

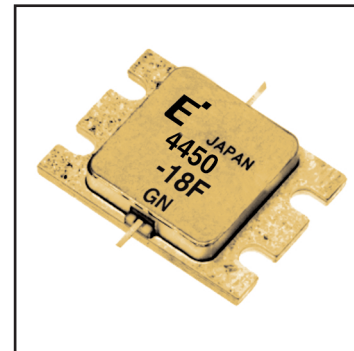
FEATURES

- High Output Power: $P_{1dB} = 43.0\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 36\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 32.0\text{dBm}$
- Broad Band: 4.4 ~ 5.0 GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM4450-18F 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 26.0 and -11.6 mA respectively with gate resistance of 25Ω .

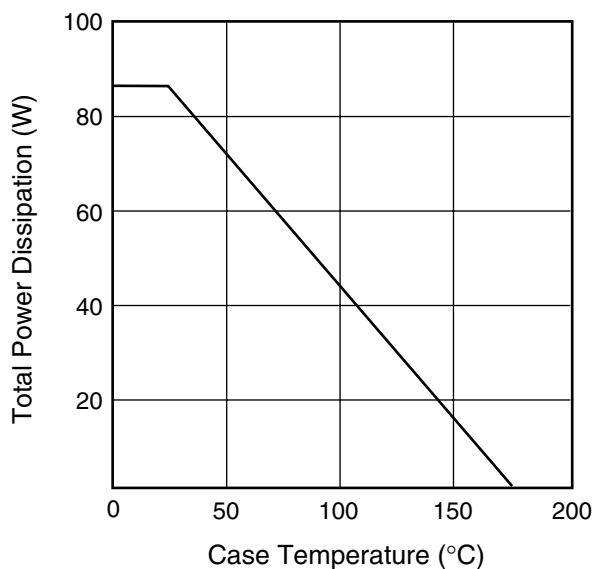
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	9.0	13.5	A
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 4800\text{mA}$	-	4000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 480\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -480\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0 \text{ GHz},$ $Z_S = Z_L = 50 \text{ ohm}$	42.0	43.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB
Drain Current	I_{dsr}		-	4800	6000	mA
Power-added Efficiency	η_{add}		-	36	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 5.0 \text{ GHz}, \Delta f = 10 \text{ MHz}$ 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	$^\circ\text{C}$

