

FEATURES

- High Output Power: $P_{1dB} = 42.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 8.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 30\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 32.0\text{dBm}$
- Broad Band: 7.1 ~ 7.9GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM7179-18F 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	$T_c = 25^\circ\text{C}$	83.3	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:

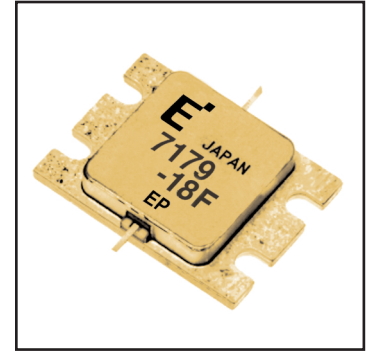
1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 48.0 and -8.4 mA respectively with gate resistance of 25 Ω .

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

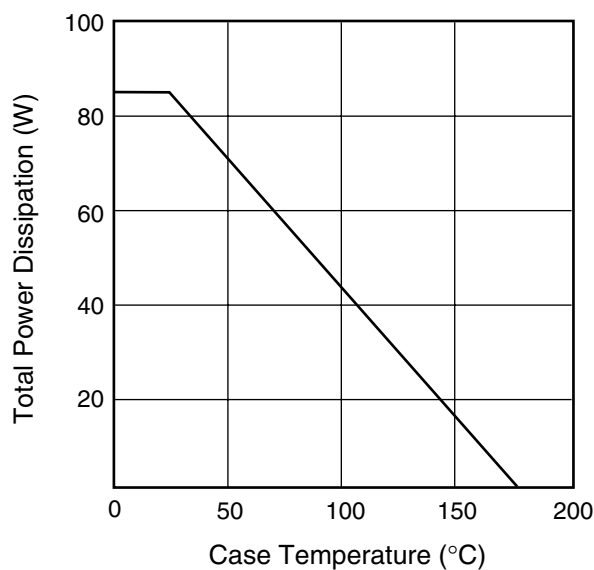
Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	7.5	11.25	A
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 4875\text{mA}$	-	7.5	-	S
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 250\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -250\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.65 I_{DSS}$ (Typ.), $f = 7.1 \sim 7.9 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	42.0	42.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.0	8.0	-	dB
Drain Current	I_{dsr}		-	4875	6000	mA
Power-added Efficiency	η_{add}		-	30	-	%
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 $P_{out} = 32.0\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.6	1.8	$^\circ\text{C/W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

CASE STYLE: IK

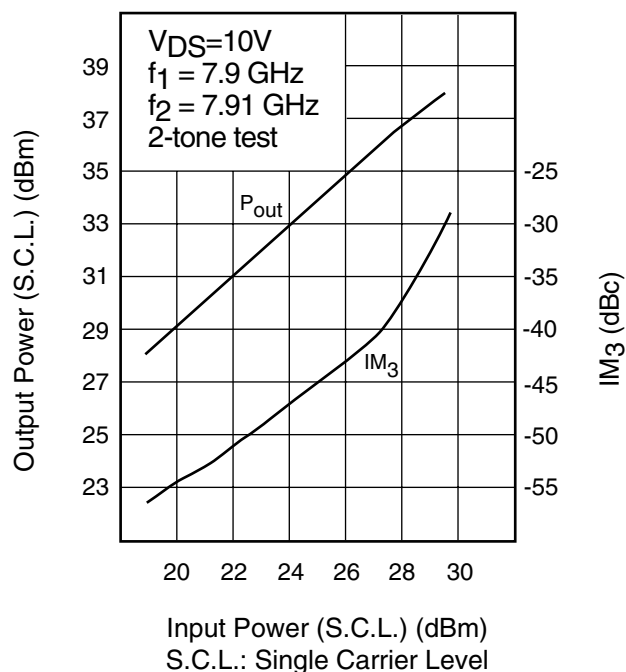
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level



