

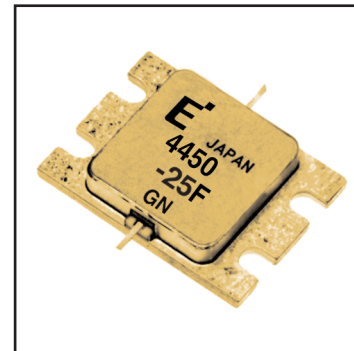
FEATURES

- High Output Power: $P_{1dB} = 44.5dBm$ (Typ.)
- High Gain: $G_{1dB} = 9.5dB$ (Typ.)
- High PAE: $\eta_{add} = 40\%$ (Typ.)
- Low $IM_3 = -46dBc@P_o = 33.5dBm$
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM4450-25F 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 $T_a=25^\circ C$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ C$	93.7	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ C$
Channel Temperature	T_{ch}		175	$^\circ C$

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 64.0 and -11.2 mA respectively with gate resistance of 25 Ω .

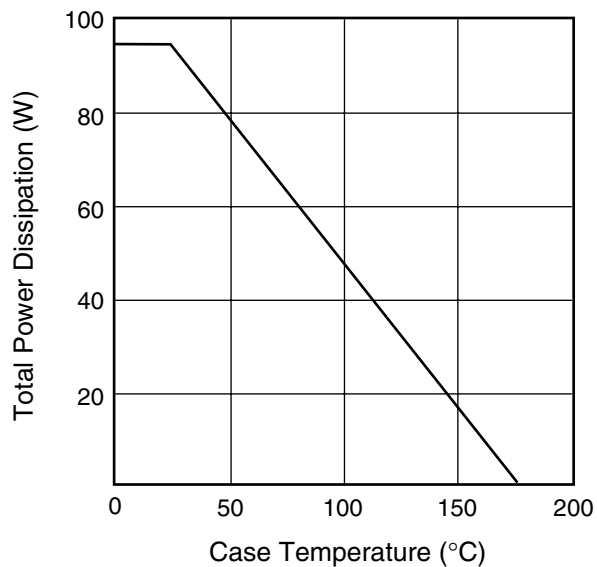
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	11.6	17.4	A
Transconductance	g_m	$V_{DS} = 5V, I_{DS} = 6800mA$	-	5800	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 600mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -600\mu A$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10V,$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0$ GHz, $Z_S = Z_L = 50$ ohm	43.5	44.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB
Drain Current	I_{dsr}		-	6200	7440	mA
Power-added Efficiency	η_{add}		-	40	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 5.0$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 33.5dBm$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.4	1.6	$^\circ C/W$
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	100	$^\circ C$

