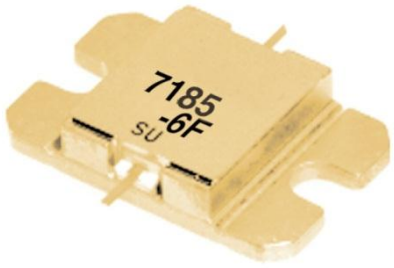
FLM7185-6F

C-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 38.0dBm (Typ.)
- High Gain: G_{1dB} = 8.0dB (Typ.)
- High PAE: η_{add} = 30% (Typ.)
- Low IM3 = -45dBc@Po = 27.0dBm
- Broad Band: 7.1 to 8.5GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed Package



DESCRIPTION

The FLM7185-6F 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	31.2	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 -2.8 mA respectively with gate resistance of 100ohm.

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	-	2500	3750	mA
Transconductance	g_m	V_{DS}=5V, I_{DS}=1625mA	-	2500	-	mS
Pinch-off Voltage	V_p	V_{DS}=5V, I_{DS}=125mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS}=-125uA	-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 8.5 GHz, Z_S=Z_L=50ohm	37.0	38.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.0	8.0	-	dB
Drain Current	I_{dsr}		-	1625	2000	mA
Power-added Efficiency	η_{add}		-	30	-	%
Gain Flatness	ΔG		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM_3	f = 8.5 GHz, Δf = 10 MHz 2-Tone Test Pout = 27.0dBm S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	4.0	4.8	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

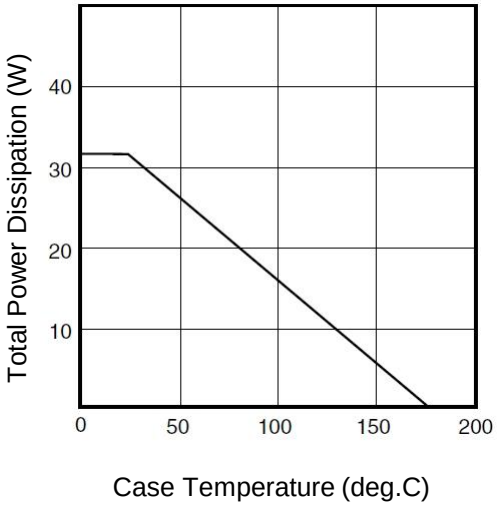
CASE STYLE	IB

ESD	Class 3A	4000V to 8000V

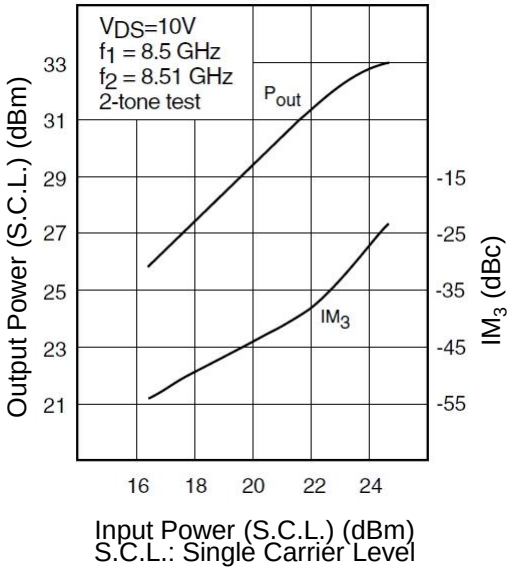
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

