

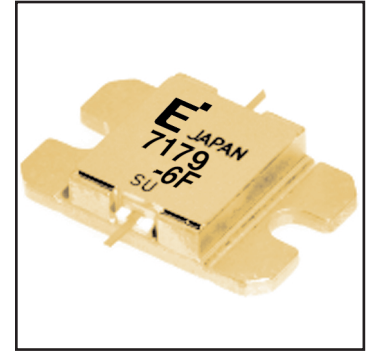
FEATURES

- High Output Power: $P_{1dB} = 38.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 34\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 27.5\text{dBm}$
- Broad Band: 7.1 ~ 7.9GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM7179-6F 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	$T_c = 25^\circ\text{C}$	37.5	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 .

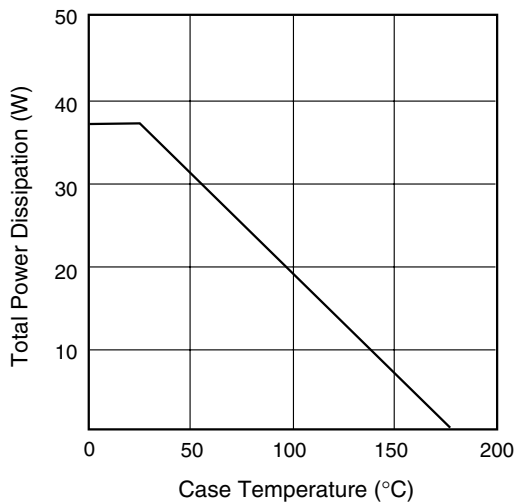
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

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.), $f = 7.1 \sim 7.9\text{GHz},$ $Z_S = Z_L = 50\text{ohm}$	37.5	38.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.0	9.0	-	dB
Drain Current	I_{dsr}		-	1625	2000	mA
Power-added Efficiency	η_{add}		-	34	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 7.9\text{GHz}, \Delta f = 10\text{MHz}$ 2-Tone Test $P_{out} = 27.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	3.0	4.0	$^\circ\text{C}/\text{W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

