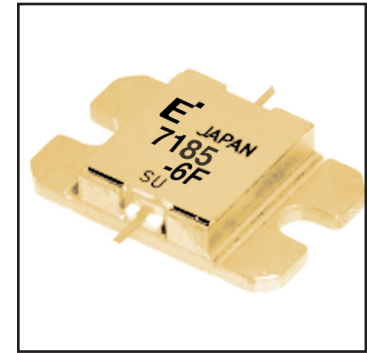


FEATURES

- 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 $IM_3 = -45\text{dBc}$ @ $P_o = 27.0\text{dBm}$
- Broad Band: 7.1 ~ 8.5GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- 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 $T_a=25^\circ\text{C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ\text{C}$	31.2	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ\text{C}$
Channel Temperature	T_{ch}		175	$^\circ\text{C}$

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 100 Ω .

ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	2500	3750	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 1625\text{mA}$	-	2500	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 125\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -125\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.65I_{DSS}$ (Typ.), $f = 7.1 \sim 8.5\text{GHz},$ $Z_S = Z_L = 50\text{ohm}$	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	η_{add}		-	30	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 8.5\text{GHz}, \Delta f = 10\text{MHz}$ 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	$^\circ\text{C}/\text{W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

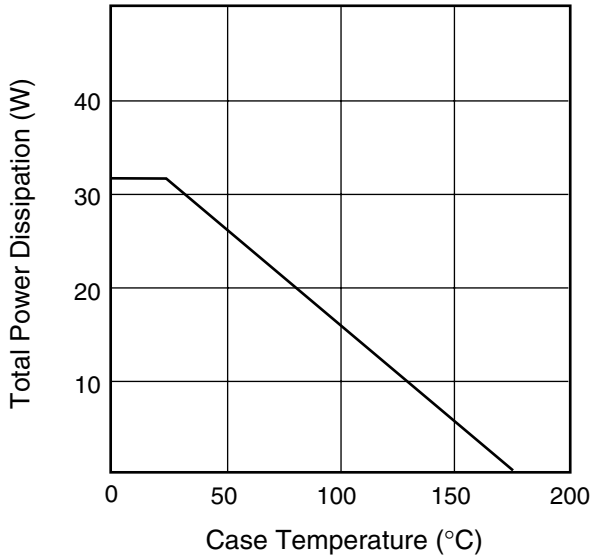
CASE STYLE: IB