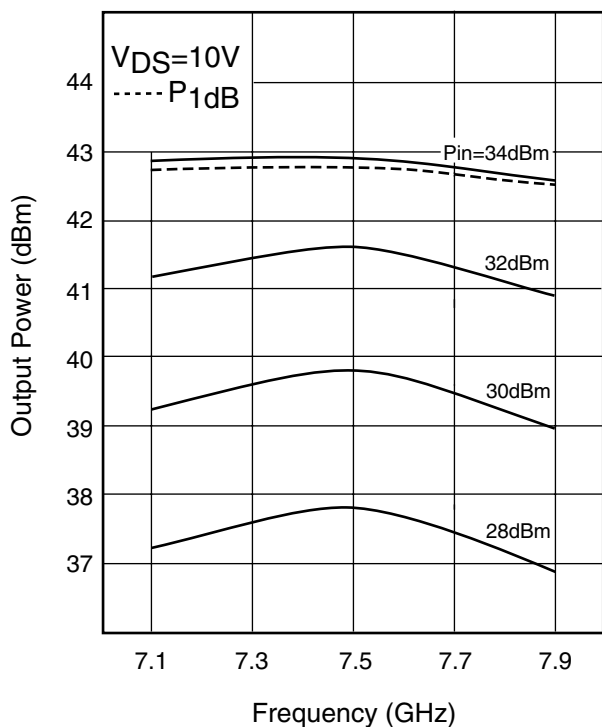
POWER DERATING CURVE



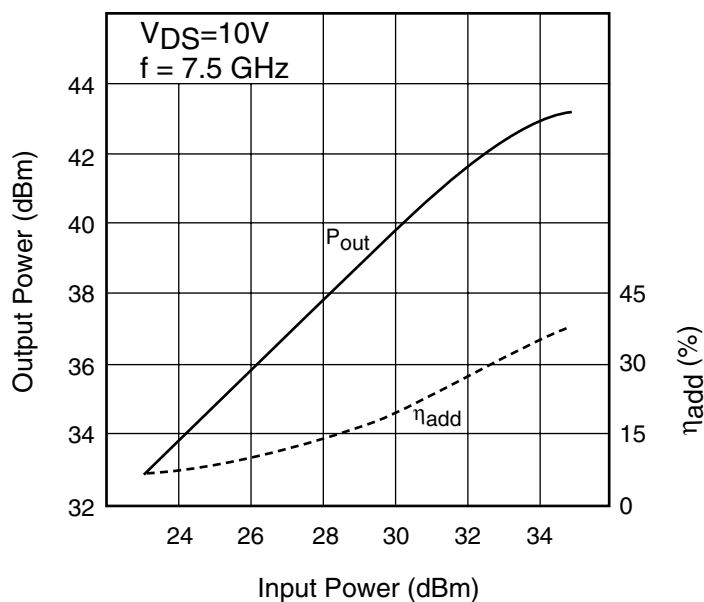
OUTPUT POWER & IM₃ vs. INPUT POWER

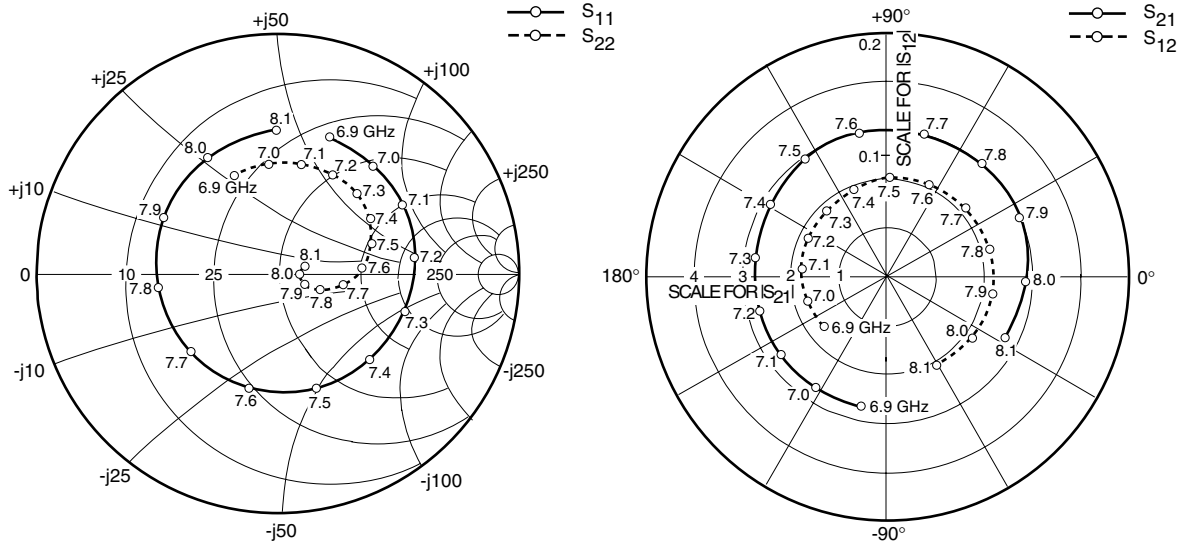


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

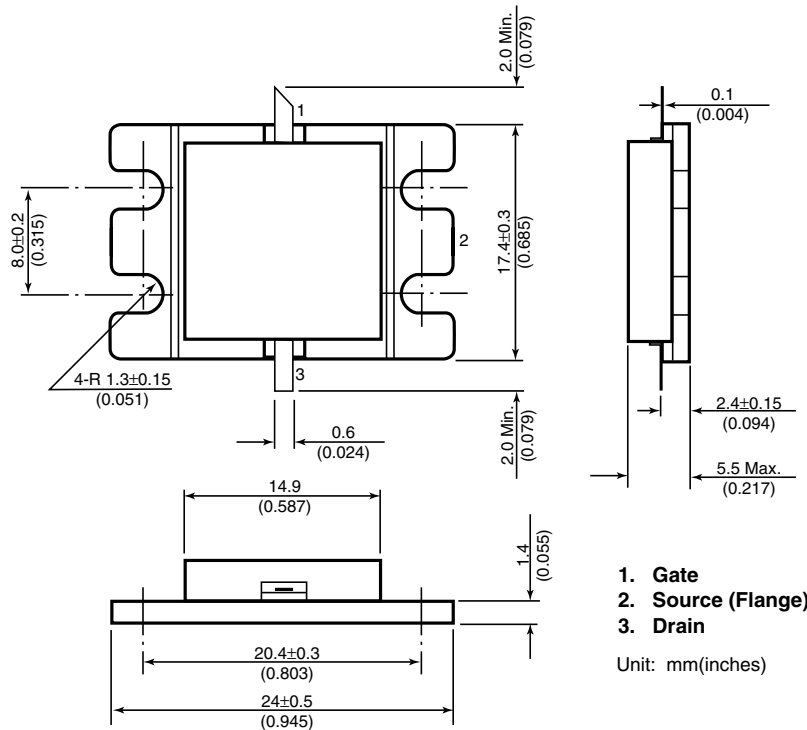
$V_{DS} = 10V$, $I_{DS} = 4875mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6900	.608	69.8	2.712	-101.5	.067	-142.1	.448	114.3
7000	.595	49.1	2.703	-123.1	.069	-162.8	.458	95.0
7100	.588	29.2	2.712	-143.6	.071	175.7	.465	77.6
7200	.567	6.8	2.744	-165.5	.072	154.6	.470	60.9
7300	.550	-16.7	2.799	172.2	.075	133.4	.465	45.7
7400	.526	-43.1	2.868	149.3	.077	111.5	.446	31.1
7500	.507	-71.6	2.943	125.5	.081	88.8	.410	17.4
7600	.493	-103.7	3.008	101.1	.083	66.0	.351	3.8
7700	.484	-137.3	3.037	75.7	.086	41.2	.273	-9.6
7800	.500	-172.8	3.030	49.8	.090	15.9	.189	-20.3
7900	.527	153.3	2.973	23.9	.088	-8.3	.118	-21.9
8000	.571	121.0	2.865	-2.1	.086	-34.7	.090	-1.4
8100	.605	90.9	2.722	-27.5	.083	-60.3	.117	13.2

FLM7179-18F

C-Band Internally Matched FET

Case Style "IK" 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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