

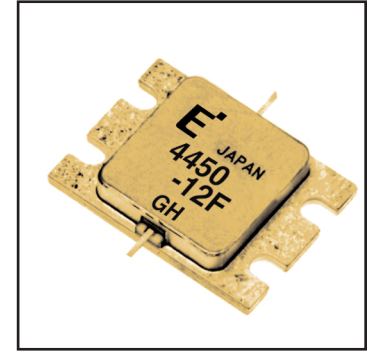
### FEATURES

- High Output Power:  $P_{1dB} = 41.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 10.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 39\%$  (Typ.)
- Low  $IM_3 = -46\text{dBc}$ @ $P_o = 30.5\text{dBm}$
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

### DESCRIPTION

The FLM4450-12F 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	$P_T$	$T_C = 25^\circ\text{C}$	57.6	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 -5.6 mA respectively with gate resistance of 50 $\Omega$ .

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

Item	Symbol	Test Conditions	Limit			Unit	
			Min.	Typ.	Max.		
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	5800	8700	mA	
Transconductance	$g_m$	$V_{DS} = 5\text{V}, I_{DS} = 3400\text{mA}$	-	2900	-	mS	
Pinch-off Voltage	$V_p$	$V_{DS} = 5\text{V}, I_{DS} = 300\text{mA}$	-1.0	-2.0	-3.5	V	
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -300\mu\text{A}$	-5.0	-	-	V	
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS} = 10\text{V},$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	40.5	41.5	-	dBm	
Power Gain at 1dB G.C.P.	$G_{1dB}$		9.5	10.5	-	dB	
Drain Current	$I_{dsr}$		-	3250	3800	mA	
Power-added Efficiency	$\eta_{add}$		-	39	-	%	
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 $P_{out} = 30.5\text{dBm S.C.L.}$	-44	-46	-	dBc
Thermal Resistance	$R_{th}$		Channel to Case	-	2.3	2.6	$^\circ\text{C/W}$
Channel Temperature Rise	$\Delta T_{ch}$	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$	

