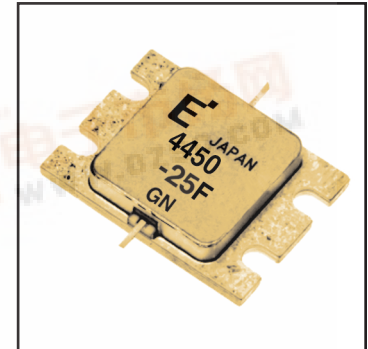


# FLM4450-25F

## C-Band Internally Matched FET

### FEATURES

- High Output Power:  $P_{1dB} = 44.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 9.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 40\%$  (Typ.)
- Low  $IM_3 = -46\text{dBc}$  @  $P_o = 33.5\text{dBm}$
- 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 $T_a=25^\circ\text{C}$ )

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_T$	$T_C = 25^\circ\text{C}$	93.7	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 64.0 and -11.2 mA respectively with gate resistance of  $25\Omega$ .

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

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

CASE STYLE: IK

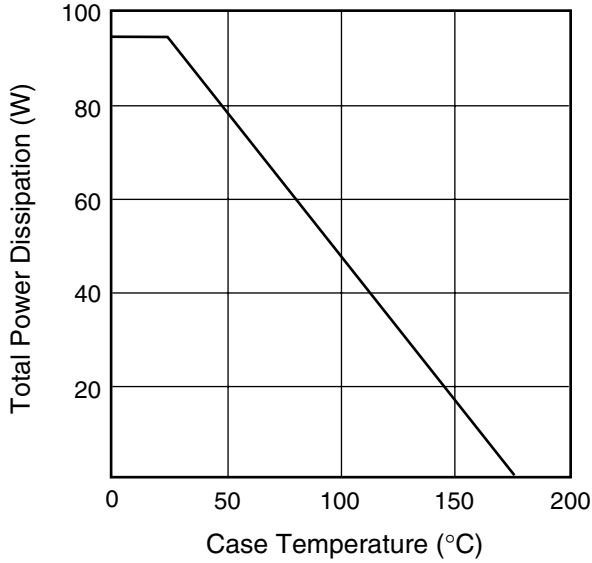
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level



