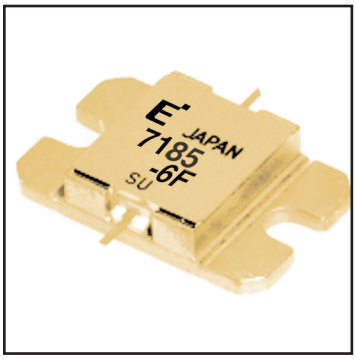
FLM7185-6F

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 IM_3 = -45dBc@Po = 27.0dBm
- Broad Band: 7.1 ~ 8.5GHz
- Impedance Matched Zin/Zout = 50Ω
- 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.

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

ABSOLUTE MAXIMUM RATING (Ambient Temperature Ta=25°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°C	31.2	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		175	°C

Fujitsu 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 100Ω.

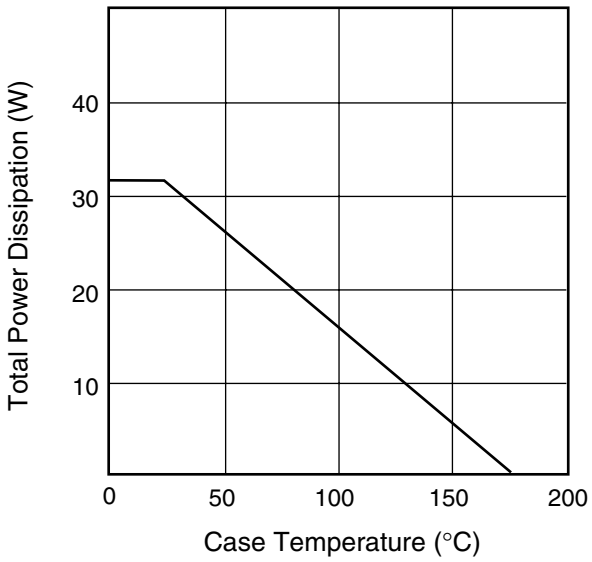
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	2500	3750	mA
Transconductance	gm	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} = -125μA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} =10V, I_{DS} = 0.65I_{DSS} (Typ.), f = 7.1 ~ 8.5 GHz, Z_S=Z_L= 50 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	η_{add}		-	30	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 8.5 GHz, Δf = 10 MHz 2-Tone Test P_{out} = 27.0dBm S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	4.0	4.8	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	80	°C

