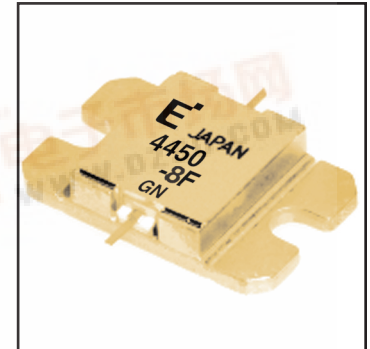


# FLM4450-8F

## C-Band Internally Matched FET

### FEATURES

- High Output Power:  $P_{1dB} = 39.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 10.0\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 36\%$  (Typ.)
- Low  $IM_3 = -46\text{dBc}$  @  $P_o = 28.5\text{dBm}$
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package



### DESCRIPTION

The FLM4450-8F 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	$P_T$	$T_C = 25^\circ\text{C}$	42.8	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 32.0 and -4.4 mA respectively with gate resistance of  $100\Omega$ .

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 5V, V_{GS} = 0V$	-	3900	5850	mA
Transconductance	$g_m$	$V_{DS} = 5V, I_{DS} = 2200\text{mA}$	-	2000	-	mS
Pinch-off Voltage	$V_p$	$V_{DS} = 5V, I_{DS} = 180\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -180\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS} = 10V,$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	38.5	39.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		9.0	10.0	-	dB
Drain Current	$I_{dsr}$		-	2200	2600	mA
Power-added Efficiency	$\eta_{add}$		-	36	-	%
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 $P_{out} = 28.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	3.0	3.5	$^\circ\text{C}/\text{W}$
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

CASE STYLE: IB

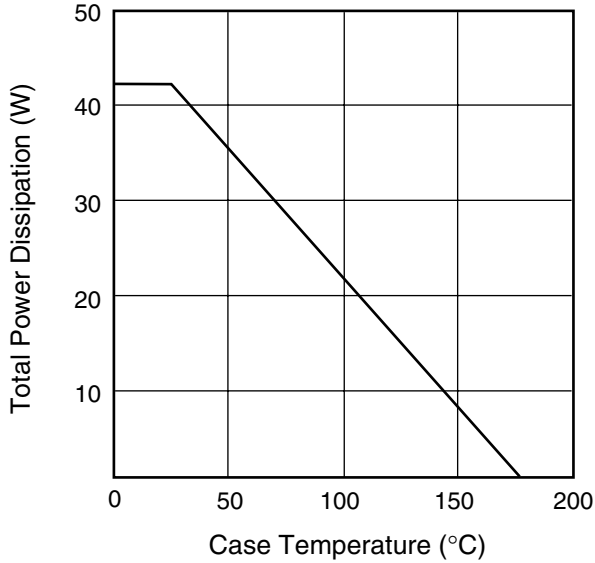
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level



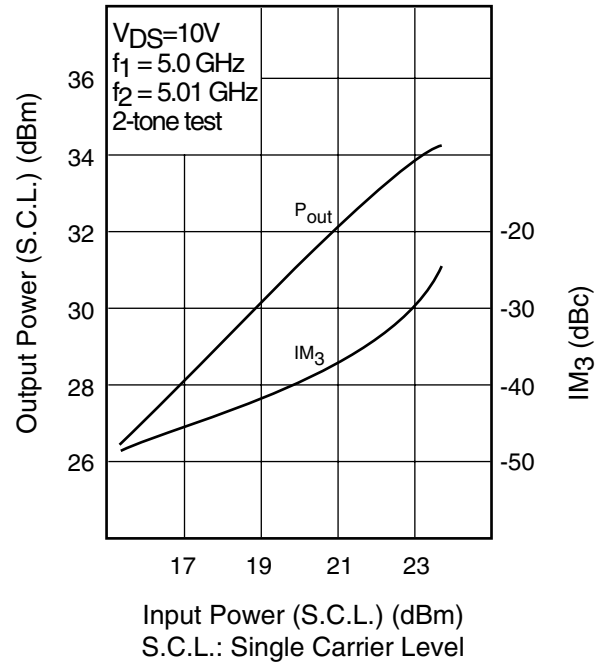
# FLM4450-8F

C-Band Internally Matched FET

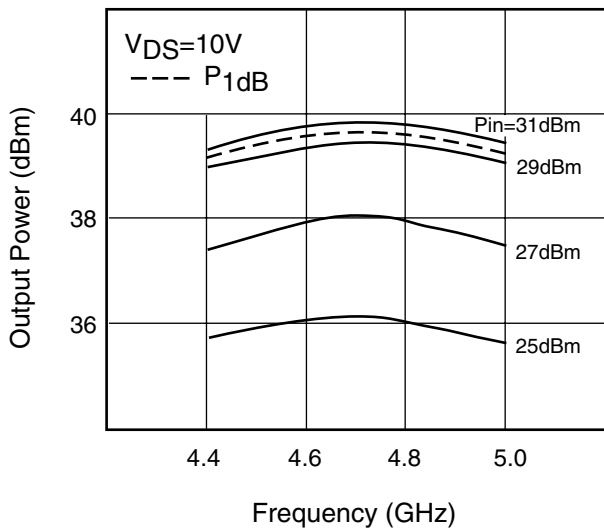
**POWER DERATING CURVE**



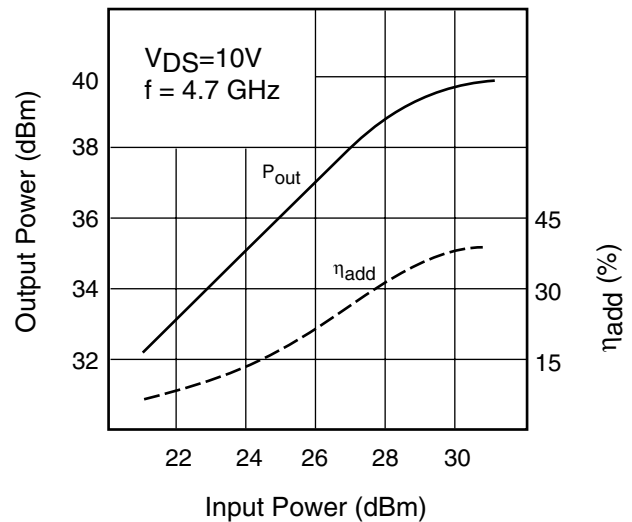
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**