RoHS Compliance	Yes

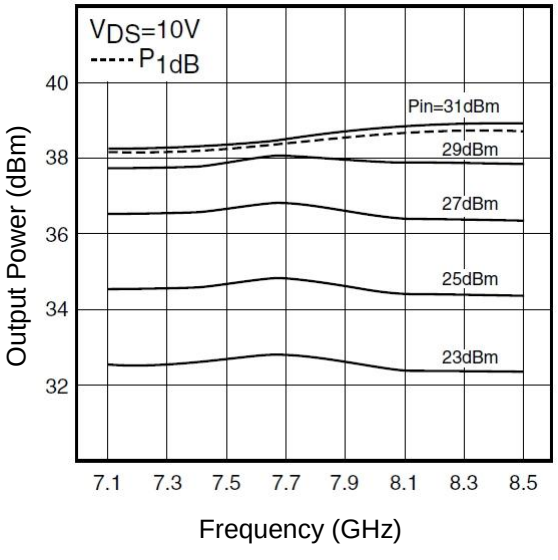
POWER DERATING CURVE



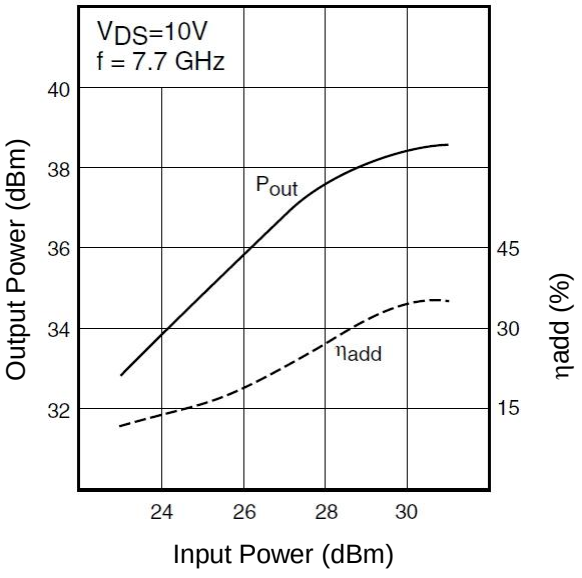
OUTPUT POWER & IM_3 vs. INPUT POWER

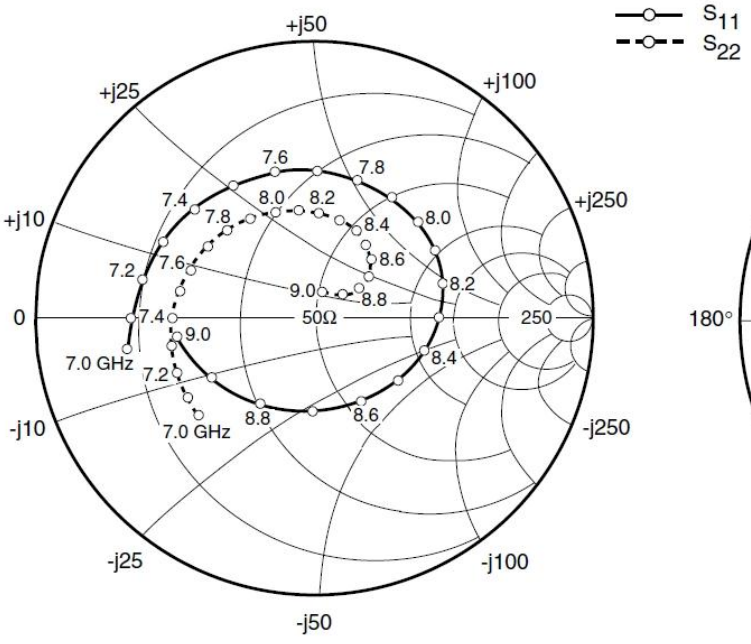


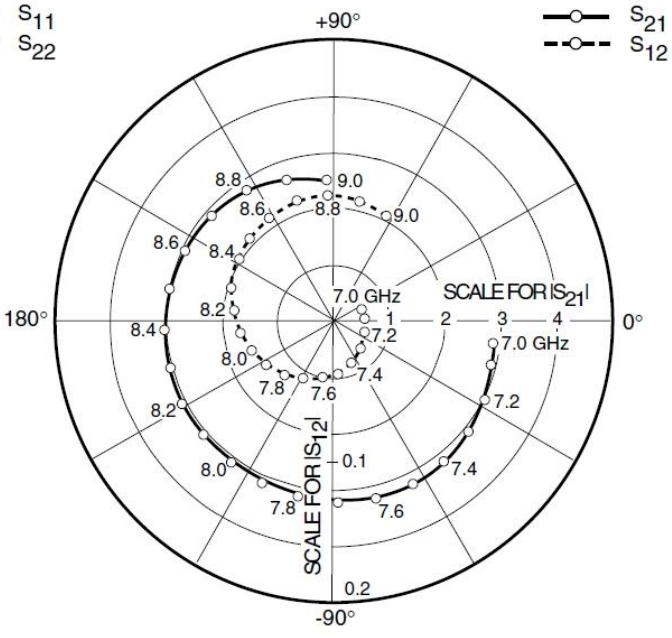
OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