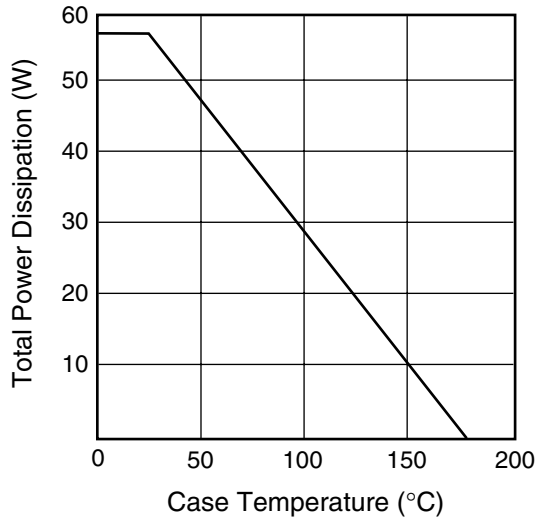
CASE STYLE: IK

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

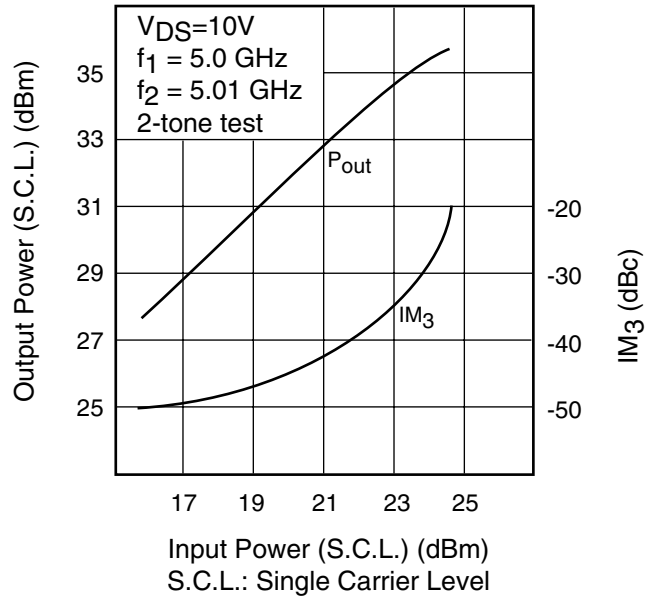
# FLM4450-12F

## C-Band Internally Matched FET

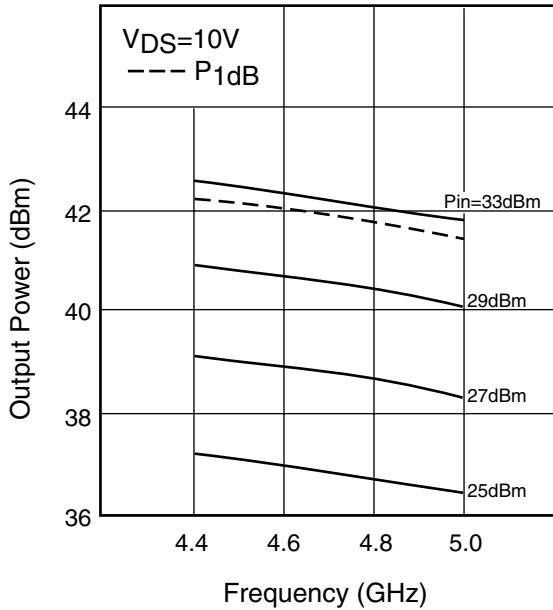
**POWER DERATING CURVE**



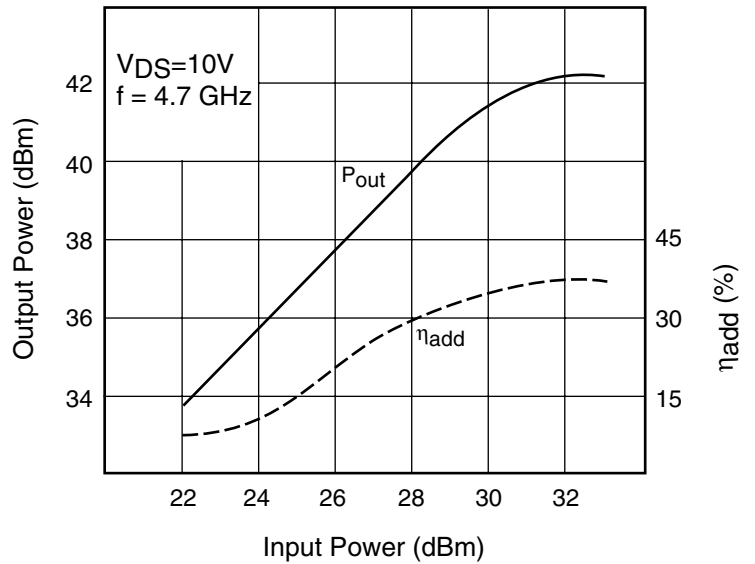
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**



