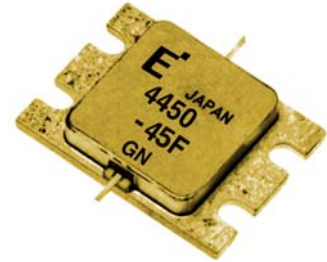


# FLM4450-45F

## C-Band Internally Matched FET

### FEATURES

- High Output Power: P<sub>1dB</sub>=46.5dBm(Typ.)
- High Gain: G<sub>1dB</sub>=10.0dB(Typ.)
- High PAE:  $\eta_{add}$ =41%(Typ.)
- Broad Band: 4.4~5.0GHz
- Impedance Matched Z<sub>in</sub>/Z<sub>out</sub> = 50 $\Omega$
- Hermetically Sealed Package



### DESCRIPTION

The FLM4450-45F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 $\Omega$  system.

### ABSOLUTE MAXIMUM RATINGS (Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	15	V
Gate-Source Voltage	V <sub>GS</sub>	-5	V
Total Power Dissipation	PT	115.4	W
Storage Temperature	T <sub>stg</sub>	-65 to +175	°C
Channel Temperature	T <sub>ch</sub>	175	°C

### RECOMMENDED OPERATING CONDITION (Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V <sub>DS</sub>		≤12	V
Forward Gate Current	I <sub>GF</sub>	R <sub>G</sub> =13 $\Omega$	≤107.2	mA
Reverse Gate Current	I <sub>GR</sub>	R <sub>G</sub> =13 $\Omega$	≥-23.2	mA

### ELECTRICAL CHARACTERISTICS (Case Temperature T<sub>c</sub>=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V	-	16.0	24.0	A
Transconductance	g <sub>m</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =8.0A	-	8000	-	mS
Pinch-off Voltage	V <sub>p</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =960mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> =960 $\mu$ A	-5.0	-	-	V
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DS</sub> =12V	46	46.5	-	dBm
Power Gain at 1dB G.C.P.	G <sub>1dB</sub>	f=4.4 - 5.0 GHz I <sub>DS</sub> =7.0A (Typ.) Z <sub>S</sub> =Z <sub>L</sub> =50 $\Omega$	9.0	10.0	-	dB
Drain Current	I <sub>DSR</sub>		-	8.0	10.0	A
Power-Added Efficiency	$\eta_{add}$		-	41	-	%
Gain Flatness	$\Delta$ G		-	-	1.2	dB
Thermal Resistance	R <sub>th</sub>	Channel to Case	-	1.1	1.3	°C/W
Channel Temperature Rise	$\Delta$ T <sub>ch</sub>	12V X I <sub>DSR</sub> X R <sub>th</sub>	-	-	100	°C

### CASE STYLE: IK

G.C.P.: Gain Compression Point

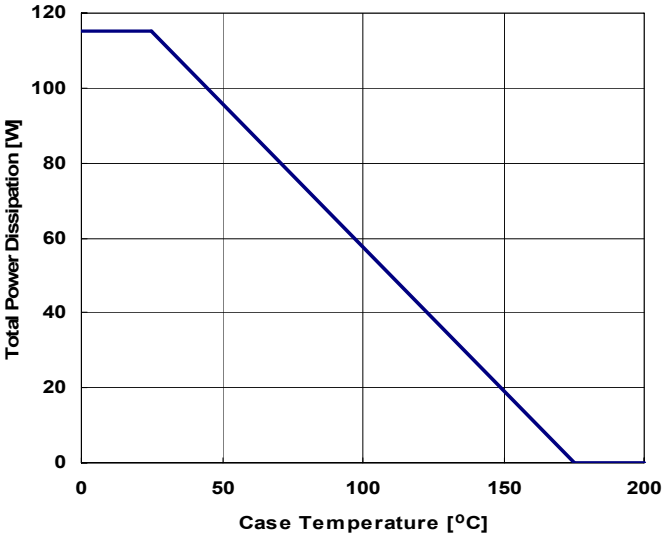
ESD	Class III	2000V ~
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Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5k $\Omega$ )

