

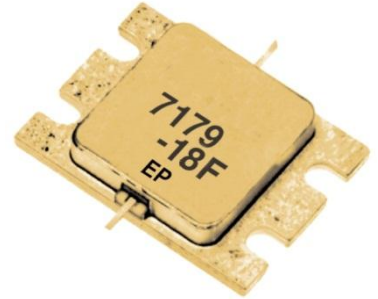
### FEATURES

- High Output Power:  $P_{1dB} = 42.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 8.0\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 30\%$  (Typ.)
- Low IM3:  $-46\text{dBc}@P_o = 32.0\text{dBm}$
- Broad Band: 7.1 to 7.9GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package

### DESCRIPTION

The FLM7179-18F 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 | $P_T$     | $T_c = 25\text{deg.C}$ | 83.3        | 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 48.0 and -8.4 mA respectively with gate resistance of 25ohm.

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

| Item                                 | Symbol          | Test Conditions                                                                                   | Limit |      |       | Unit    |
|--------------------------------------|-----------------|---------------------------------------------------------------------------------------------------|-------|------|-------|---------|
|                                      |                 |                                                                                                   | Min.  | Typ. | Max.  |         |
| Saturated Drain Current              | $I_{DSS}$       | $V_{DS}=5V, V_{GS}=0V$                                                                            | -     | 7.5  | 11.25 | A       |
| Transconductance                     | $g_m$           | $V_{DS}=5V, I_{DS}=4875\text{mA}$                                                                 | -     | 7.5  | -     | S       |
| Pinch-off Voltage                    | $V_p$           | $V_{DS}=5V, I_{DS}=375\text{mA}$                                                                  | -0.5  | -1.5 | -3.0  | V       |
| Gate Source Breakdown Voltage        | $V_{GSO}$       | $I_{GS}=-375\text{uA}$                                                                            | -5.0  | -    | -     | V       |
| Output Power at 1dB G.C.P.           | $P_{1dB}$       | $V_{DS}=10V,$<br>$I_{DS}=0.65 I_{DSS}$ (Typ.),<br>$f=7.1$ to $7.9$ GHz,<br>$Z_S=Z_L=50\text{ohm}$ | 42.0  | 42.5 | -     | dBm     |
| Power Gain at 1dB G.C.P.             | $G_{1dB}$       |                                                                                                   | 7.0   | 8.0  | -     | dB      |
| Drain Current                        | $I_{DSR}$       |                                                                                                   | -     | 4875 | 6000  | mA      |
| Power-added Efficiency               | $\eta_{add}$    |                                                                                                   | -     | 30   | -     | %       |
| Gain Flatness                        | $\Delta G$      |                                                                                                   | -     | -    | 1.2   | dB      |
| 3rd Order Intermodulation Distortion | $IM_3$          | $f = 7.9$ GHz, $\Delta f = 10$ MHz<br>2-Tone Test<br>$P_{out} = 32.0\text{dBm}$ S.C.L.            | -44   | -46  | -     | dBc     |
| Thermal Resistance                   | $R_{th}$        | Channel to Case                                                                                   | -     | 1.6  | 1.8   | deg.C/W |
| Channel Temperature Rise             | $\Delta T_{ch}$ | $10V \times I_{DSR} \times R_{th}$                                                                | -     | -    | 80    | deg.C   |

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

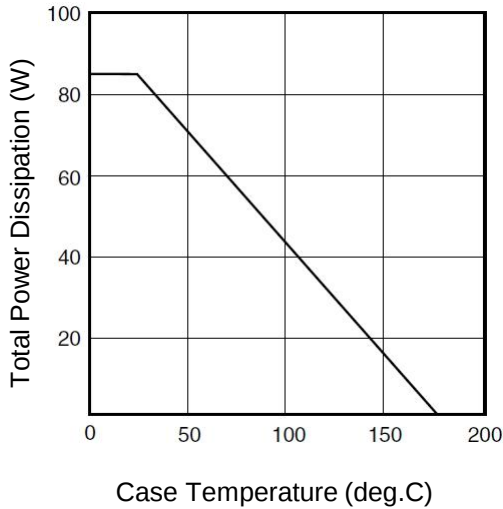
|            |    |
|------------|----|
| CASE STYLE | IK |
|------------|----|

|     |          |                |
|-----|----------|----------------|
| ESD | Class 3A | 4000V to 8000V |
|-----|----------|----------------|