**OUTPUT POWER vs. FREQUENCY**

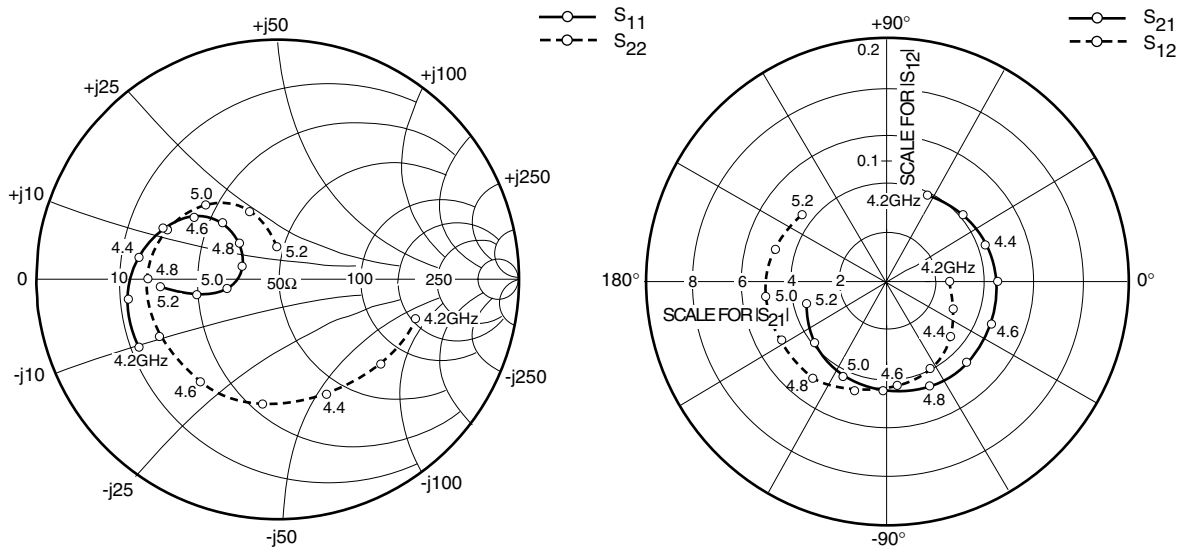


**OUTPUT POWER vs. INPUT POWER**



# FLM4450-8F

## C-Band Internally Matched FET



### S-PARAMETERS

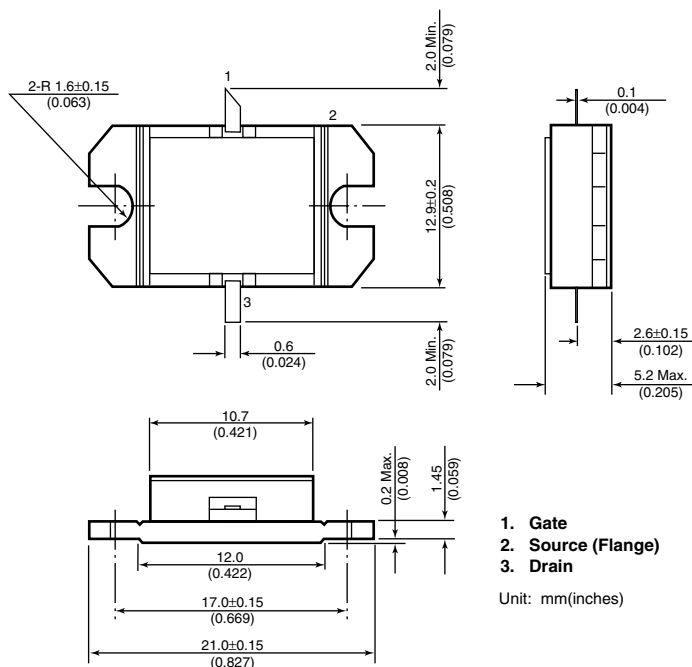
$V_{DS} = 10V, I_{DS} = 2200mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	.645	-153.3	3.953	61.9	.051	-0.3	.592	-16.8
4300	.627	-171.7	4.154	41.9	.060	-22.2	.554	-40.3
4400	.578	171.7	4.326	21.1	.069	-40.4	.521	-67.5
4500	.520	156.4	4.501	-0.1	.079	-62.9	.521	-97.4
4600	.428	143.8	4.589	-22.2	.087	-84.8	.540	-127.0
4700	.325	134.2	4.642	-45.1	.095	-106.3	.550	-153.9
4800	.216	135.2	4.578	-68.2	.100	-127.1	.540	-179.7
4900	.158	160.9	4.434	-92.0	.100	-150.4	.504	156.1
5000	.214	-168.1	4.217	-116.1	.101	-172.5	.430	134.0
5100	.346	-167.2	3.892	-140.6	.096	164.6	.306	113.7
5200	.482	-175.7	3.469	-165.3	.089	141.9	.136	95.9

# FLM4450-8F

## 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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