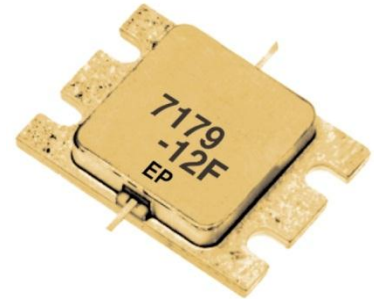


### FEATURES

- High Output Power: P1dB = 41.5dBm (Typ.)
- High Gain: G1dB = 9.0dB (Typ.)
- High PAE:  $\eta_{add} = 38\%$  (Typ.)
- Low IM3 = -46dBc@Po = 30.5dBm
- Broad Band: 7.1 to 7.9GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed Package



### DESCRIPTION

The FLM7179-12F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

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

### ABSOLUTE MAXIMUM RATING (Case Temperature Tc=25deg.C)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_T$	$T_c = 25\text{deg.C}$	57.6	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 -5.6 mA respectively with gate resistance of 50ohm.

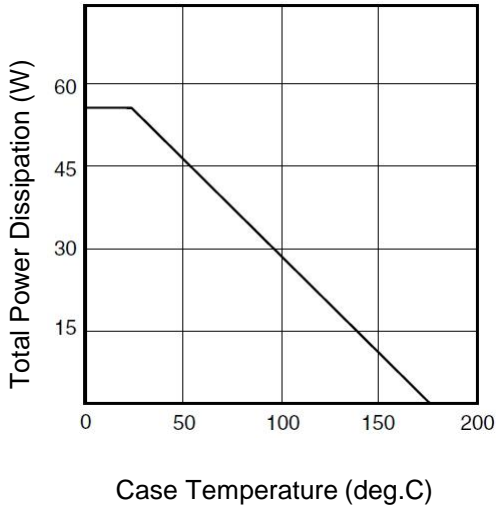
### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25deg.C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0V$	-	5000	7500	mA
Transconductance	$g_m$	$V_{DS}=5V, I_{DS}=3250\text{mA}$	-	5000	-	mS
Pinch-off Voltage	$V_p$	$V_{DS}=5V, I_{DS}=250\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-250\mu A$	-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,	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		8.0	9.0	-	dB
Drain Current	$I_{dsr}$	$Z_S=Z_L=50\text{ohm}$	-	3250	4000	mA
Power-added Efficiency	$\eta_{add}$		-	38	-	%
Gain Flatness	$\Delta G$		-	-	1.2	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 7.9$ GHz, $\Delta f = 10$ 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	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	deg.C

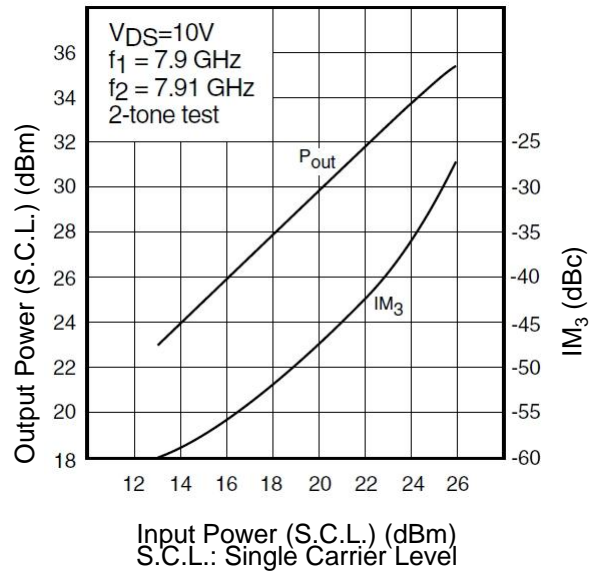
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

CASE STYLE	IK
ESD	Class 3A
	4000V to 8000V
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)	
RoHS Compliance	Yes