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

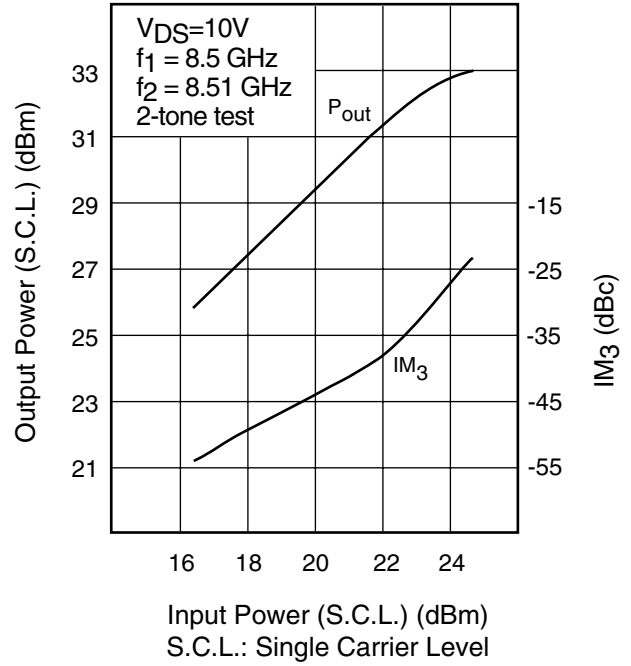
FLM7185-6F

C-Band Internally Matched FET

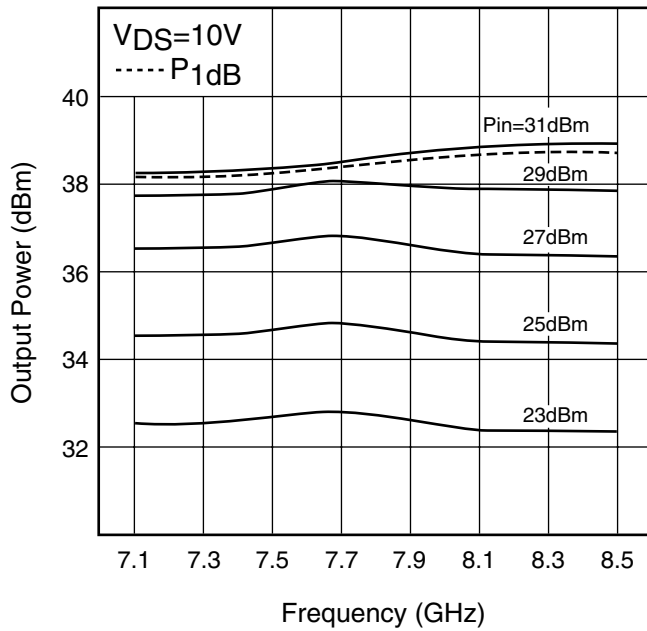
POWER DERATING CURVE



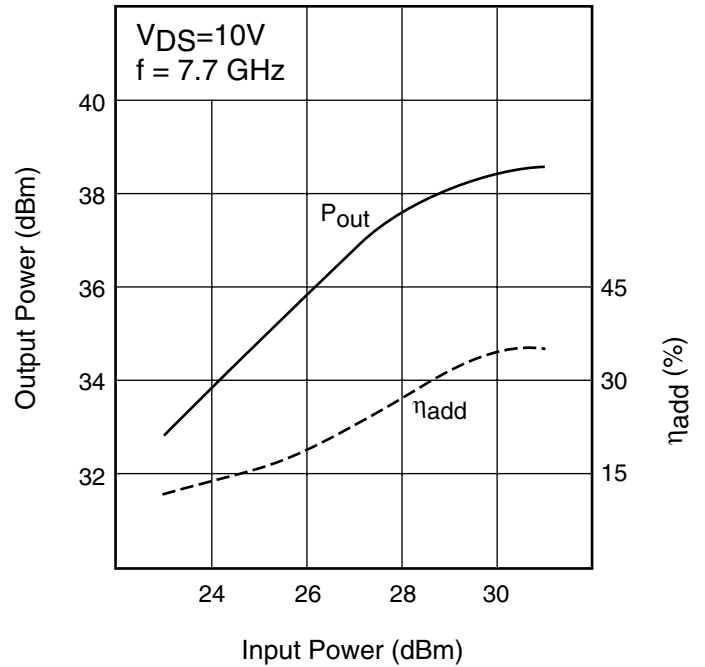
OUTPUT POWER & IM₃ vs. INPUT POWER

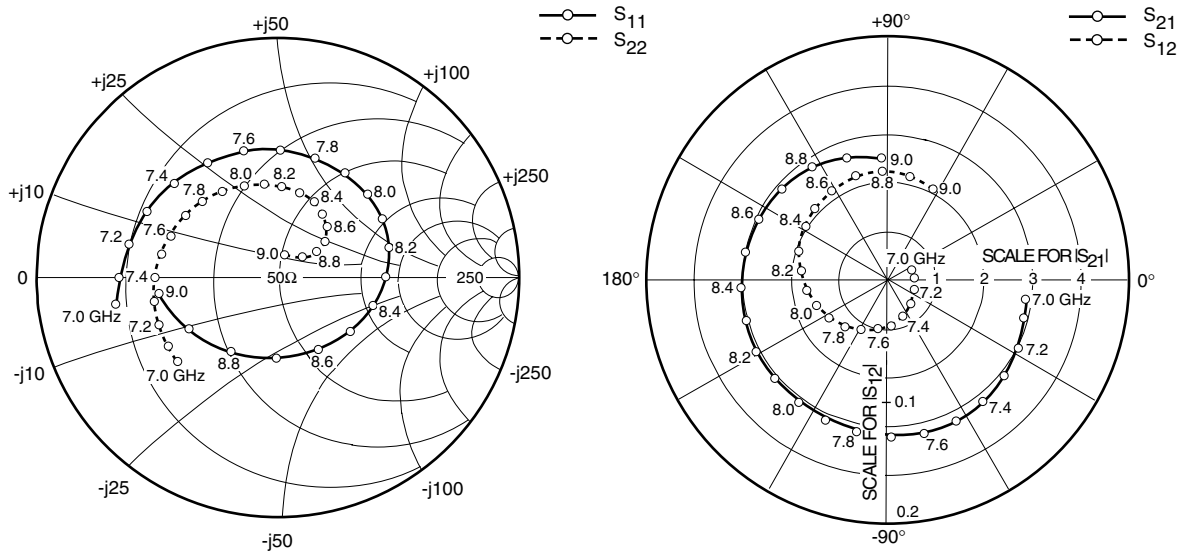


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

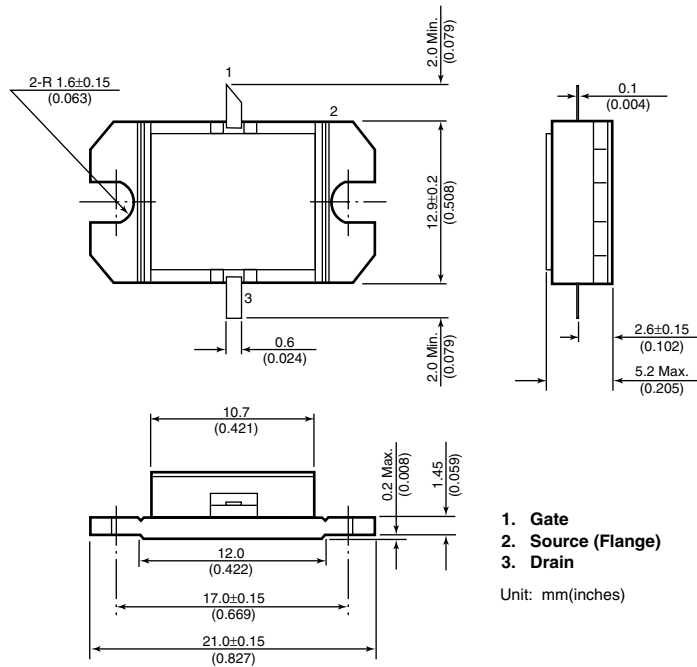
$V_{DS} = 10V, I_{DS} = 1625mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	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

FLM7185-6F

C-Band Internally Matched FET

Case Style "IB" Metal-Ceramic Hermetic Package



For further information please contact:

Eudyna Devices USA Inc.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
TEL: (408) 232-9500
FAX: (408) 428-9111
www.us.eudyna.com

Eudyna Devices Europe Ltd.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

Eudyna Devices Asia Pte Ltd.

Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd.
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

Eudyna Devices Inc.

Sales Division
1, Kanai-cho, Sakae-ku
Yokohama, 244-0845, Japan
TEL: +81-45-853-8156
FAX: +81-45-853-8170

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.

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