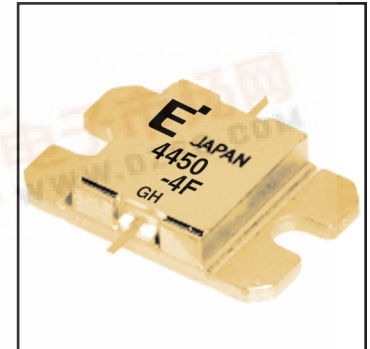


FLM4450-4F

C-Band Internally Matched FET

FEATURES

- High Output Power: $P_{1dB} = 36.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 11.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 37\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 25.5\text{dBm}$
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package



DESCRIPTION

The FLM4450-4F 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	$T_C = 25^\circ\text{C}$	25.0	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 -2.2 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}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	1950	2900	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 1100\text{mA}$	-	1000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 90\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -90\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}		35.5	36.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		10.0	11.0	-	dB
Drain Current	I_{dsr}	$V_{DS} = 10\text{V}, I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0\text{GHz}, Z_S = Z_L = 50\text{ohm}$	-	1100	1300	mA
Power-added Efficiency	η_{add}		-	37	-	%
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 $P_{out} = 25.5\text{dBm S.C.L.}$	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	5.0	6.0	$^\circ\text{C}/\text{W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

CASE STYLE: IB

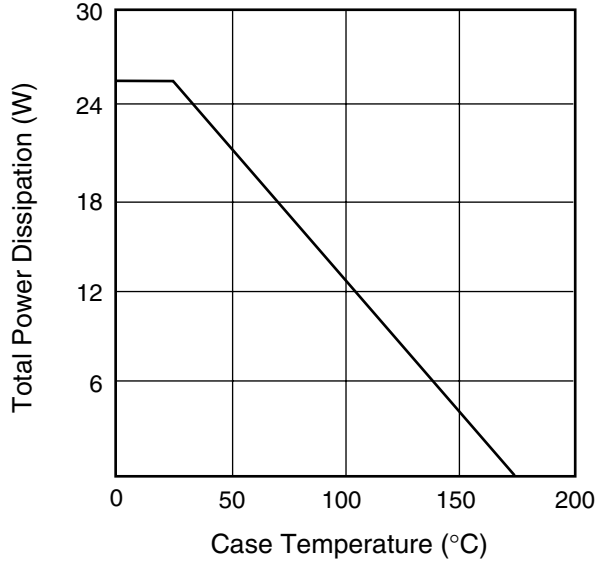
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level



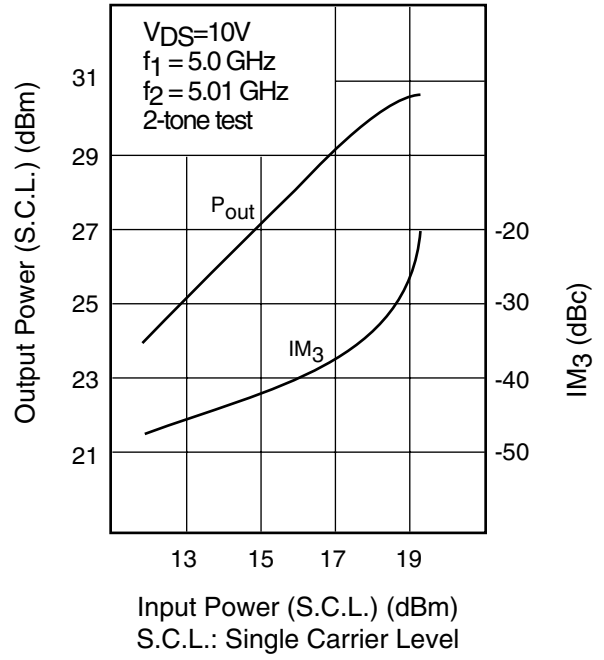
FLM4450-4F

C-Band Internally Matched FET

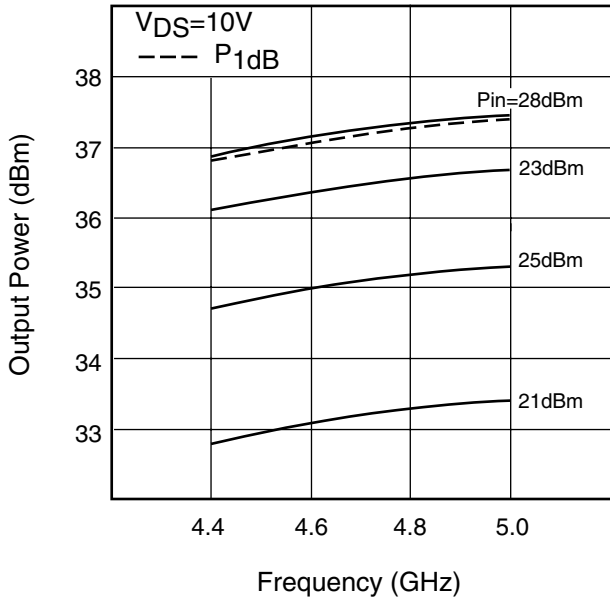
POWER DERATING CURVE



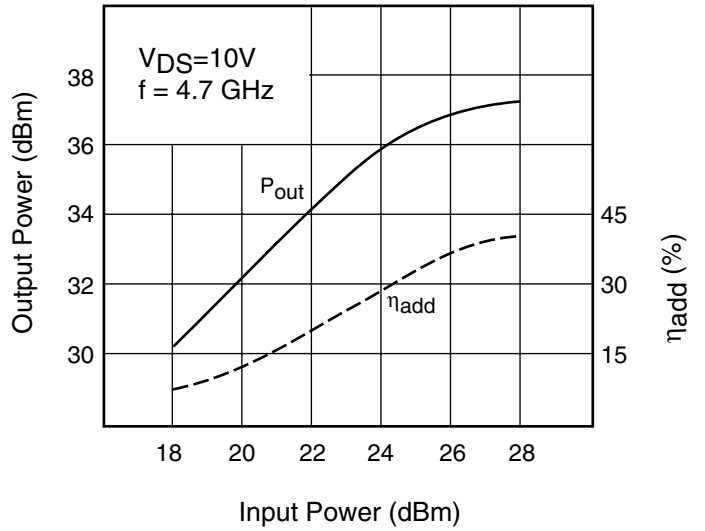
OUTPUT POWER & IM₃ vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY