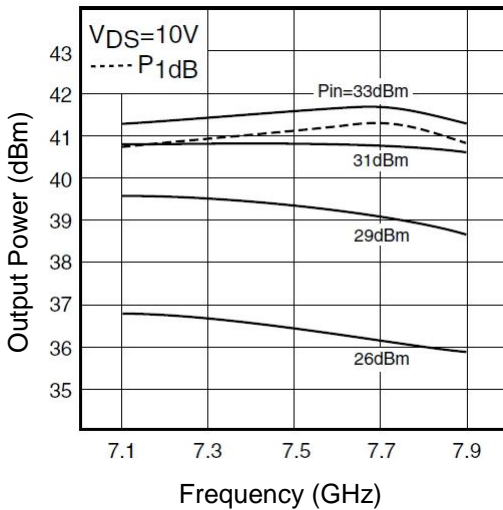
### POWER DERATING CURVE



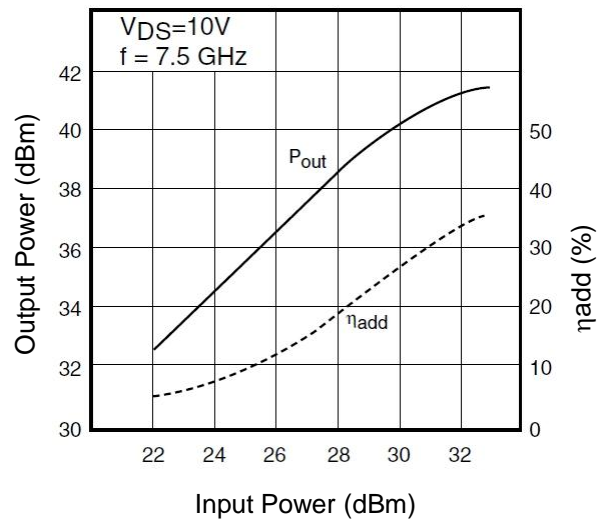
### OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER

