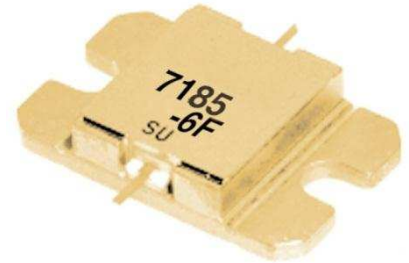


### FEATURES

- High Output Power:  $P_{1dB} = 38.0\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 8.0\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 30\%$  (Typ.)
- Low IM3 =  $-45\text{dBc}@P_o = 27.0\text{dBm}$
- Broad Band: 7.1 to 8.5GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- 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 $T_c=25\text{deg.C}$ )

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_T$	$T_c = 25\text{deg.C}$	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 $T_c=25\text{deg.C}$ )

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0V$	-	2500	3750	mA
Transconductance	$g_m$	$V_{DS}=5V, I_{DS}=1625\text{mA}$	-	2500	-	mS
Pinch-off Voltage	$V_p$	$V_{DS}=5V, I_{DS}=125\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-125\text{uA}$	-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, $Z_S=Z_L=50\text{ohm}$	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	$\eta_{add}$		-	30	-	%
Gain Flatness	$\Delta G$		-	-	1.2	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 8.5$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 27.0\text{dBm}$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	4.0	4.8	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	deg.C

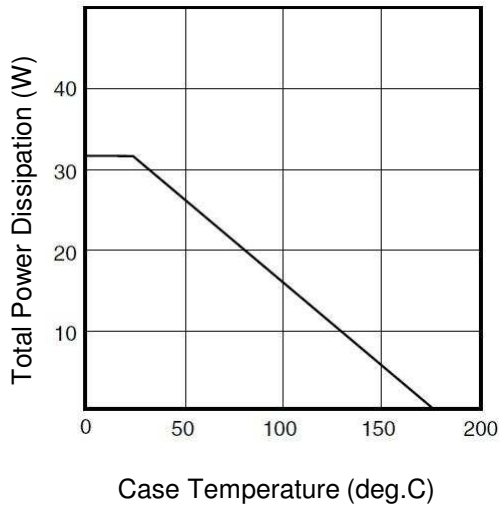
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

CASE STYLE	IB
ESD	Class 3A 4000V to 8000V

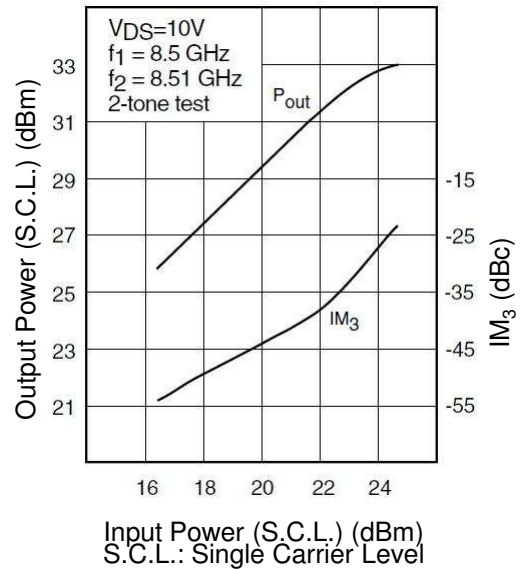
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

RoHS Compliance	Yes
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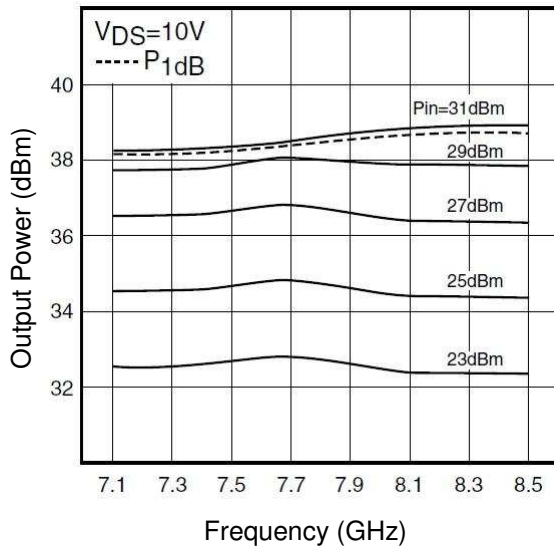
### POWER DERATING CURVE