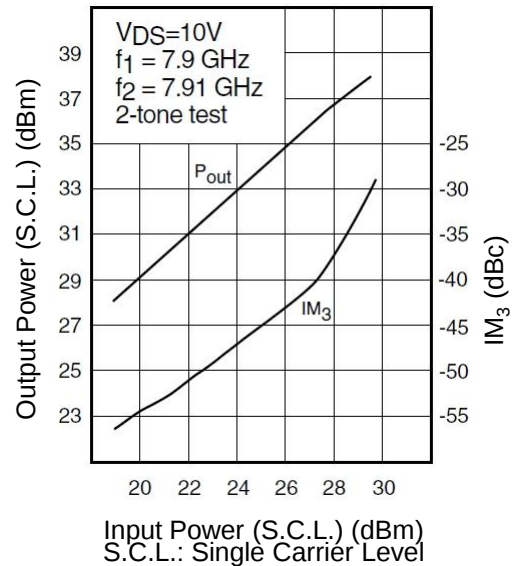
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

|                 |     |
|-----------------|-----|
| RoHS Compliance | Yes |
|-----------------|-----|

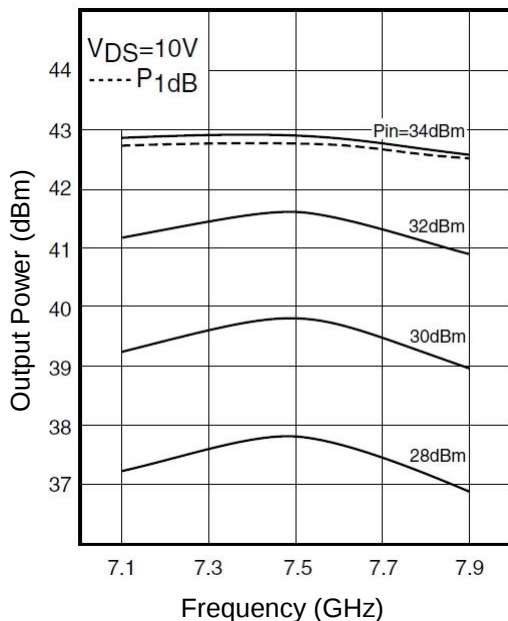
**POWER DERATING CURVE**



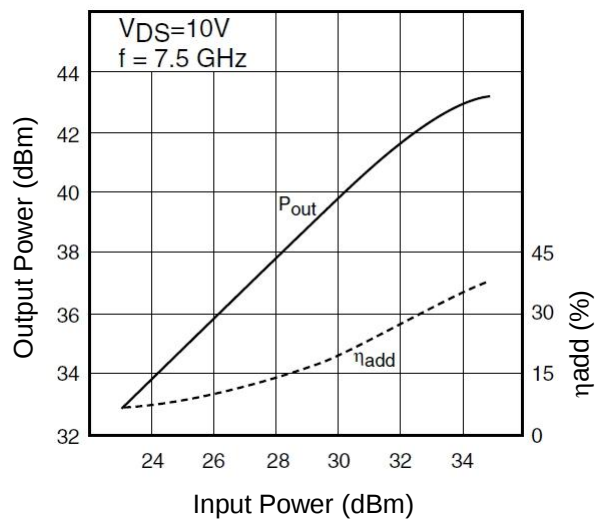
**OUTPUT POWER &  $IM_3$  vs. INPUT POWER**

