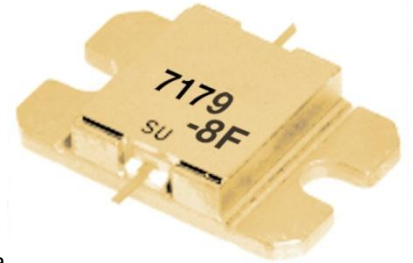


FEATURES

- High Output Power: $P_{1dB} = 39.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 35\%$ (Typ.)
- Low IM3 = $-46\text{dBc}@P_o = 28.5\text{dBm}$
- Broad Band: 7.1 to 7.9GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package



DESCRIPTION

The FLM7179-8F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

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

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

| Item | Symbol | Condition | Rating | Unit |
|-------------------------|-----------|------------------------|-------------|-------|
| Drain-Source Voltage | V_{DS} | | 15 | V |
| Gate-Source Voltage | V_{GS} | | -5 | V |
| Total Power Dissipation | P_T | $T_c = 25\text{deg.C}$ | 42.8 | 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 32.0 and -4.4 mA respectively with gate resistance of 100ohm.

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25\text{deg.C}$)

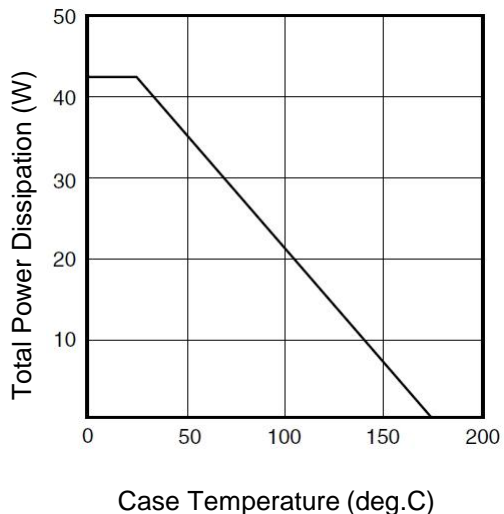
| Item | Symbol | Test Conditions | Limit | | | Unit |
|--------------------------------------|-----------------|--|-------|------|------|---------|
| | | | Min. | Typ. | Max. | |
| Saturated Drain Current | I_{DSS} | $V_{DS}=5V, V_{GS}=0V$ | - | 3400 | 5200 | mA |
| Transconductance | g_m | $V_{DS}=5V, I_{DS}=2200\text{mA}$ | - | 3400 | - | mS |
| Pinch-off Voltage | V_p | $V_{DS}=5V, I_{DS}=170\text{mA}$ | -0.5 | -1.5 | -3.0 | V |
| Gate Source Breakdown Voltage | V_{GSO} | $I_{GS}=-170\mu A$ | -5.0 | - | - | V |
| Output Power at 1dB G.C.P. | P_{1dB} | $V_{DS}=10V,$ $I_{DS}=0.65 I_{DSS}$ (Typ.), $f=7.1$ to 7.9 GHz, | 38.5 | 39.5 | - | dBm |
| Power Gain at 1dB G.C.P. | G_{1dB} | | 8.0 | 9.0 | - | dB |
| Drain Current | I_{dsr} | $Z_S=Z_L=50\text{ohm}$ | - | 2200 | 2600 | mA |
| Power-added Efficiency | η_{add} | | - | 35 | - | % |
| Gain Flatness | ΔG | | - | - | 1.2 | dB |
| 3rd Order Intermodulation Distortion | IM_3 | $f = 7.9$ GHz, $\Delta f = 10$ 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 | 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

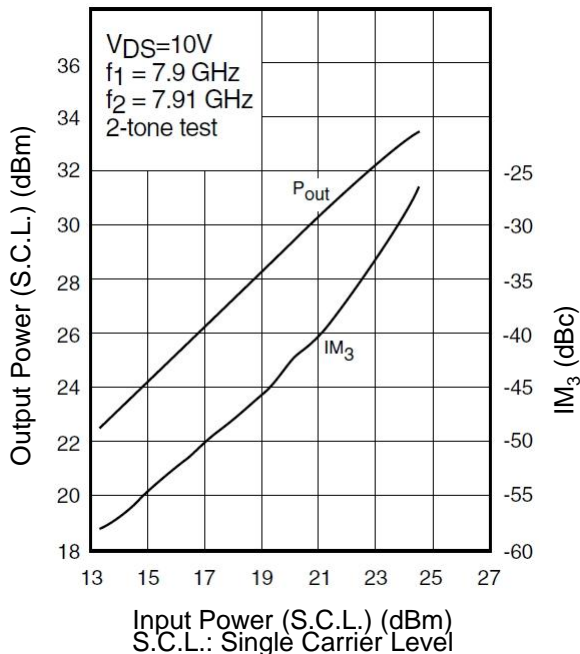
| | | |
|-----------------|----------|----------------|
| CASE STYLE | IB | |
| ESD | Class 3A | 4000V to 8000V |
| RoHS Compliance | Yes | |

Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

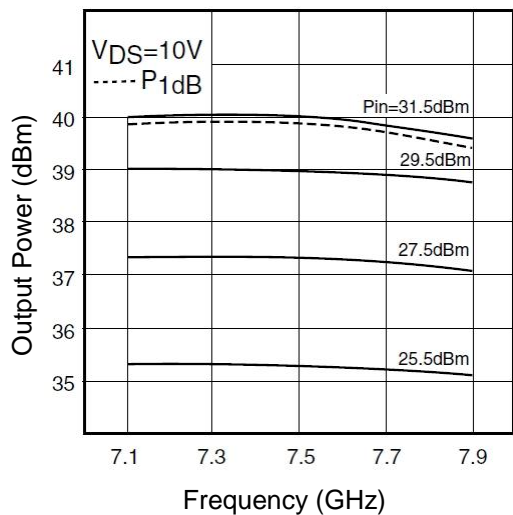
POWER DERATING CURVE



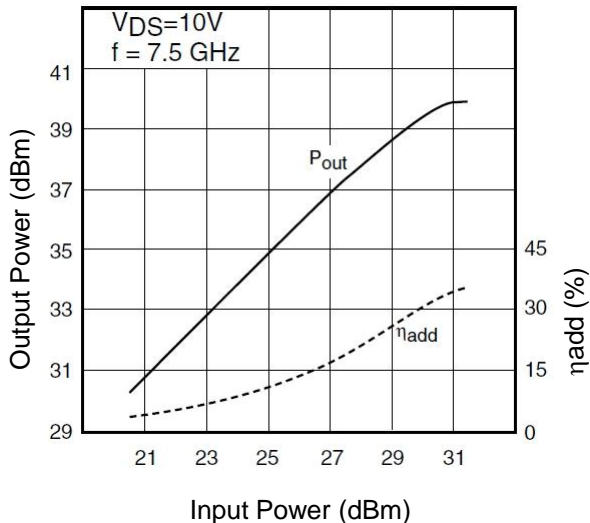
OUTPUT POWER & IM₃ vs. INPUT POWER

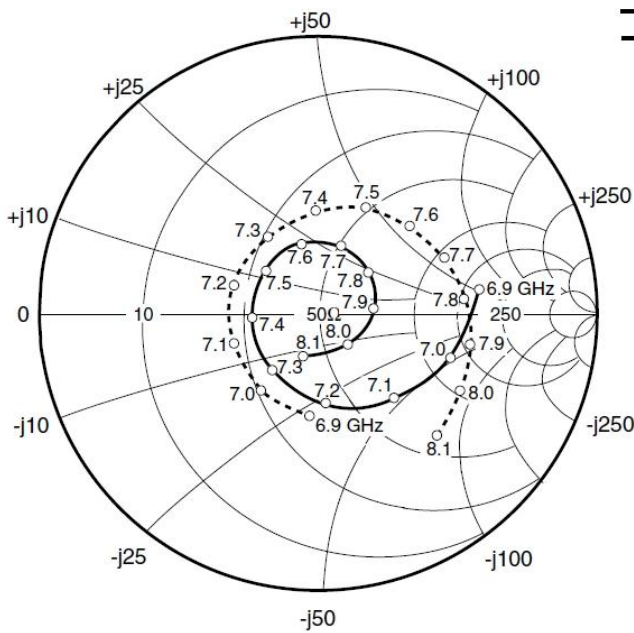


OUTPUT POWER vs. FREQUENCY

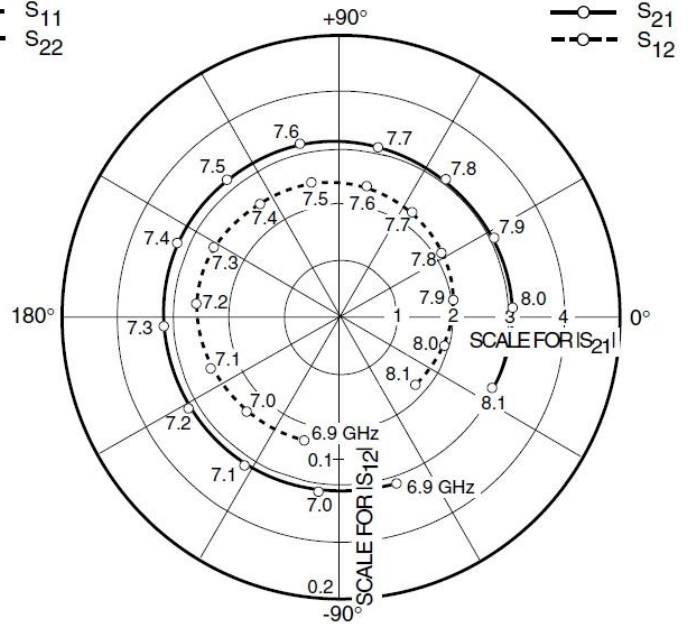


OUTPUT POWER vs. INPUT POWER





—○— S₁₁
- -○- - S₂₂



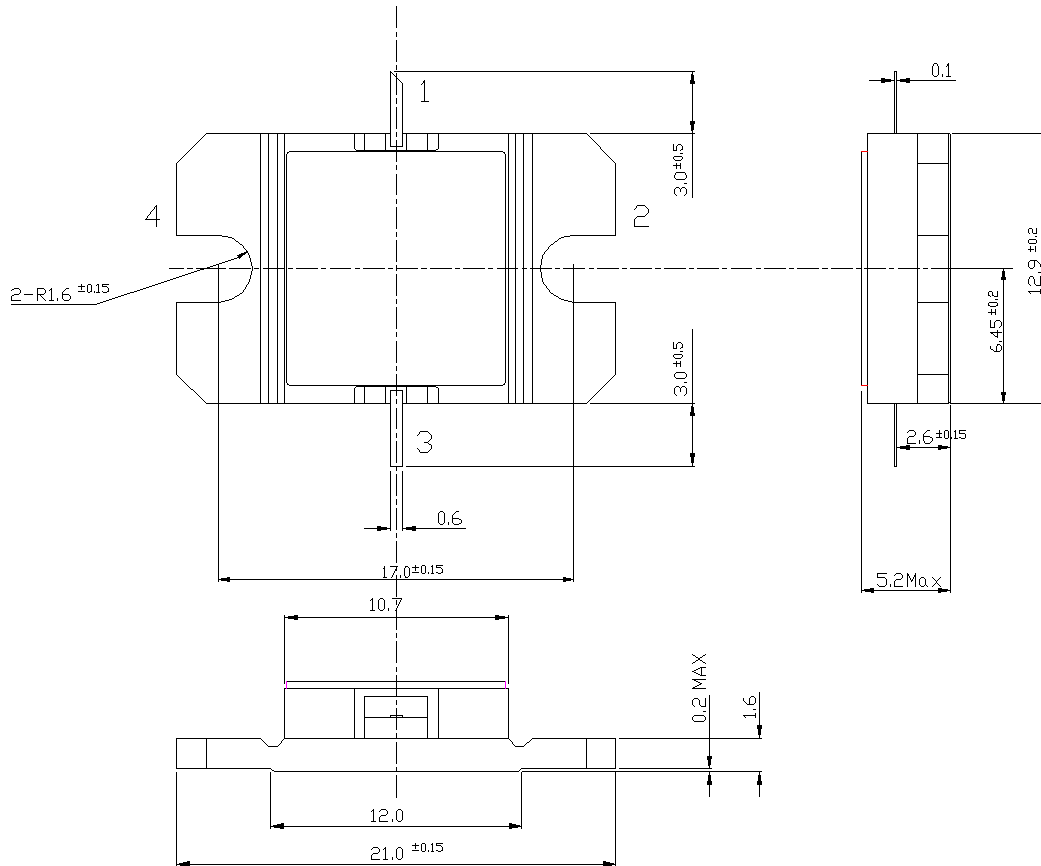
—○— S₂₁
- -○- - S₁₂

S-PARAMETERS

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

| FREQUENCY (MHz) | S ₁₁ | | S ₂₁ | | S ₁₂ | | S ₂₂ | |
|--------------------|-----------------|--------|-----------------|--------|-----------------|--------|-----------------|--------|
| | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 6900 | 0.583 | 8.7 | 3.108 | -71.7 | 0.091 | -112.1 | 0.373 | -95.0 |
| 7000 | 0.504 | -18.5 | 3.141 | -97.1 | 0.097 | -134.9 | 0.343 | -125.7 |
| 7100 | 0.410 | -47.7 | 3.170 | -122.4 | 0.102 | -158.3 | 0.318 | -159.5 |