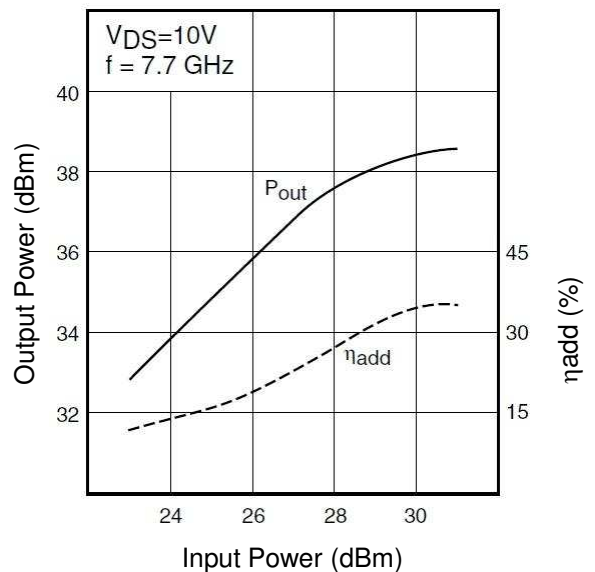
### OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER

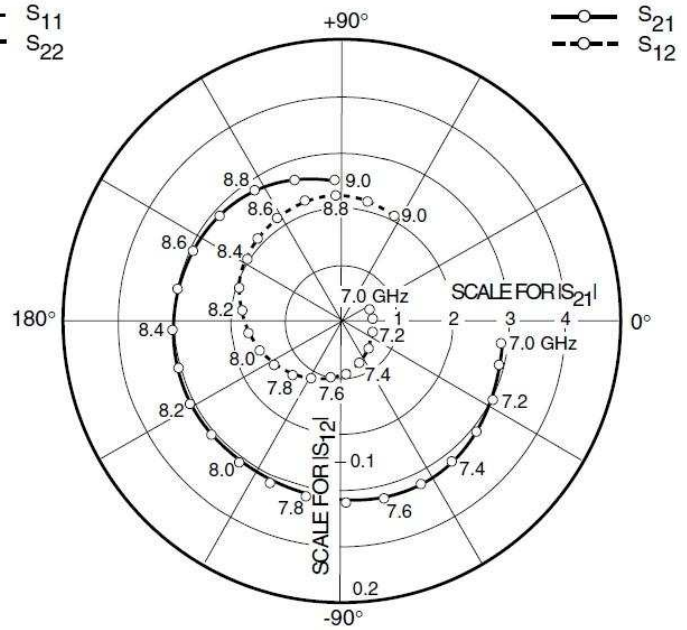
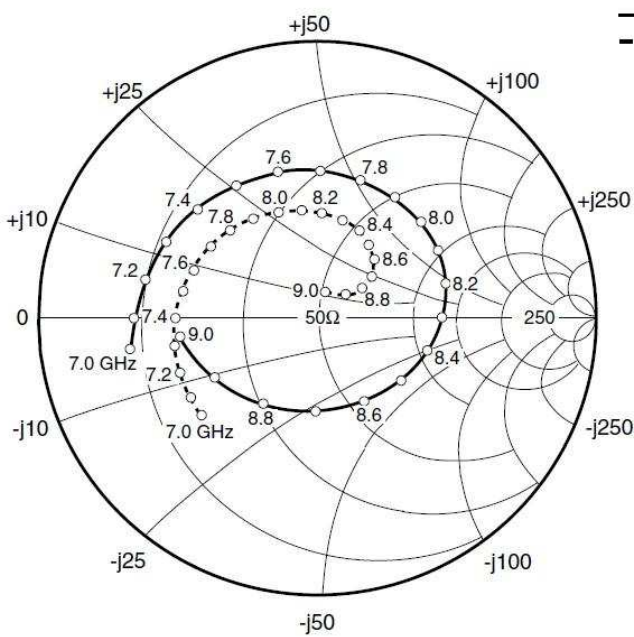