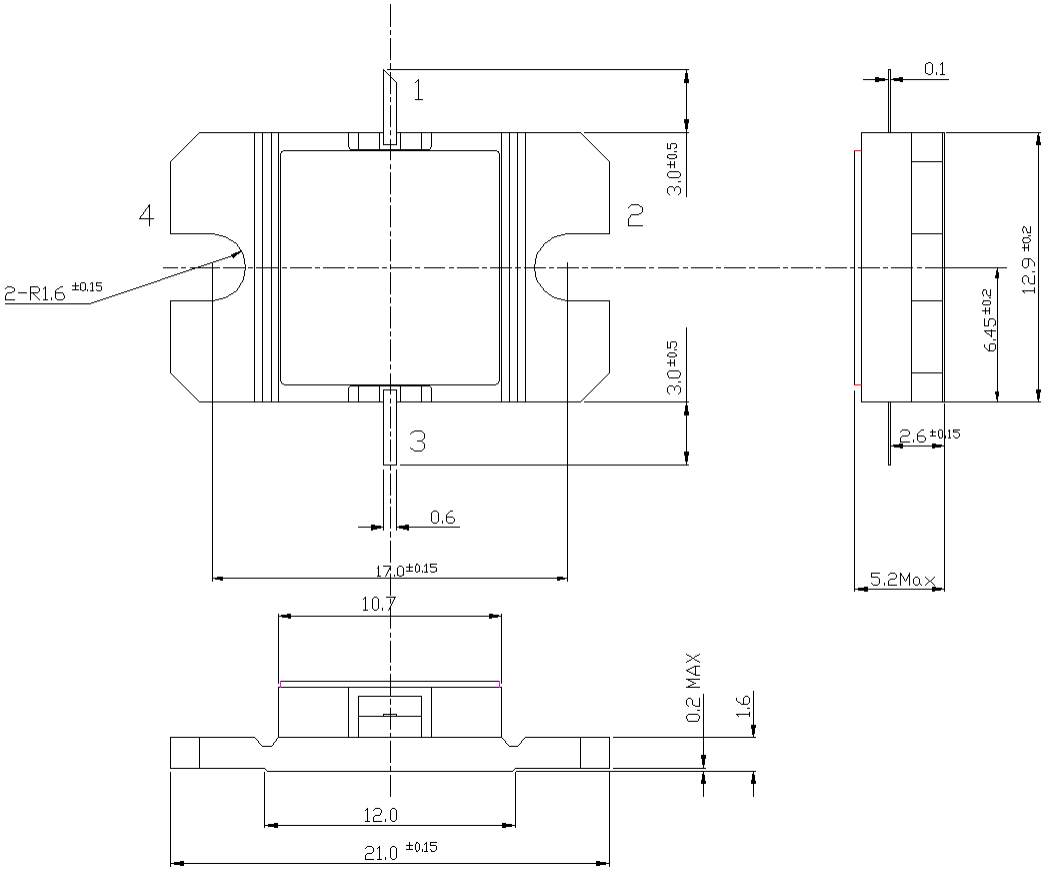


S-PARAMETERS

V_{DS} = 10V, I_{DS} = 1625mA

FREQUENCY	S11		S21		S12		S22	
(MHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
7000	0.679	-170.8	2.886	-7.3	0.020	26.6	0.547	-139.8
7100	0.659	-179.9	2.957	-15.1	0.022	1.7	0.540	-147.2
7200	0.634	167.0	3.032	-26.8	0.024	-22.2	0.533	-157.7
7300	0.609	152.9	3.098	-38.7	0.027	-47.5	0.522	-168.3
7400	0.583	137.3	3.148	-51.3	0.032	-67.6	0.507	-179.7
7500	0.563	121.2	3.183	-63.8	0.038	-86.9	0.492	169.3
7600	0.548	104.6	3.205	-76.4	0.041	-101.3	0.473	158.1
7700	0.536	88.4	3.206	-89.3	0.047	-119.7	0.457	146.1
7800	0.526	72.6	3.182	-101.5	0.052	-133.7	0.437	134.8
7900	0.520	57.7	3.157	-114.1	0.058	-147.8	0.421	122.8
8000	0.510	43.1	3.133	-126.5	0.063	-160.9	0.403	110.5
8100	0.497	29.2	3.107	-139.0	0.068	-172.9	0.391	98.2
8200	0.475	15.0	3.081	-151.4	0.072	173.9	0.376	86.9
8300	0.447	0.2	3.067	-164.1	0.077	162.4	0.362	75.1
8400	0.412	-16.6	3.051	-177.2	0.080	147.8	0.346	64.2
8500	0.375	-36.7	3.032	169.0	0.083	135.2	0.321	54.1
8600	0.344	-61.6	3.000	154.8	0.086	121.9	0.291	44.9
8700	0.337	-90.9	2.944	139.9	0.090	107.5	0.249	36.8
8800	0.364	-122.1	2.836	124.2	0.089	92.1	0.194	32.3
8900	0.423	-149.8	2.678	108.6	0.087	78.0	0.130	37.7
9000	0.500	-172.0	2.477	93.0	0.083	63.3	0.094	69.8

■ **Package Outline**
Case Style : IB



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.