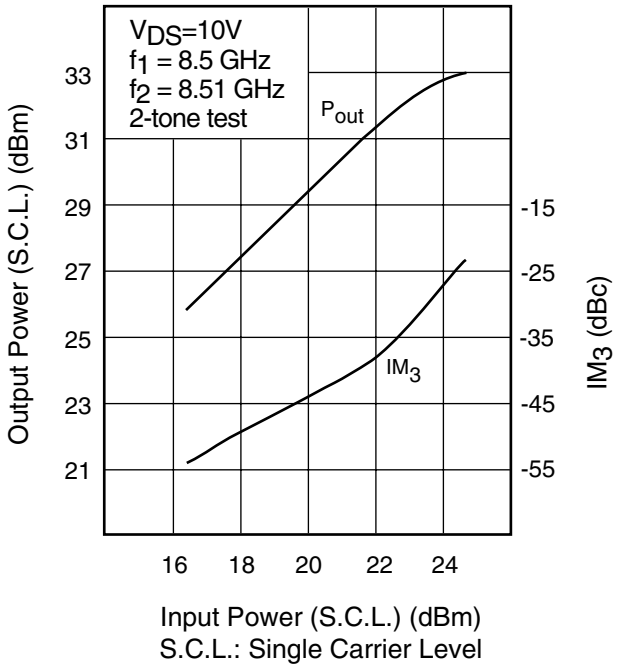
CASE STYLE: IB

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

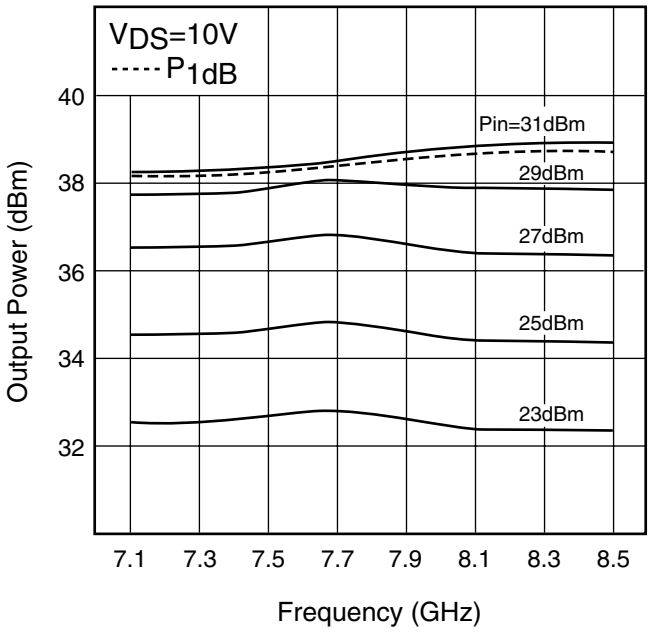
POWER DERATING CURVE



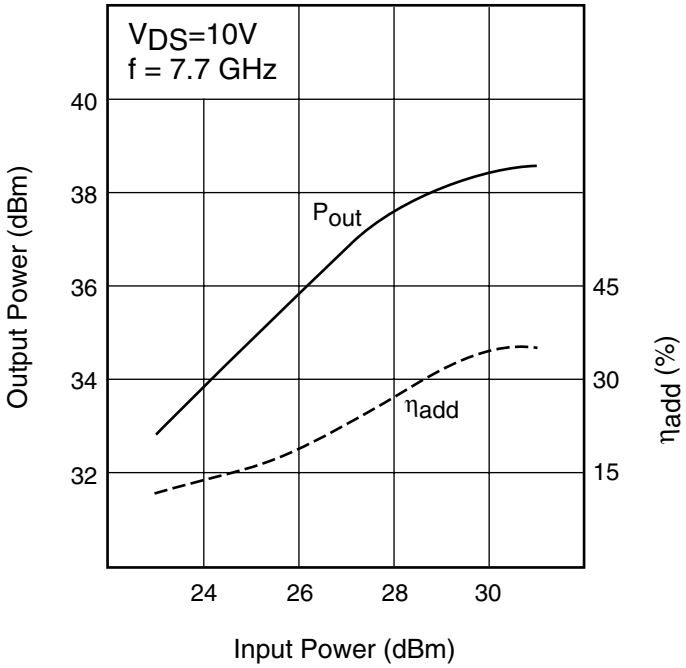
OUTPUT POWER & IM3 vs. INPUT POWER

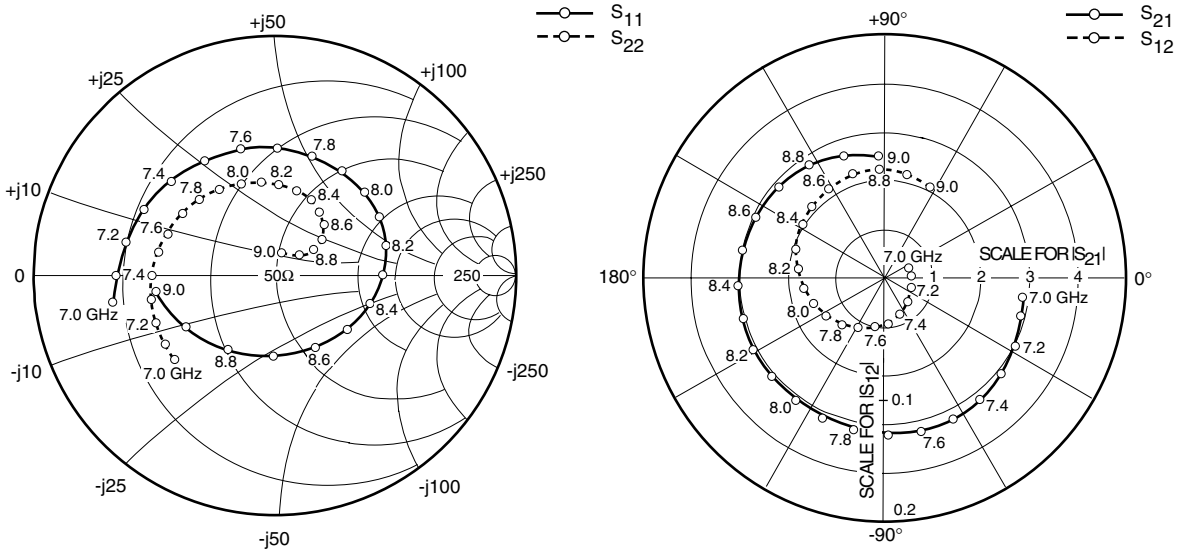


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





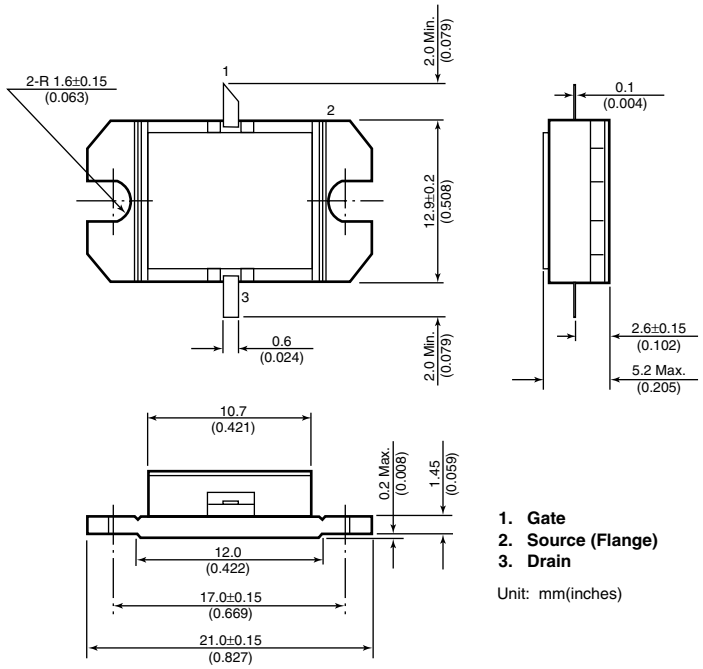
S-PARAMETERS

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

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
7000	.679	-170.8	2.886	-7.3	.020	26.6	.547	-139.8
7100	.659	-179.9	2.957	-15.1	.022	1.7	.540	-147.2
7200	.634	167.0	3.032	-26.8	.024	-22.2	.533	-157.7
7300	.609	152.9	3.098	-38.7	.027	-47.5	.522	-168.3
7400	.583	137.3	3.148	-51.3	.032	-67.6	.507	-179.7
7500	.563	121.2	3.183	-63.8	.038	-86.9	.492	169.3
7600	.548	104.6	3.205	-76.4	.041	-101.3	.473	158.1
7700	.536	88.4	3.206	-89.3	.047	-119.7	.457	146.1