**OUTPUT POWER vs. FREQUENCY**

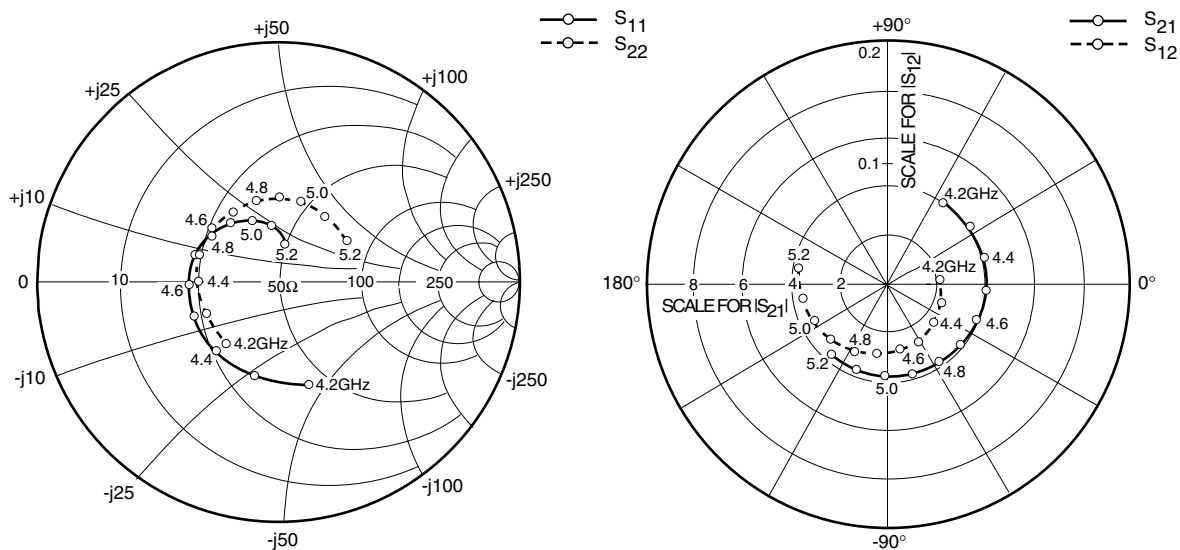


**OUTPUT POWER vs. INPUT POWER**



# FLM4450-12F

## C-Band Internally Matched FET



### S-PARAMETERS

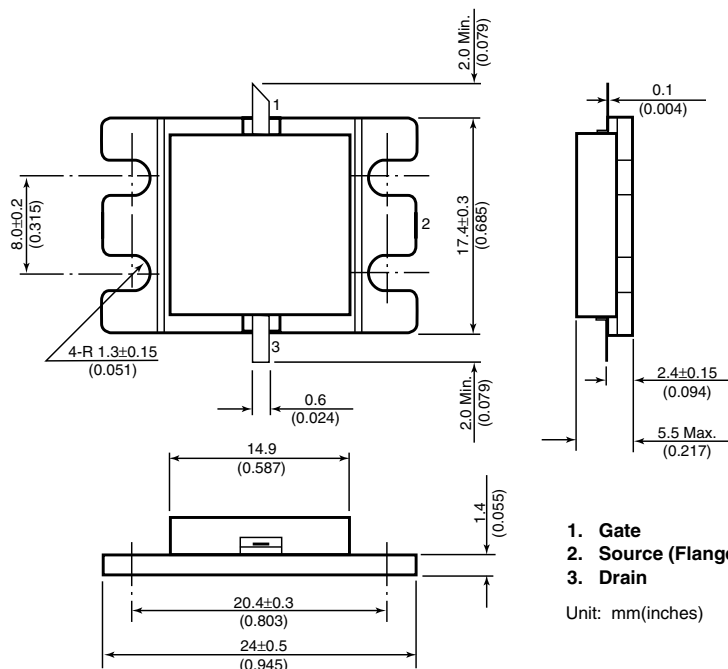
$V_{DS} = 10V, I_{DS} = 3400mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	.443	-73.5	4.043	55.9	.042	3.7	.342	-130.3
4300	.400	-104.2	4.099	35.4	.046	-20.2	.332	-155.8
4400	.384	-131.9	4.068	15.3	.048	-39.5	.335	-179.0
4500	.379	-157.6	4.016	-3.8	.052	-61.9	.342	160.9
4600	.370	-178.8	3.925	-22.3	.054	-81.1	.342	142.5
4700	.364	161.8	3.842	-40.1	.059	-100.3	.342	124.2
4800	.341	144.8	3.786	-57.7	.062	-117.7	.349	106.8
4900	.321	128.8	3.736	-75.3	.066	-136.6	.352	90.8
5000	.279	112.4	3.711	-93.1	.068	-153.9	.346	74.5
5100	.238	97.1	3.711	-111.4	.072	-171.1	.332	55.4
5200	.168	80.2	3.698	-130.5	.077	169.6	.325	32.8

# FLM4450-12F

## 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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