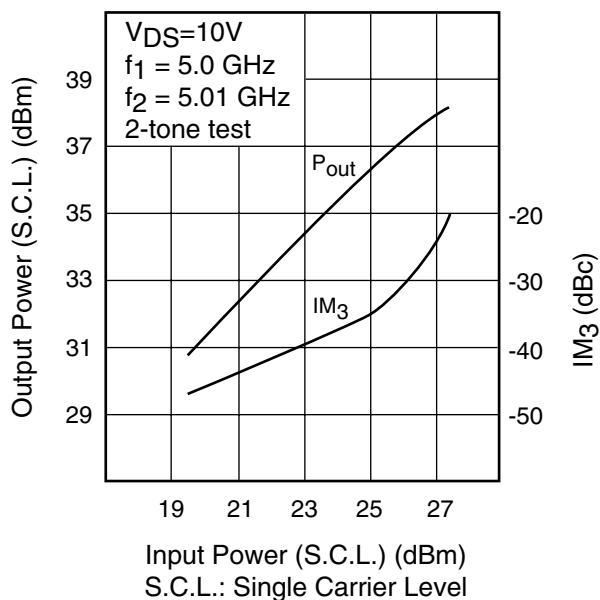
CASE STYLE: IK

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

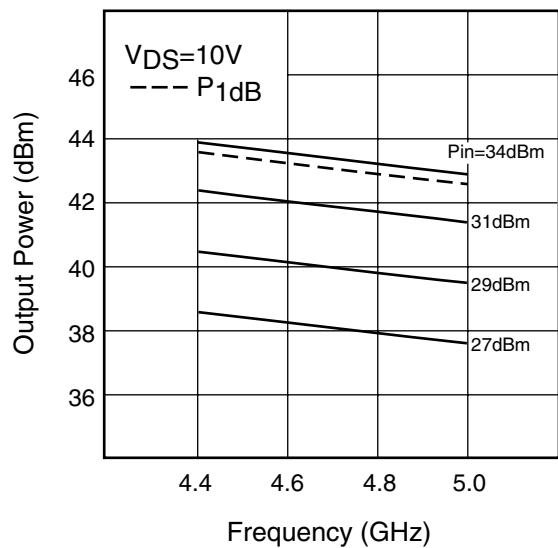
POWER DERATING CURVE



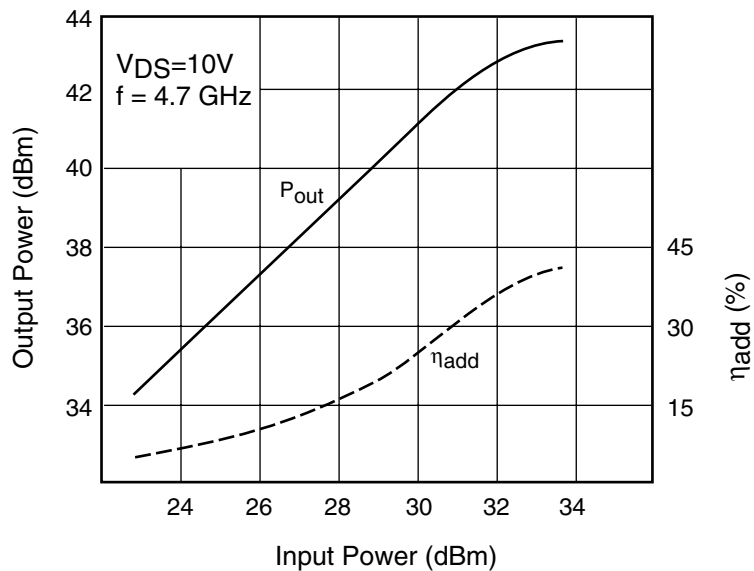
OUTPUT POWER & IM₃ vs. INPUT POWER

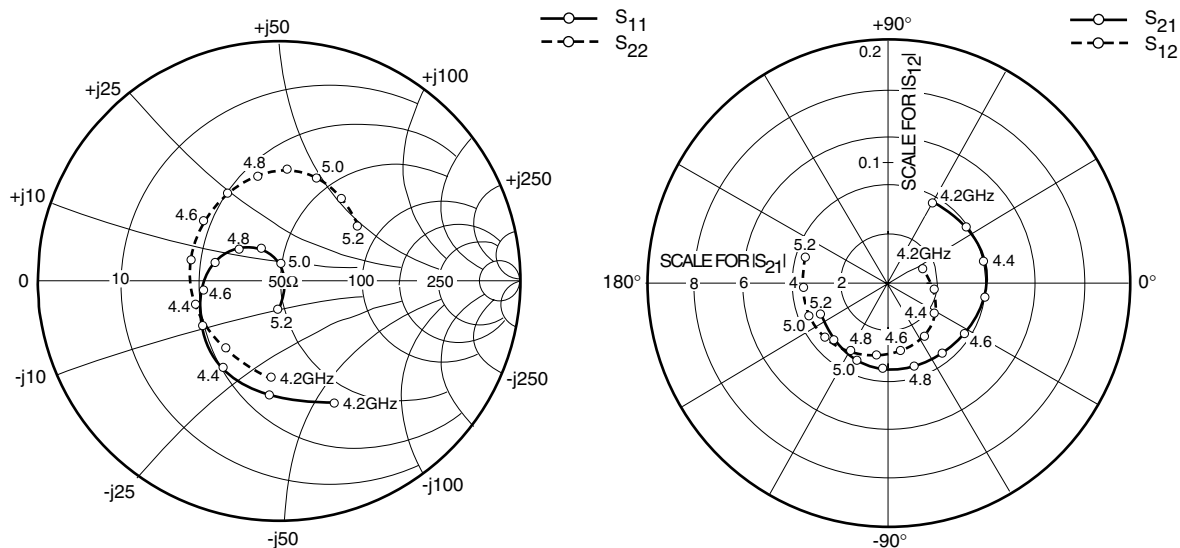


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

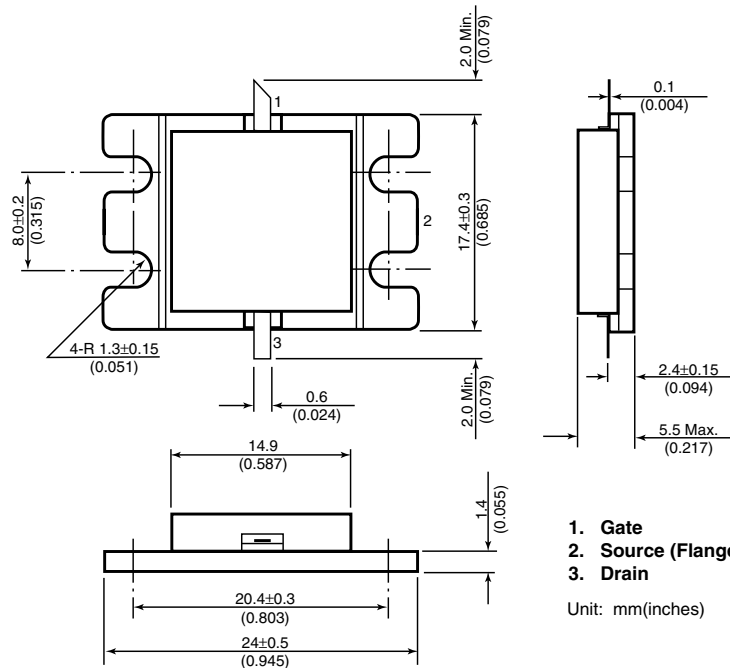
$V_{DS} = 10V, I_{DS} = 4800mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	.554	-65.9	3.802	59.9	.030	22.4	.404	-94.6
4300	.481	-95.2	3.981	35.7	.037	-6.9	.357	-128.7
4400	.426	-123.2	4.027	11.7	.044	-32.7	.355	-163.4
4500	.374	-150.2	3.981	-11.1	.052	-56.7	.377	167.0
4600	.324	-173.6	3.802	-32.6	.056	-80.6	.401	142.1
4700	.277	164.3	3.717	-53.1	.060	-101.1	.423	120.5
4800	.217	142.9	3.589	-73.0	.064	-119.3	.448	101.9
4900	.157	120.8	3.508	-92.8	.068	-140.0	.464	85.8
5000	.073	86.9	3.388	-113.1	.072	-158.1	.460	70.4
5100	.033	-33.1	3.273	-133.9	.070	-178.2	.435	53.7
5200	.119	-93.6	3.090	-154.9	.072	162.9	.400	36.0

FLM4450-18F

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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