWER DERATING CURVE



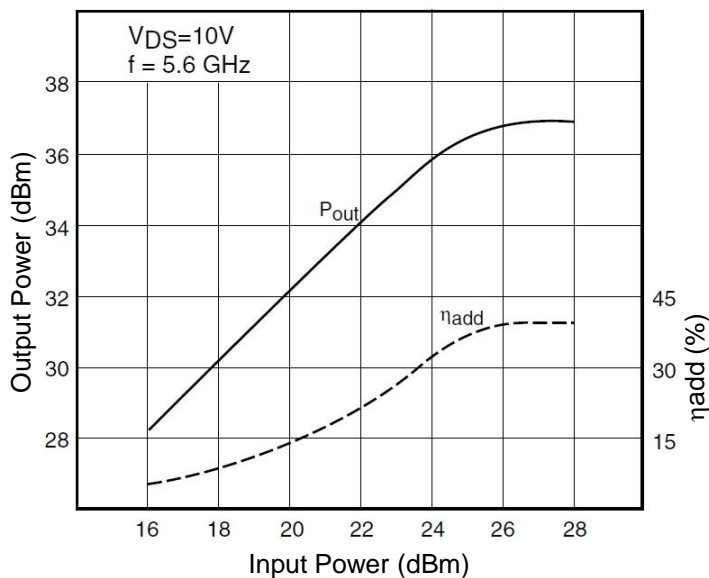
OUTPUT POWER & IM₃ vs. INPUT POWER

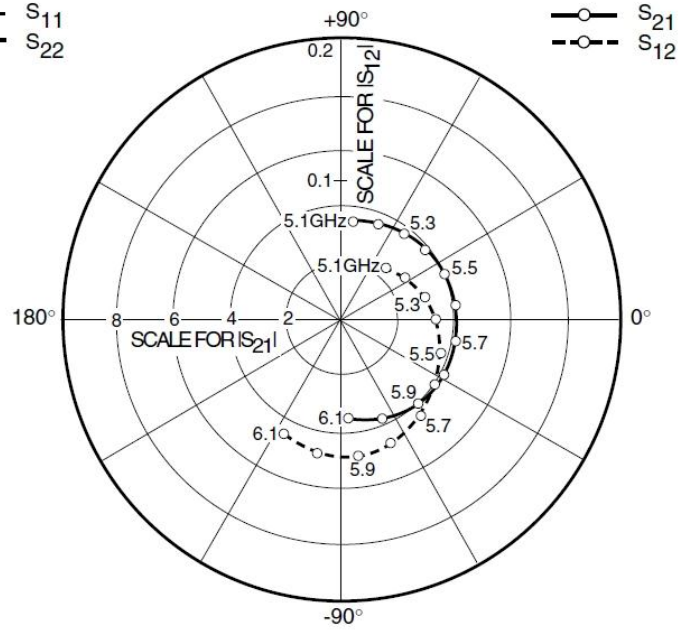
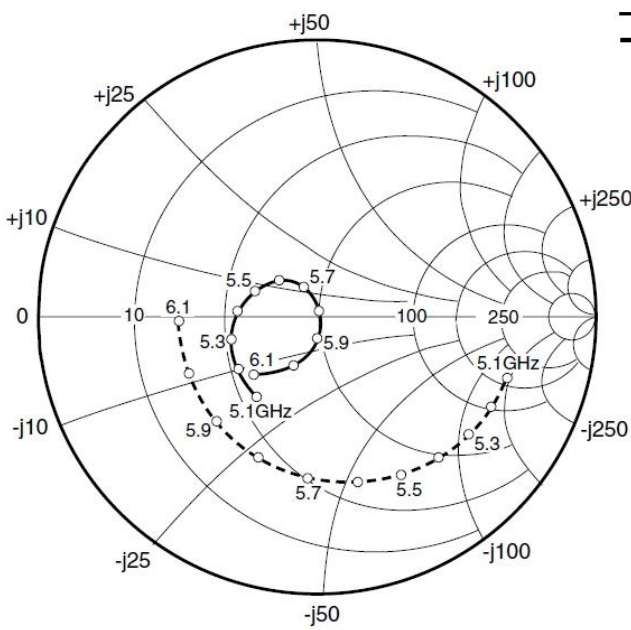