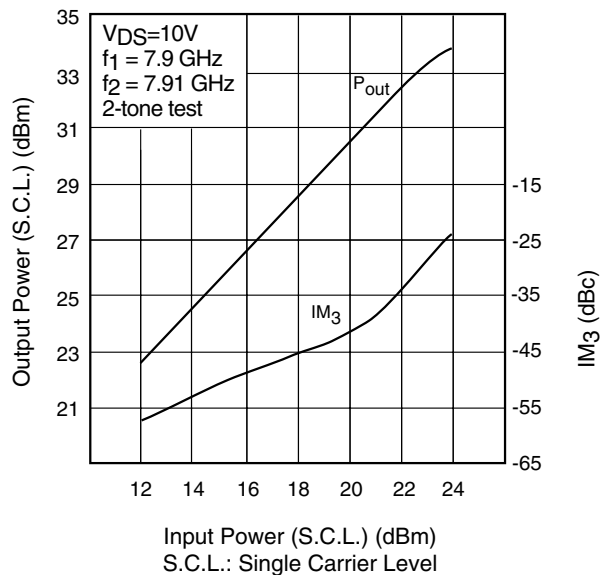
CASE STYLE: IB

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

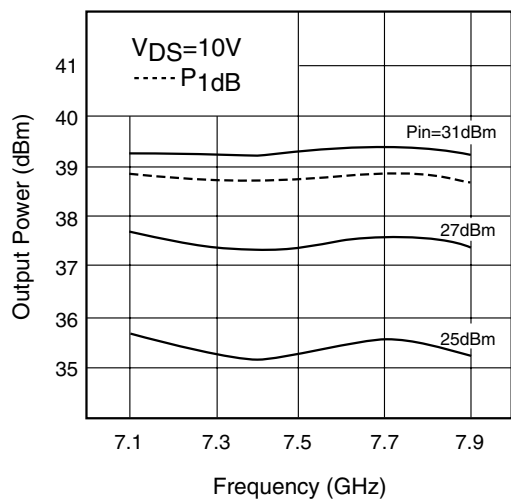
POWER DERATING CURVE



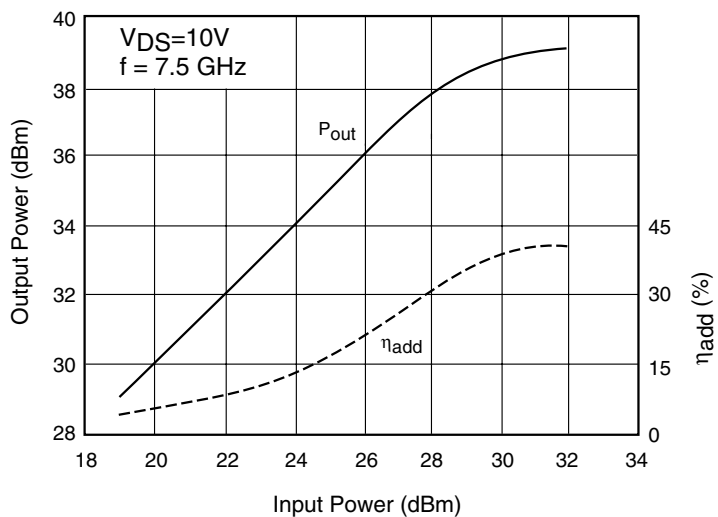
OUTPUT POWER & IM₃ vs. INPUT POWER

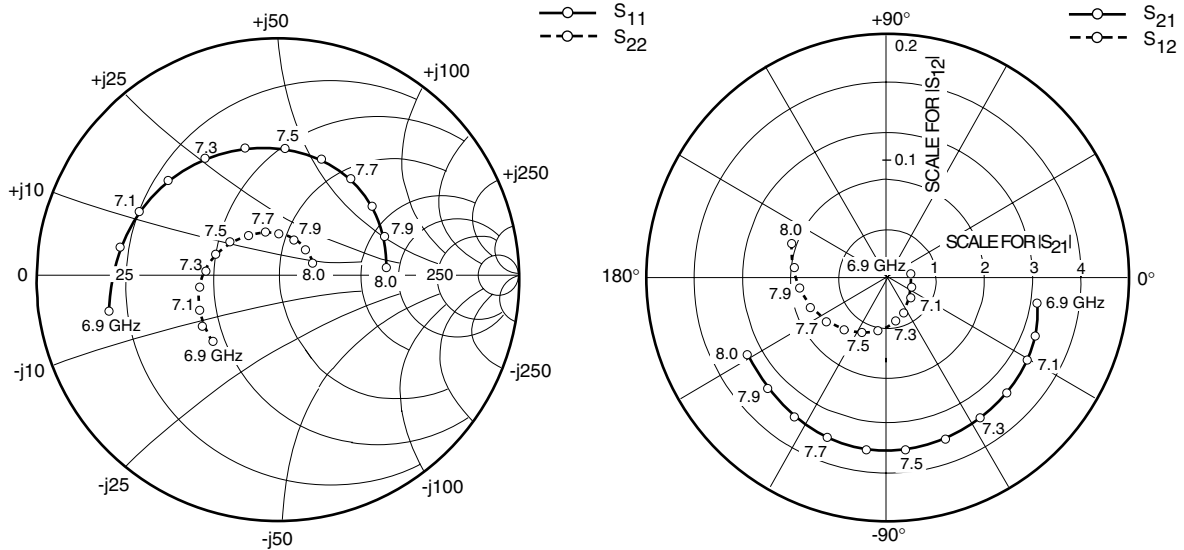


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





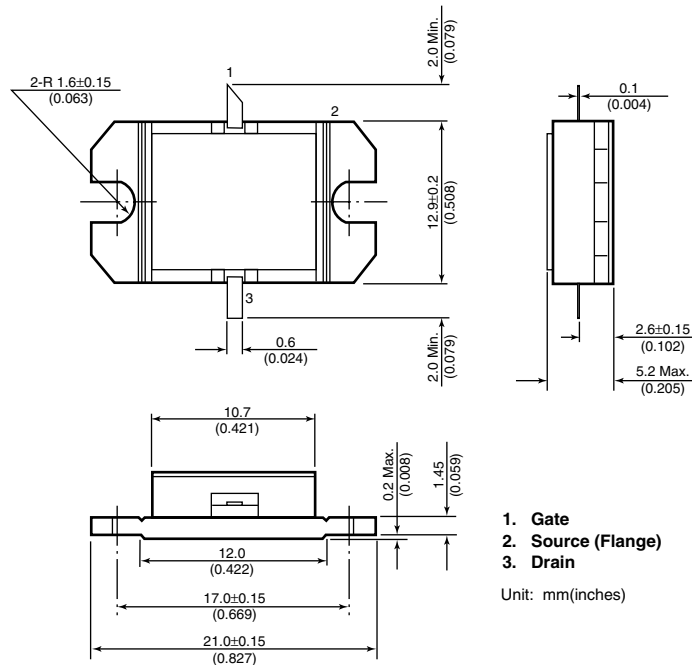
S-PARAMETERS

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

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6900	.717	-168.0	3.148	-9.5	.019	4.3	.388	-134.3
7000	.694	179.7	3.244	-21.6	.023	-24.5	.372	-147.0
7100	.672	169.6	3.328	-30.4	.026	-40.9	.353	-156.1
7200	.644	154.9	3.408	-43.2	.032	-65.3	.329	-170.0
7300	.612	139.4	3.474	-56.4	.037	-81.1	.302	176.1
7400	.583	122.2	3.507	-70.1	.043	-99.3	.272	160.1
7500	.558	104.8	3.516	-83.8	.051	-116.8	.244	144.0
7600	.539	87.1	3.502	-97.5	.057	-130.9	.215	126.1
7700	.522	69.5	3.460	-111.3	.063	-144.7	.194	106.8
7800	.509	52.6	3.398	-124.5	.068	-158.4	.176	86.7
7900	.494	36.3	3.339	-137.9	.072	-172.0	.165	65.7
8000	.477	20.5	3.278	-151.3	.077	174.1	.157	43.6

Case Style "IB"

Metal-Ceramic Hermetic Package



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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.

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