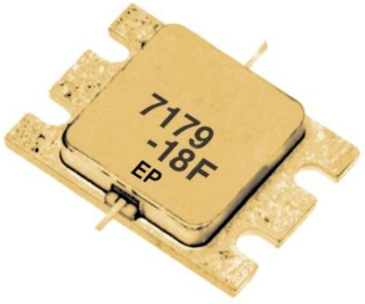
FLM7179-18F

C-Band Internally Matched FET



FEATURES

- High Output Power: P_{1dB} = 42.5dBm (Typ.)
- High Gain: G_{1dB} = 8.0dB (Typ.)
- High PAE: η_{add} = 30% (Typ.)
- Low IM3 = -46dBc@Po = 32.0dBm
- Broad Band: 7.1 to 7.9GHz
- Impedance Matched Zin/Zout = 50ohm
- 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 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 = 25deg.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 Tc=25deg.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}=4875mA	-	7.5	-	S
Pinch-off Voltage	V_p	V_{DS}=5V, I_{DS}=375mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS}=-375uA	-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, Z_S=Z_L=50ohm	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	η_{add}		-	30	-	%
Gain Flatness	ΔG		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM_3	f = 7.9 GHz, Δf = 10 MHz 2-Tone Test Pout = 32.0dBm S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.6	1.8	deg.C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	80	deg.C

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

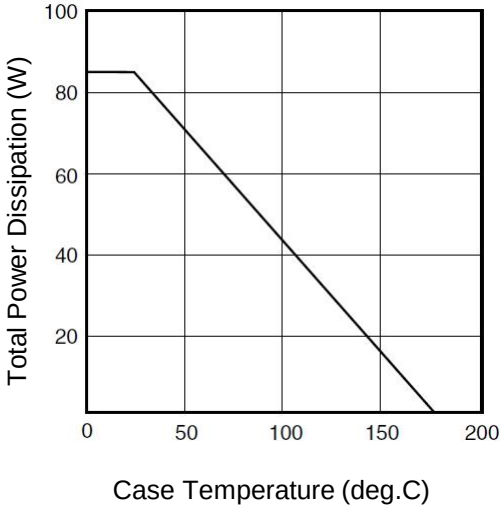
CASE STYLE	IK

ESD	Class 3A	4000V to 8000V

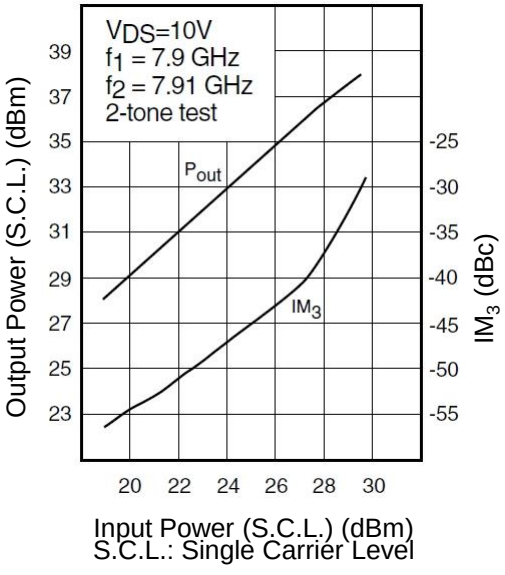
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