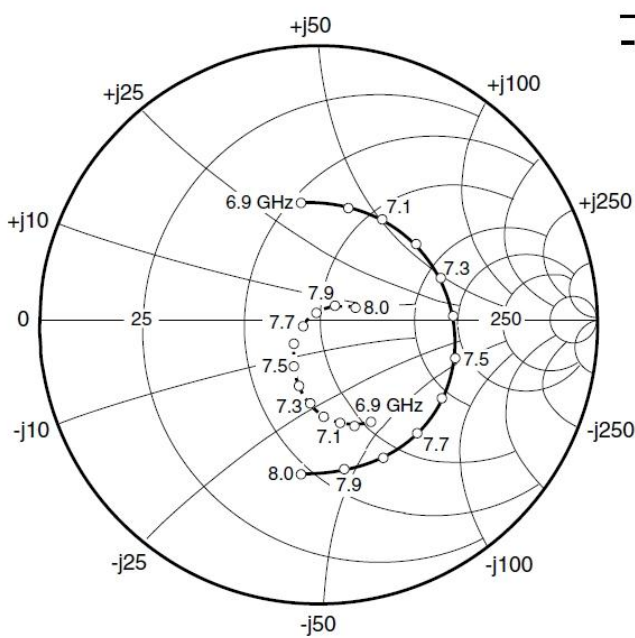


### OUTPUT POWER vs. FREQUENCY

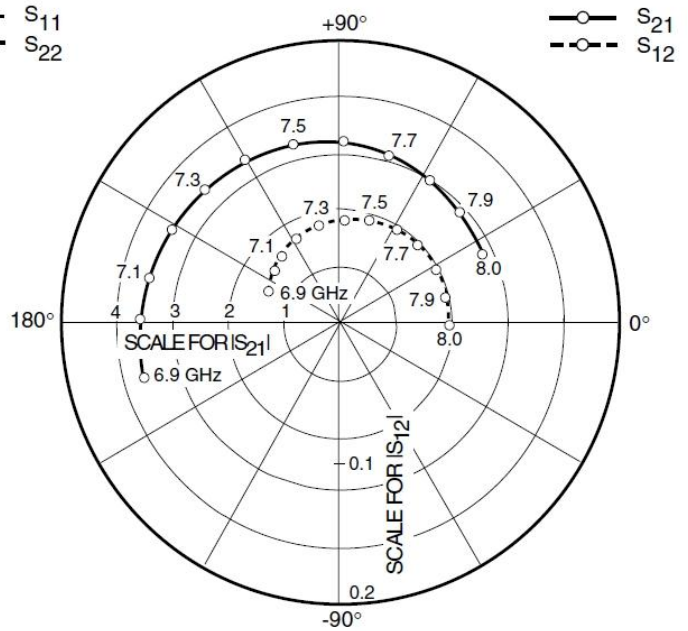


### OUTPUT POWER vs. INPUT POWER





—○— S<sub>11</sub>  
- -○- - S<sub>22</sub>



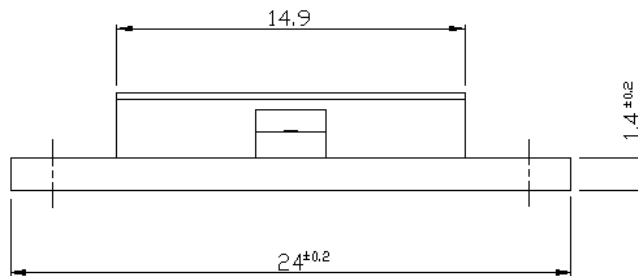
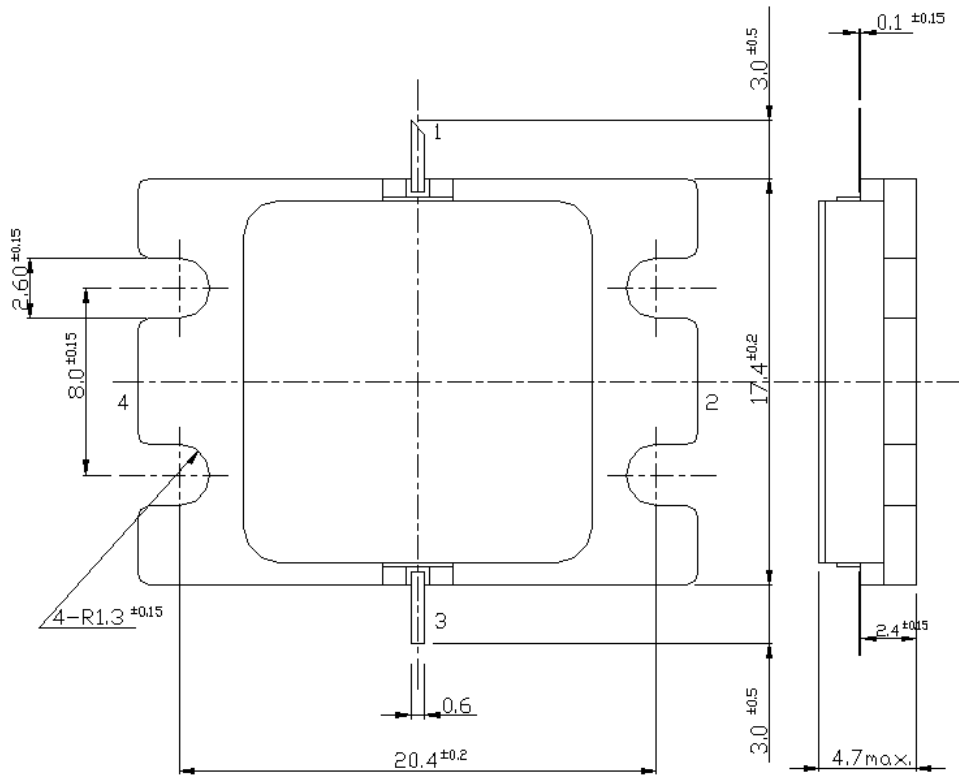
—○— S<sub>21</sub>  
- -○- - S<sub>12</sub>

### S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 3250mA$

FREQUENCY (MHz)	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6900	0.425	99.1	3.694	-164.7	0.056	156.4	0.408	-64.4
7000	0.418	76.0	3.616	179.1	0.060	141.9	0.398	-72.6
7100	0.424	58.4	3.553	167.2	0.063	131.9	0.378	-78.5
7200	0.439	38.0	3.477	151.7	0.067	118.1	0.347	-86.9
7300	0.460	19.0	3.409	136.2	0.072	101.9	0.304	-96.1
7400	0.483	0.7	3.336	120.6	0.074	88.1	0.252	-106.9
7500	0.502	-16.4	3.262	104.8	0.077	73.5	0.190	-118.4
7600	0.520	-33.0	3.180	89.3	0.077	59.3	0.127	-133.2
7700	0.535	-49.4	3.094	73.5	0.079	44.3	0.062	-154.6
7800	0.546	-65.3	3.007	57.6	0.078	28.8	0.023	107.8
7900	0.554	-80.8	2.913	41.8	0.078	12.6	0.073	40.9
8000	0.560	-96.4	2.819	25.7	0.078	-1.3	0.129	18.5

■ Package Outline  
 Case Style : IK



Pin Assignment

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

Unit : mm



# **FLM7179-12F**

***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.