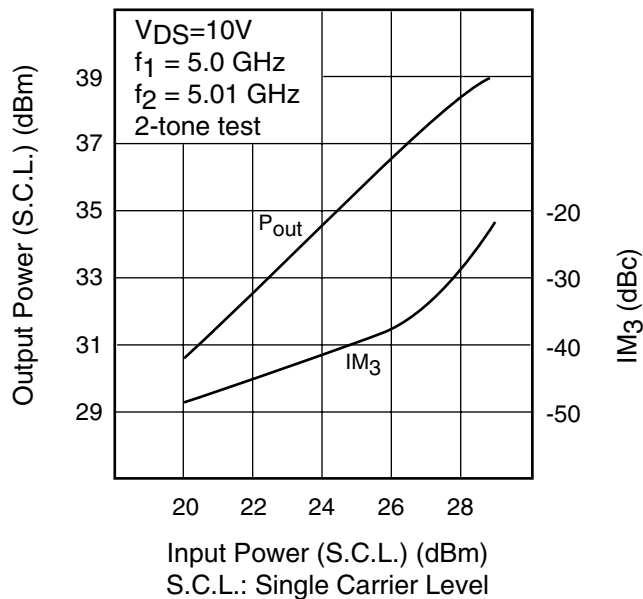
CASE STYLE: IK

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

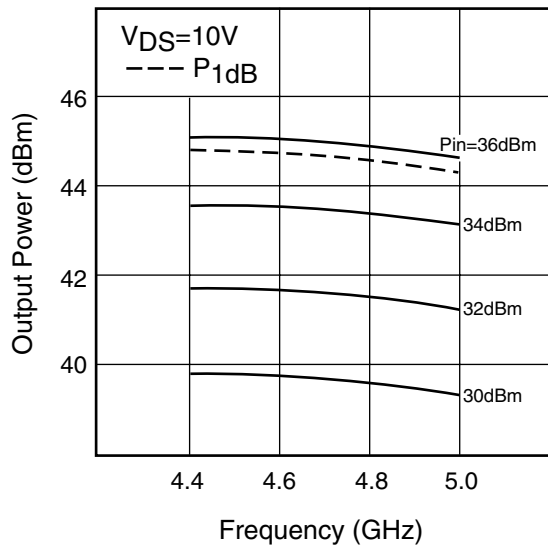
POWER DERATING CURVE



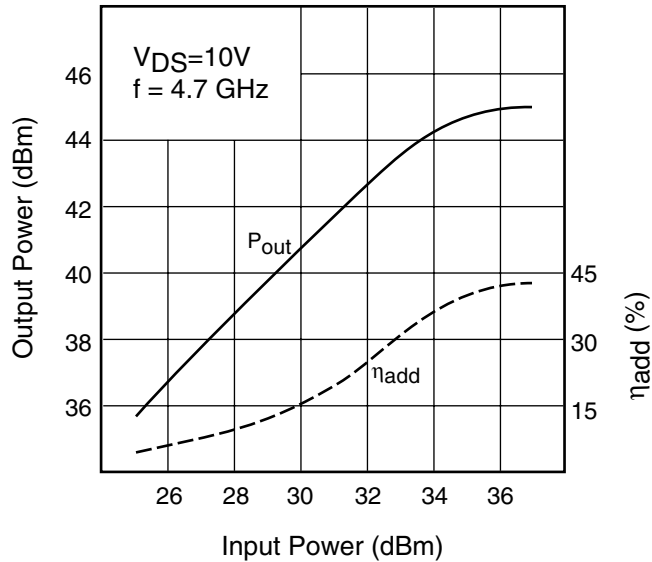
OUTPUT POWER & IM₃ vs. INPUT POWER

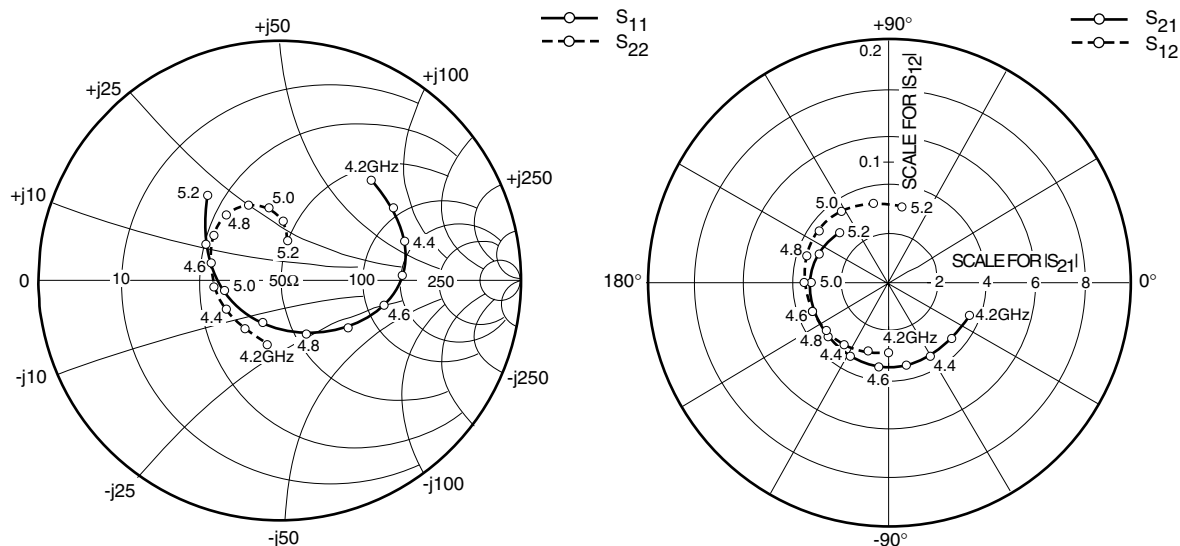


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 6800mA$

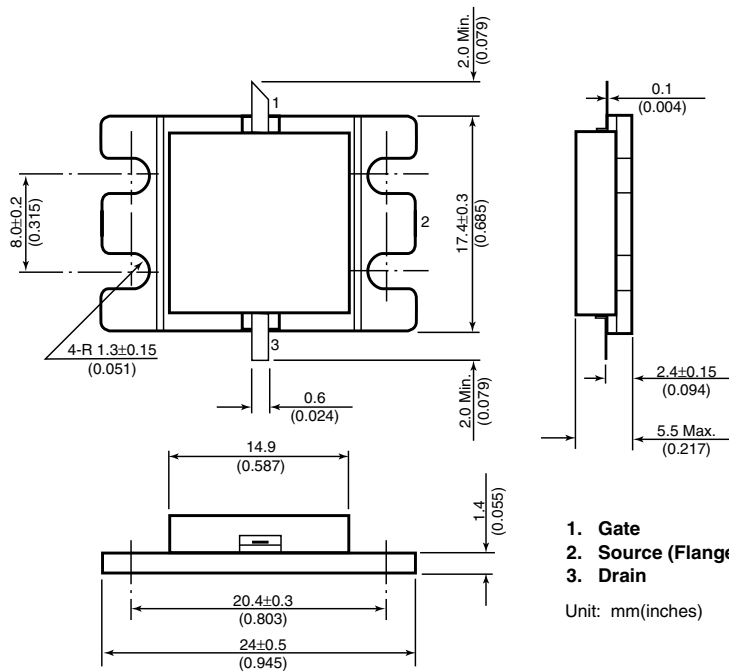
FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	.563	48.0	3.596	-23.7	.057	-90.6	.276	-100.5
4300	.565	33.0	3.527	-41.7	.059	-108.5	.252	-124.1
4400	.544	17.5	3.485	-60.9	.062	-126.3	.253	-150.0
4500	.503	2.7	3.483	-78.9	.064	-143.1	.273	-172.9
4600	.440	-13.9	3.495	-97.5	.068	-160.1	.300	166.4
4700	.349	-35.8	3.507	-118.3	.070	-179.5	.331	146.2
4800	.255	-65.4	3.501	-138.5	.073	162.1	.347	129.1
4900	.195	-113.5	3.449	-159.4	.072	142.5	.343	112.5
5000	.234	-169.2	3.333	179.2	.072	122.3	.311	97.2
5100	.340	155.0	3.153	157.8	.068	101.6	.248	84.9
5200	.462	129.6	2.908	135.3	.064	80.0	.164	78.6

FLM4450-25F

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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