7800	.526	72.6	3.182	-101.5	.052	-133.7	.437	134.8
7900	.520	57.7	3.157	-114.1	.058	-147.8	.421	122.8
8000	.510	43.1	3.133	-126.5	.063	-160.9	.403	110.5
8100	.497	29.2	3.107	-139.0	.068	-172.9	.391	98.2
8200	.475	15.0	3.081	-151.4	.072	173.9	.376	86.9
8300	.447	0.2	3.067	-164.1	.077	162.4	.362	75.1
8400	.412	-16.6	3.051	-177.2	.080	147.8	.346	64.2
8500	.375	-36.7	3.032	169.0	.083	135.2	.321	54.1
8600	.344	-61.6	3.000	154.8	.086	121.9	.291	44.9
8700	.337	-90.9	2.944	139.9	.090	107.5	.249	36.8
8800	.364	-122.1	2.836	124.2	.089	92.1	.194	32.3
8900	.423	-149.8	2.678	108.6	.087	78.0	.130	37.7
9000	.500	-172.0	2.477	93.0	.083	63.3	.094	69.8

Case Style "IB"

Metal-Ceramic Hermetic Package



1. **Gate**
2. **Source (Flange)**
3. **Drain**

Unit: mm(inches)

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CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- **Do not put this product 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.**