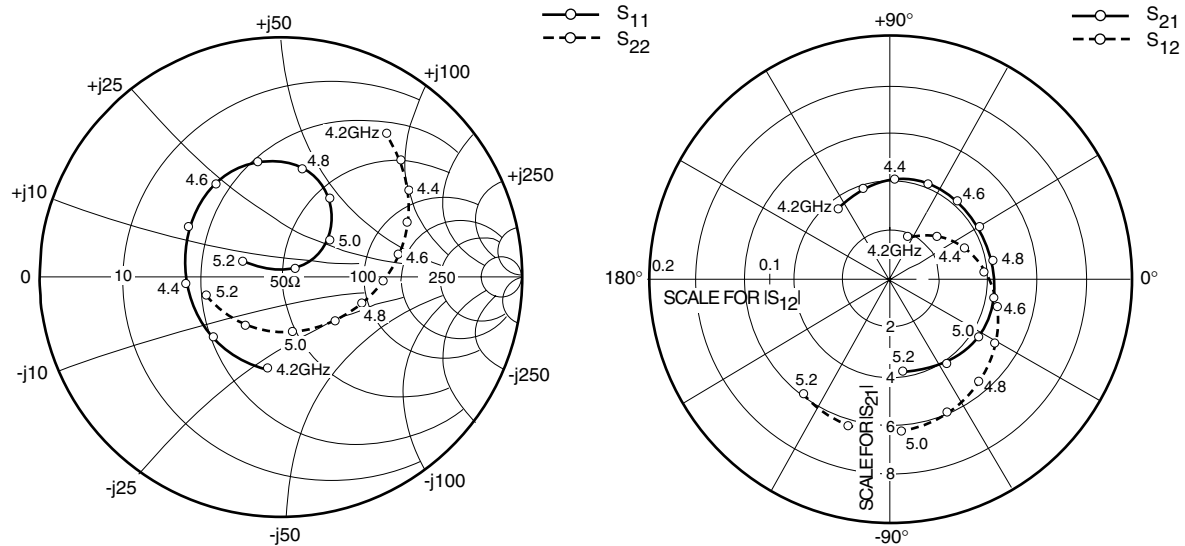


OUTPUT POWER vs. INPUT POWER



FLM4450-4F

C-Band Internally Matched FET



S-PARAMETERS

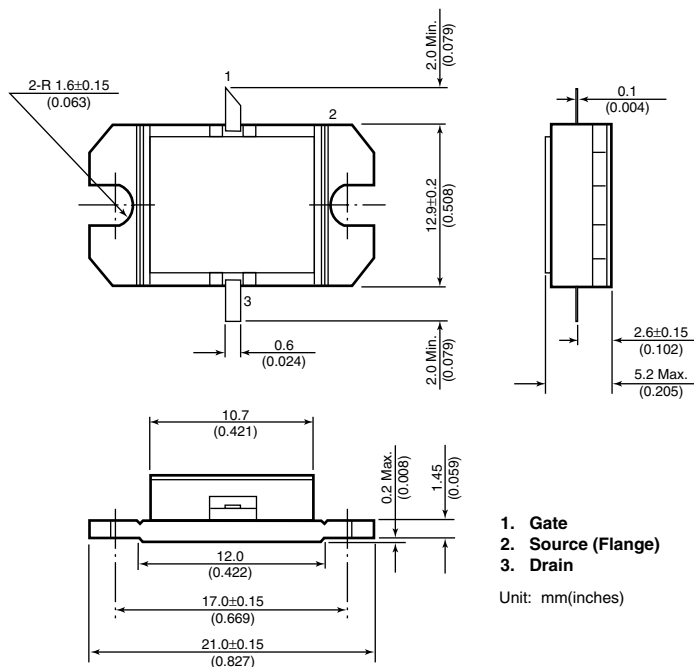
$V_{DS} = 10V, I_{DS} = 1100mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	.388	-98.6	3.672	126.7	.039	62.7	.740	53.8
4300	.373	-139.1	3.921	107.5	.052	42.8	.700	44.0
4400	.397	-176.6	4.081	87.9	.066	22.9	.640	34.1
4500	.443	151.5	4.166	68.3	.078	3.8	.565	23.3
4600	.471	124.2	4.220	49.0	.090	-14.3	.487	11.3
4700	.487	100.8	4.250	29.8	.100	-31.6	.422	-2.2
4800	.455	78.6	4.290	10.1	.111	-49.2	.354	-18.7
4900	.385	57.7	4.318	-10.7	.118	-66.9	.284	-41.1
5000	.256	36.6	4.308	-32.9	.125	-85.9	.236	-77.7
5100	.066	29.7	4.173	-57.2	.125	-106.4	.253	-124.7
5200	.170	156.7	3.828	-82.7	.118	-128.0	.317	-165.0

FLM4450-4F

C-Band Internally Matched FET

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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