| 7200 | 0.323 | -85.2 | 3.217 | -149.4 | 0.105 | 175.8 | 0.311 | 161.9 |
| 7300 | 0.259 | -128.8 | 3.251 | -176.6 | 0.104 | 151.2 | 0.331 | 123.8 |
| 7400 | 0.237 | -177.4 | 3.232 | 156.3 | 0.101 | 127.2 | 0.373 | 91.6 |
| 7500 | 0.245 | 139.5 | 3.214 | 129.9 | 0.098 | 102.8 | 0.420 | 66.0 |
| 7600 | 0.262 | 103.7 | 3.188 | 103.9 | 0.095 | 79.5 | 0.461 | 44.1 |
| 7700 | 0.261 | 71.7 | 3.133 | 78.3 | 0.089 | 56.0 | 0.496 | 24.5 |
| 7800 | 0.237 | 40.0 | 3.094 | 52.8 | 0.086 | 31.9 | 0.524 | 6.3 |
| 7900 | 0.199 | 4.2 | 3.065 | 27.4 | 0.081 | 8.1 | 0.554 | -11.2 |
| 8000 | 0.151 | -44.6 | 3.037 | 1.9 | 0.077 | -15.5 | 0.586 | -28.4 |
| 8100 | 0.161 | -110.9 | 2.989 | -24.9 | 0.072 | -41.8 | 0.616 | -45.4 |

■ Package Outline
Case Style : IB



Pin Assignment

- 1 : Gate
- 2 : Source
- 3 : Drain
- 4 : Source

Unit : mm



FLM7179-8F

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.