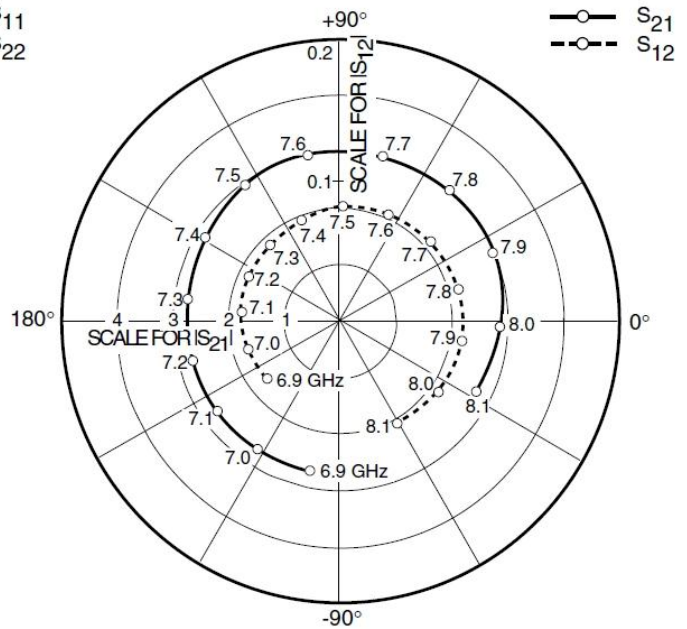
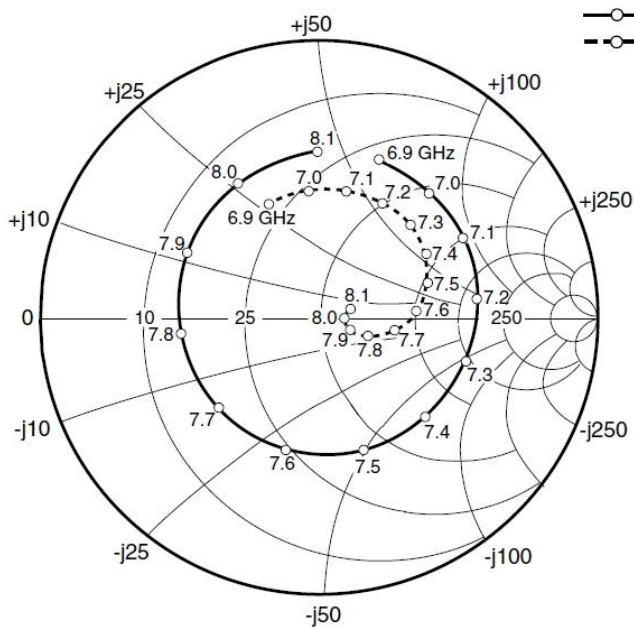


**OUTPUT POWER vs. FREQUENCY**



**OUTPUT POWER vs. INPUT POWER**





### S-PARAMETERS

$V_{DS} = 10V$ ,  $I_{DS} = 4875mA$

| FREQUENCY<br>(MHz) | S11   |        | S21   |        | S12   |        | S22   |       |
|--------------------|-------|--------|-------|--------|-------|--------|-------|-------|
|                    | MAG   | ANG    | MAG   | ANG    | MAG   | ANG    | MAG   | ANG   |
| 6900               | 0.608 | 69.8   | 2.712 | -101.5 | 0.067 | -142.1 | 0.448 | 114.3 |
| 7000               | 0.595 | 49.1   | 2.703 | -123.1 | 0.069 | -162.8 | 0.458 | 95.0  |
| 7100               | 0.588 | 29.2   | 2.712 | -143.6 | 0.071 | 175.7  | 0.465 | 77.6  |
| 7200               | 0.567 | 6.8    | 2.744 | -165.5 | 0.072 | 154.6  | 0.470 | 60.9  |
| 7300               | 0.550 | -16.7  | 2.799 | 172.2  | 0.075 | 133.4  | 0.465 | 45.7  |
| 7400               | 0.526 | -43.1  | 2.868 | 149.3  | 0.077 | 111.5  | 0.446 | 31.1  |
| 7500               | 0.507 | -71.6  | 2.943 | 125.5  | 0.081 | 88.8   | 0.410 | 17.4  |
| 7600               | 0.493 | -103.7 | 3.008 | 101.1  | 0.083 | 66.0   | 0.351 | 3.8   |
| 7700               | 0.484 | -137.3 | 3.037 | 75.7   | 0.086 | 41.2   | 0.273 | -9.6  |
| 7800               | 0.500 | -172.8 | 3.030 | 49.8   | 0.090 | 15.9   | 0.189 | -20.3 |
| 7900               | 0.527 | 153.3  | 2.973 | 23.9   | 0.088 | -8.3   | 0.118 | -21.9 |
| 8000               | 0.571 | 121.0  | 2.865 | -2.1   | 0.086 | -34.7  | 0.090 | -1.4  |
| 8100               | 0.605 | 90.9   | 2.722 | -27.5  | 0.083 | -60.3  | 0.117 | 13.2  |

[illegible]

Unit : mm



# **FLM7179-18F**

***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.