RoHS Compliance	Yes

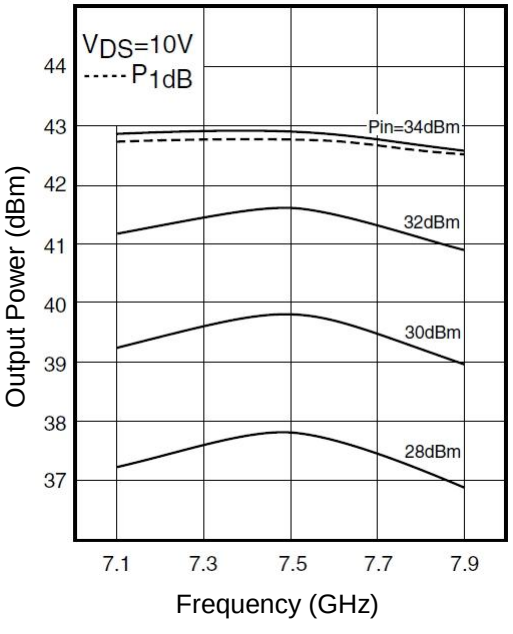
POWER DERATING CURVE



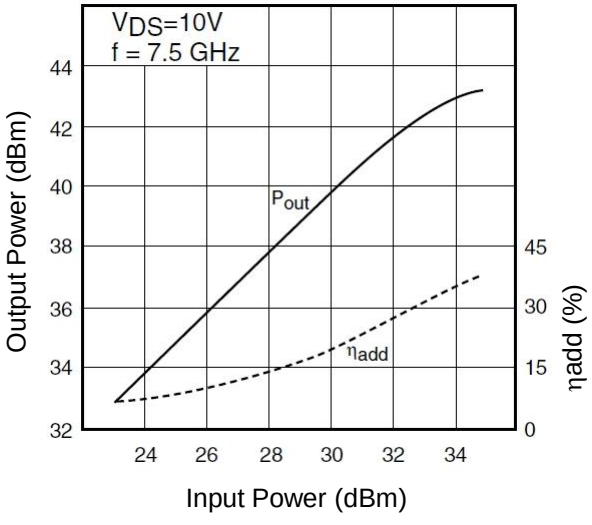
OUTPUT POWER & IM_3 vs. INPUT POWER

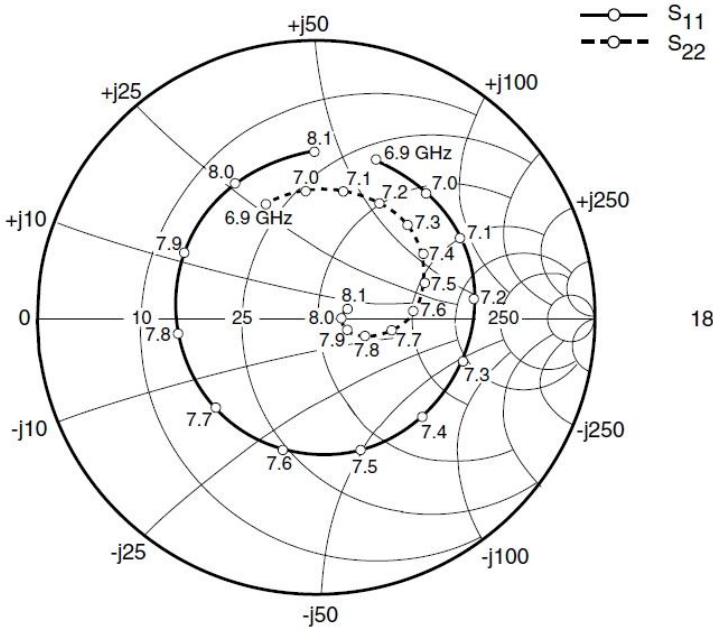


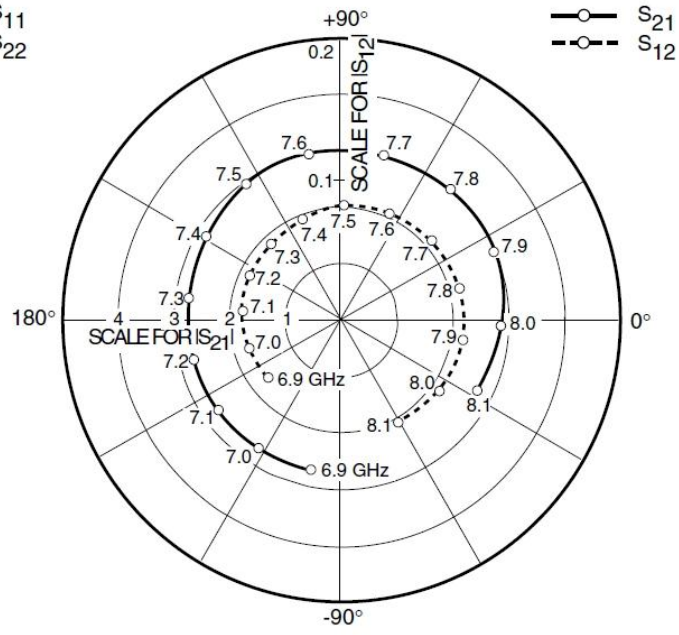
OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