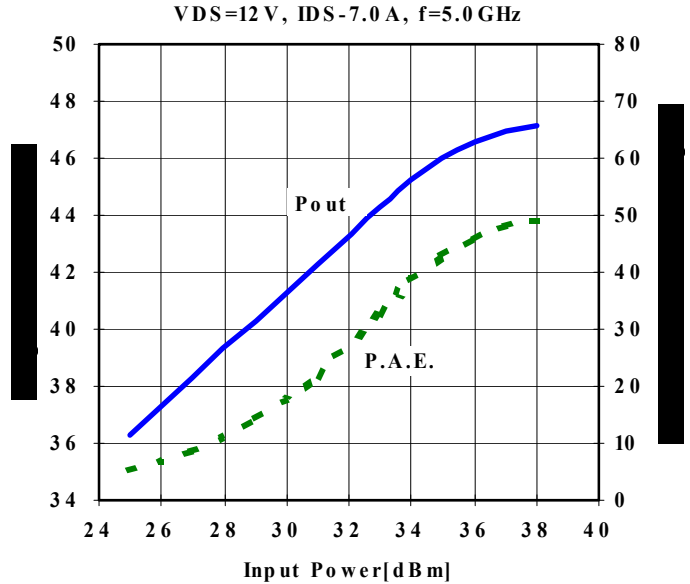
# FLM4450-45F

C-Band Internally Matched FET

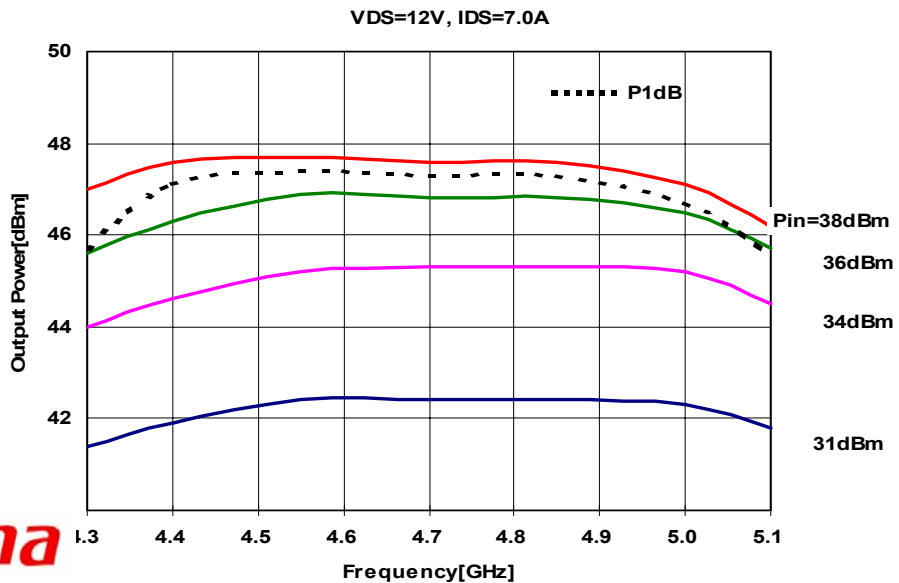
POWER DERATING CURVE



OUTPUT POWER , POWER ADDED EFFICIENCY vs. INPUT POWER



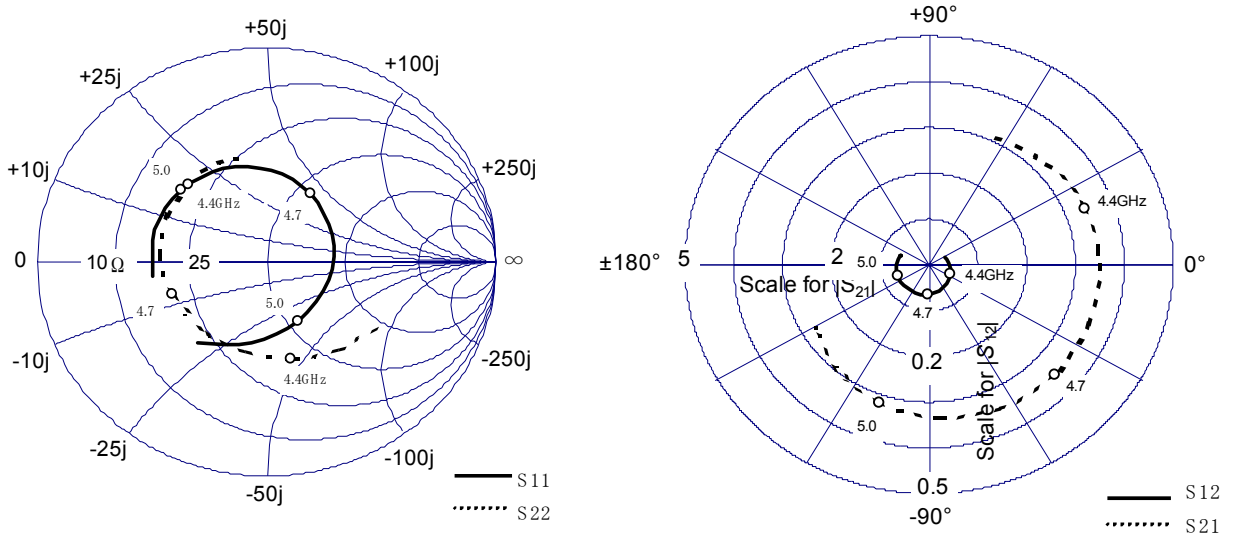
OUTPUT POWER vs. FREQUENCY



# FLM4450-45F

## C-Band Internally Matched FET

### ■ S-PARAMETER



VDS=12V, IDS=7.0A

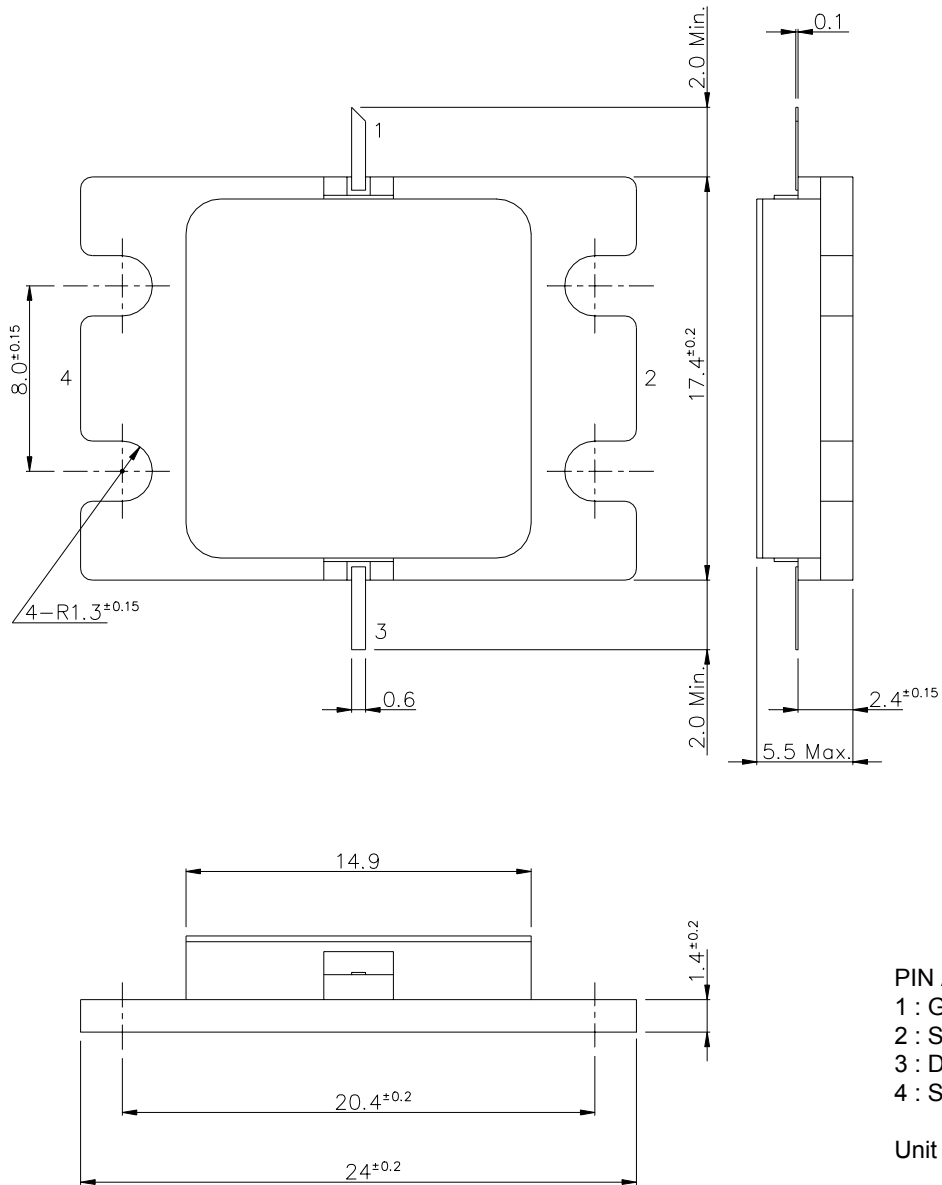
Freq [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4.20	0.51	-171.90	3.12	63.20	0.04	29.60	0.57	-33.00
4.30	0.51	162.50	3.28	42.50	0.05	3.50	0.51	-53.10
4.40	0.50	137.60	3.41	21.10	0.06	-23.30	0.46	-76.70
4.50	0.48	113.30	3.50	-0.10	0.06	-46.90	0.43	-103.40
4.60	0.43	87.60	3.53	-21.70	0.07	-69.30	0.42	-132.90
4.70	0.37	59.20	3.52	-43.10	0.08	-92.30	0.44	-159.90
4.80	0.31	24.40	3.48	-64.70	0.08	-115.30	0.47	176.30
4.90	0.28	-18.00	3.36	-86.20	0.08	-137.00	0.49	153.10
5.00	0.31	-63.60	3.19	-108.20	0.08	-158.10	0.49	133.10
5.10	0.39	-100.40	2.97	-129.20	0.08	-178.50	0.50	114.10
5.20	0.48	-128.30	2.71	-149.40	0.08	162.30	0.50	97.90

# FLM4450-45F

C-Band Internally Matched FET

## ■ Package Out Line

Case Style : IK



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# FLM4450-45F

## C-Band Internally Matched FET

### 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 these products 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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