### OUTPUT POWER vs. FREQUENCY



### OUTPUT POWER vs. INPUT POWER



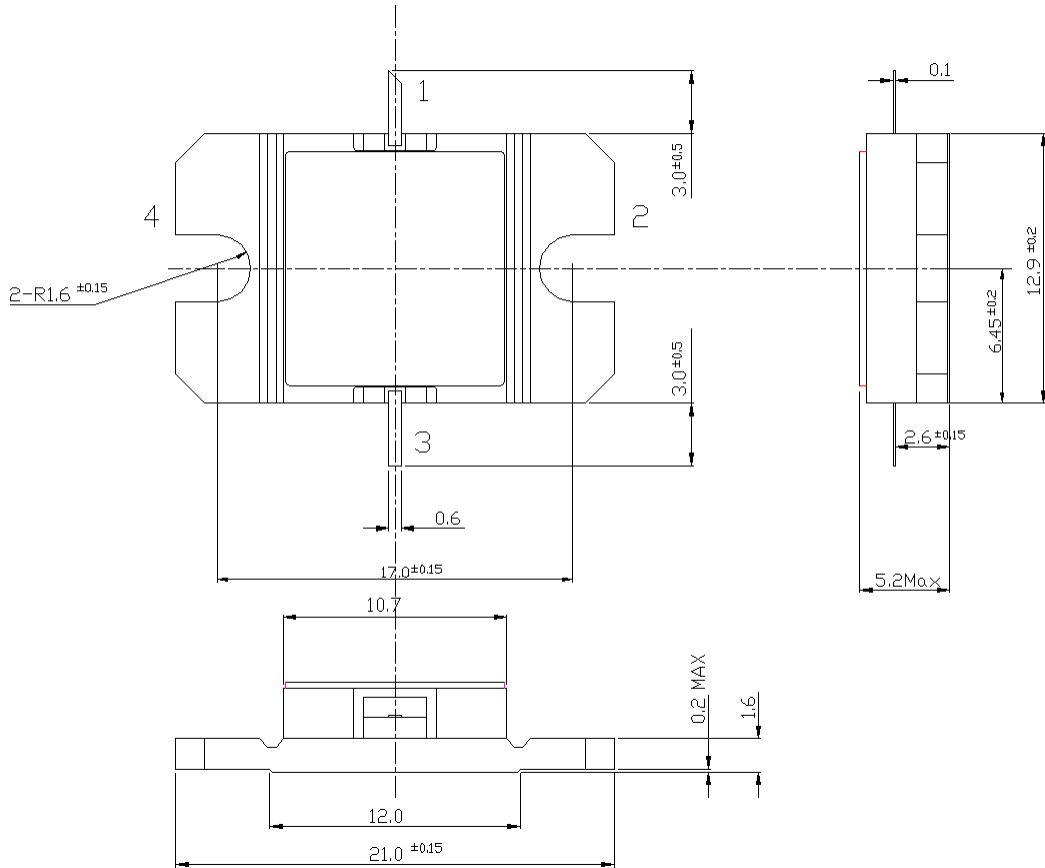


### S-PARAMETERS

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

FREQUENCY (MHz)	S11		S21		S12		S22	
	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



**FLM7185-5**

***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.