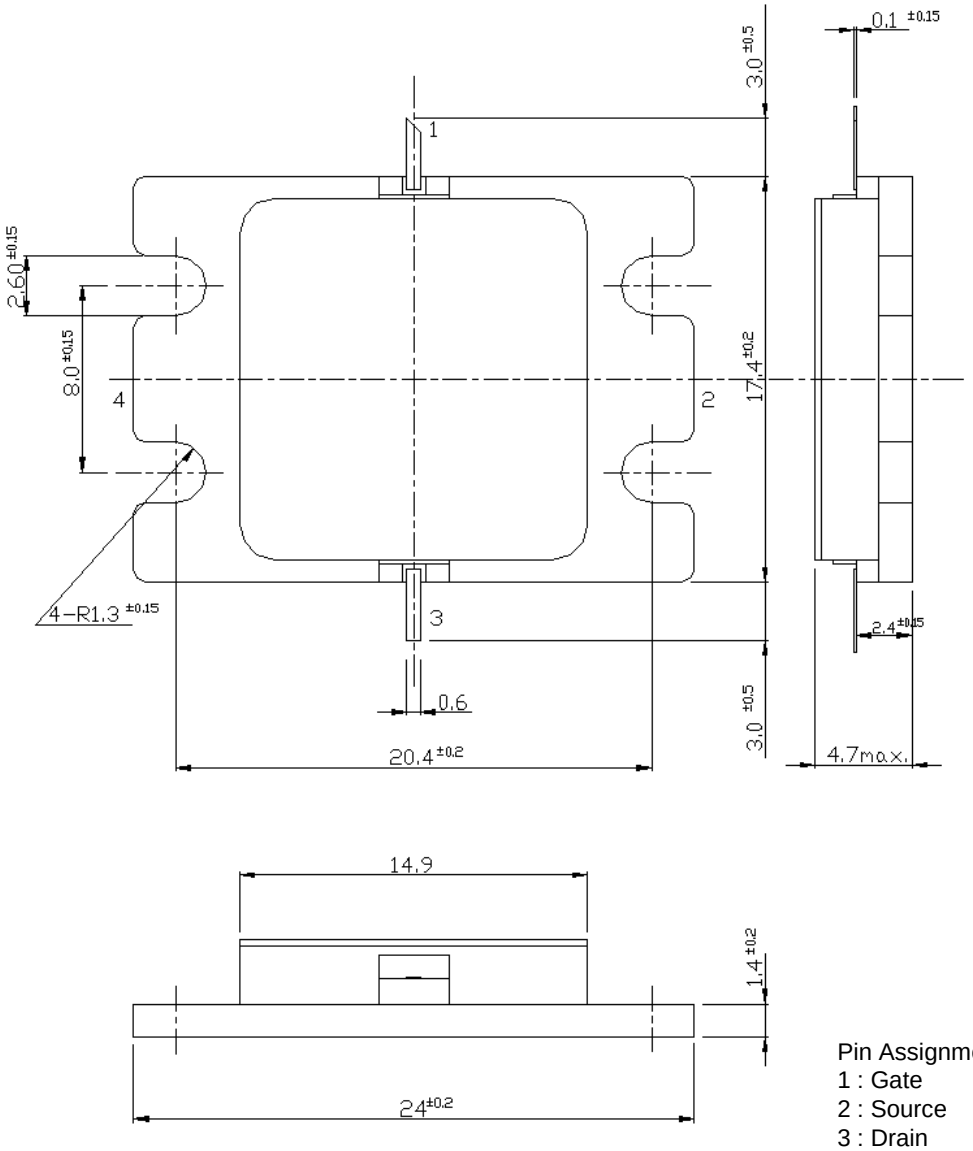


S-PARAMETERS

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

FREQUENCY	S11		S21		S12		S22	
(MHz)	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

■ **Package Outline**
Case Style : IK



Pin Assignment
1 : Gate
2 : Source
3 : Drain
4 : Source

Unit : mm

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.