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



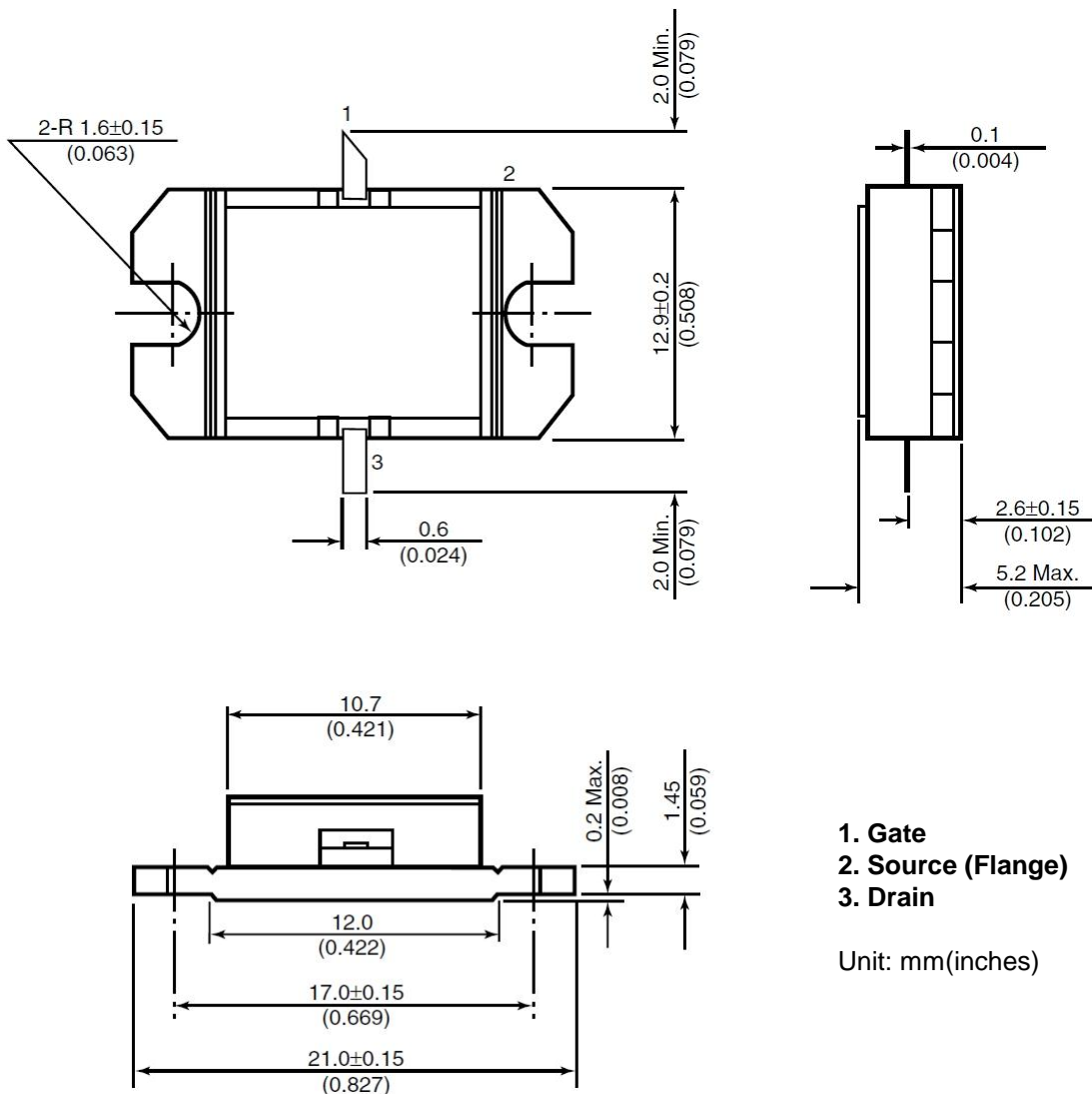


S-PARAMETERS

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

| FREQUENCY (MHz) | S11 | | S21 | | S12 | | S22 | |
|--------------------|-------|--------|-------|-------|-------|--------|-------|--------|
| | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 5100 | 0.363 | -126.5 | 3.558 | 83.3 | 0.048 | 48.4 | 0.708 | -18.0 |
| 5200 | 0.341 | -146.1 | 3.665 | 69.1 | 0.054 | 31.8 | 0.697 | -27.6 |
| 5300 | 0.317 | -165.4 | 3.769 | 54.5 | 0.062 | 14.5 | 0.680 | -38.0 |
| 5400 | 0.287 | 175.9 | 3.887 | 39.5 | 0.068 | -0.5 | 0.664 | -49.3 |
| 5500 | 0.244 | 156.5 | 4.001 | 23.8 | 0.076 | -17.8 | 0.642 | -62.2 |
| 5600 | 0.189 | 136.3 | 4.092 | 7.2 | 0.083 | -33.6 | 0.611 | -76.7 |
| 5700 | 0.116 | 113.0 | 4.150 | -10.5 | 0.089 | -49.8 | 0.579 | -93.9 |
| 5800 | 0.029 | 69.0 | 4.141 | -29.0 | 0.093 | -67.8 | 0.548 | -113.2 |
| 5900 | 0.082 | -88.4 | 4.025 | -48.1 | 0.097 | -83.5 | 0.524 | -134.1 |
| 6000 | 0.195 | -115.1 | 3.822 | -67.5 | 0.096 | -100.3 | 0.508 | -156.3 |
| 6100 | 0.309 | -137.5 | 3.523 | -86.8 | 0.091 | -117.0 | 0.502 | -178.2 |

Case Style "IB"
Metal-Ceramic Hermetic Package



1. Gate
2. Source (Flange)
3. Drain

Unit: mm(inches)



FLM5359-4F

C-Band Internally Matched FET

For further information please contact:

<http://global-sei.com/Electro-optic/about/office.html>

CAUTION

This product contains **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.