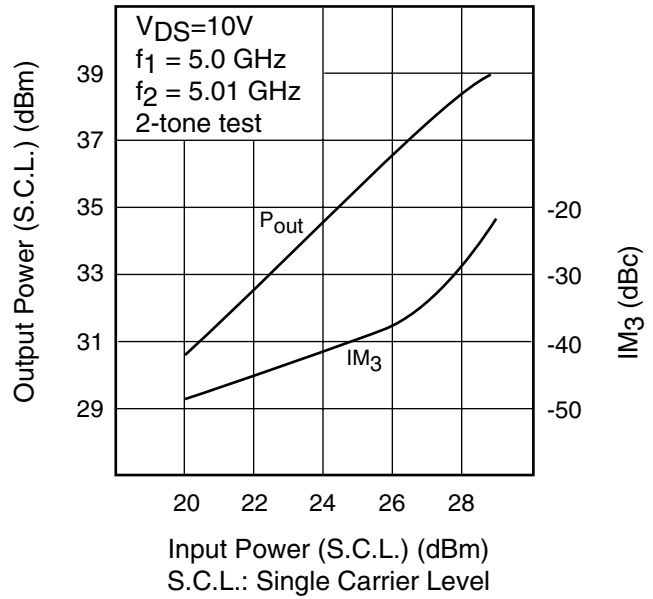
# FLM4450-25F

## C-Band Internally Matched FET

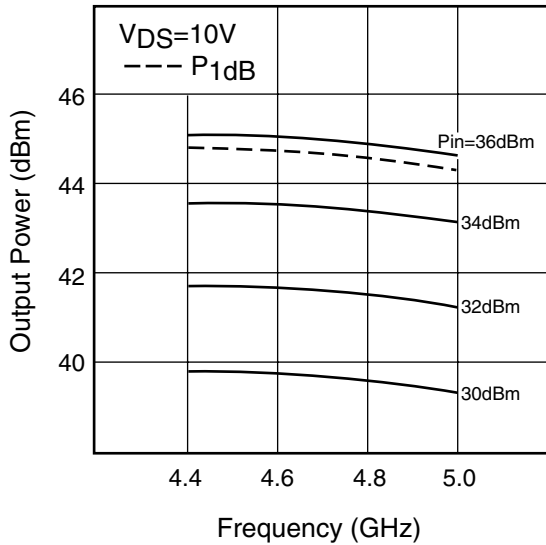
### POWER DERATING CURVE



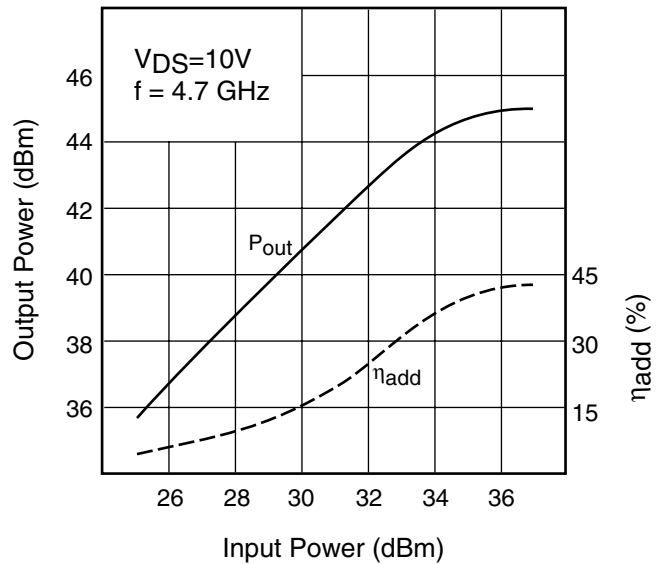
### OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER



### OUTPUT POWER vs. FREQUENCY

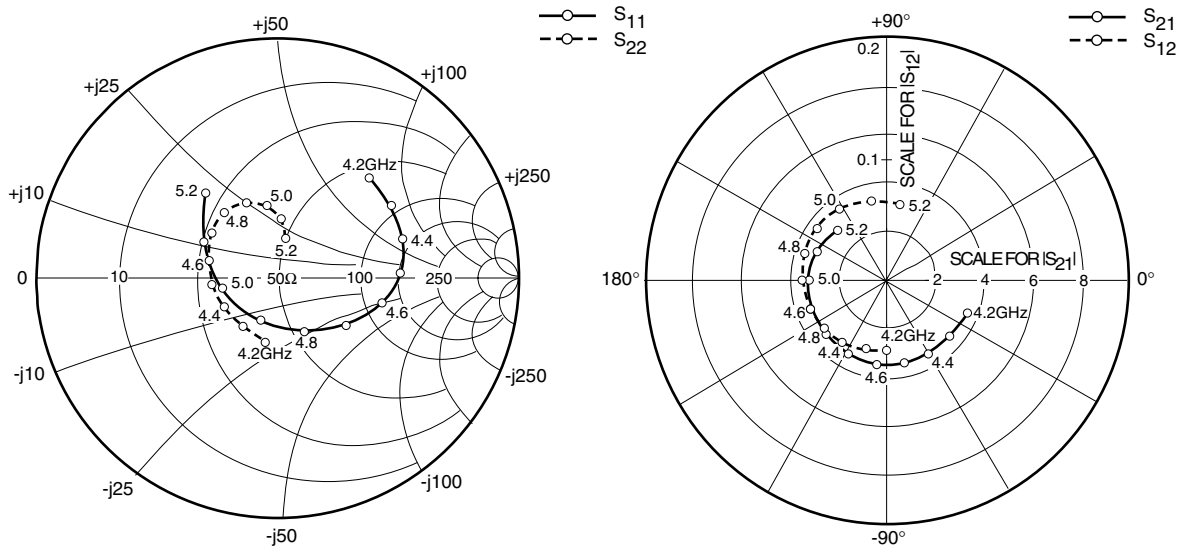


### OUTPUT POWER vs. INPUT POWER



# FLM4450-25F

## C-Band Internally Matched FET



### S-PARAMETERS

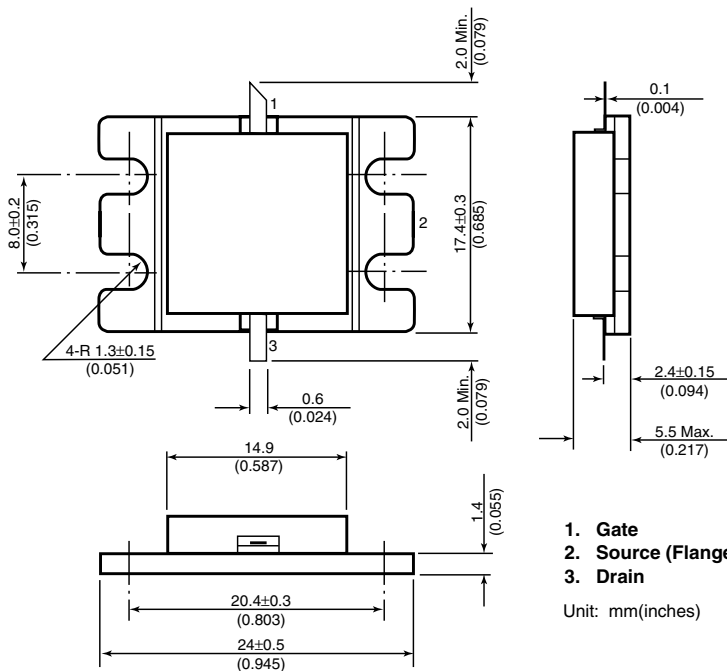
$V_{DS} = 10V, I_{DS} = 6800mA$

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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