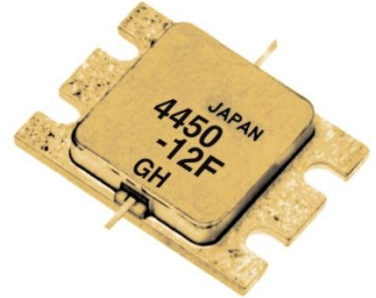


### FEATURES

- 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 IM3 =  $-46\text{dBc}@P_o = 30.5\text{dBm}$
- Broad Band: 4.4 to 5.0GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- 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.

SEDI's stringent Quality Assurance Program assures the highest reliability and consistent performance.

### ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25\text{deg.C}$ )

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_T$	$T_c = 25\text{deg.C}$	57.6	W
Storage Temperature	$T_{stg}$		-65 to +175	deg.C
Channel Temperature	$T_{ch}$		175	deg.C

SEDI 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 50ohm.

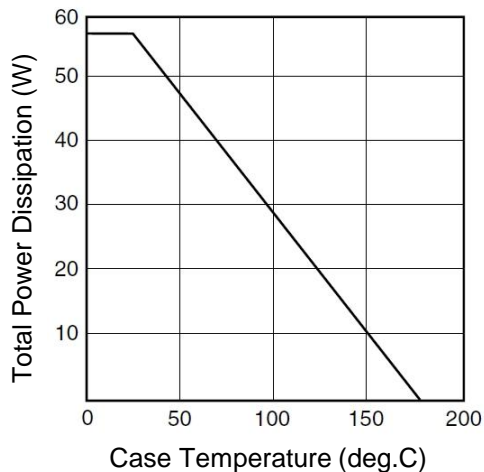
### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25\text{deg.C}$ )

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0V$	-	5800	8700	mA
Transconductance	$g_m$	$V_{DS}=5V, I_{DS}=3400\text{mA}$	-	2900	-	mS
Pinch-off Voltage	$V_p$	$V_{DS}=5V, I_{DS}=300\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-300\text{uA}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS}=10V,$	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$	$I_{DS}=0.55 I_{DSS}$ (Typ.),	9.5	10.5	-	dB
Drain Current	$I_{dsr}$	$f=4.4$ to $5.0$ GHz,	-	3250	3800	mA
Power-added Efficiency	$\eta_{add}$	$Z_S=Z_L=50\text{ohm}$	-	39	-	%
Gain Flatness	$\Delta G$		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 5.0$ GHz, $\Delta f = 10$ 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	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	deg.C

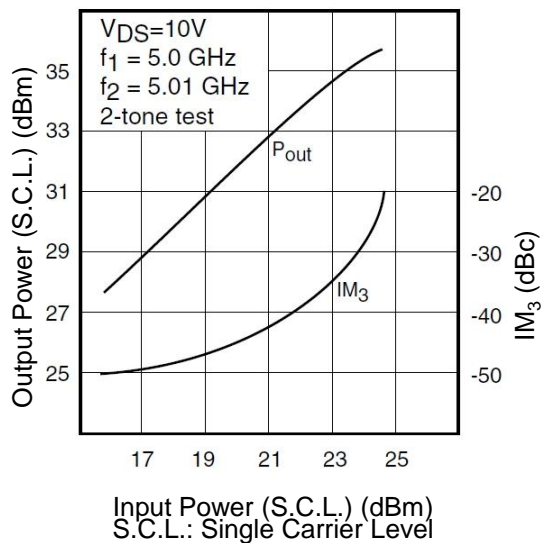
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

CASE STYLE	IK	
ESD	Class 3A	4000V to 8000V
Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)		
RoHS Compliance	Yes	

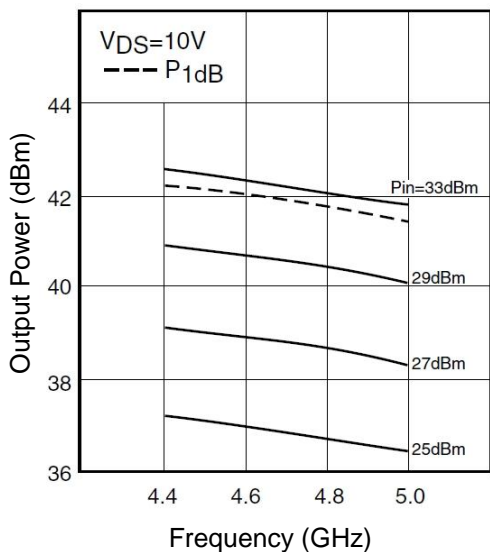
**POWER DERATING CURVE**



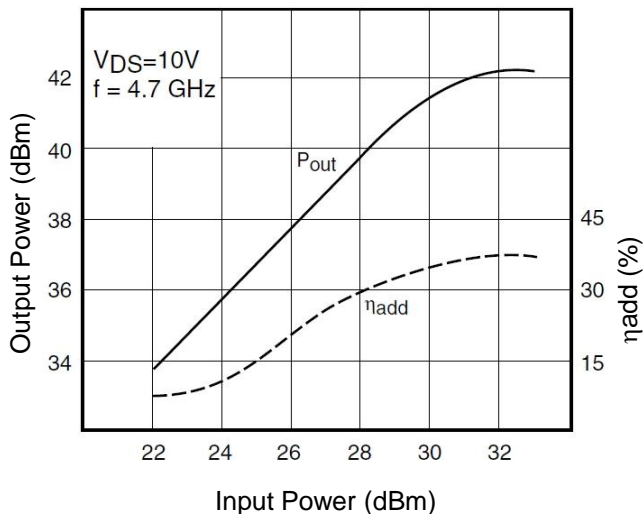
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**

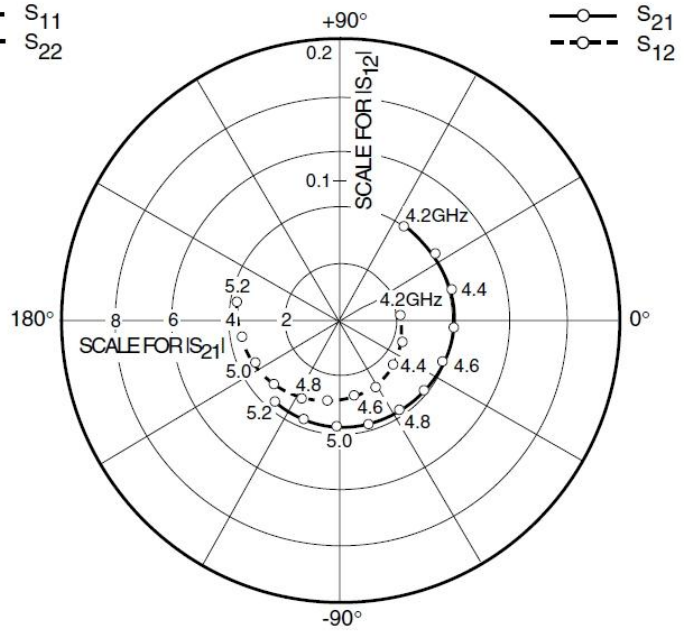
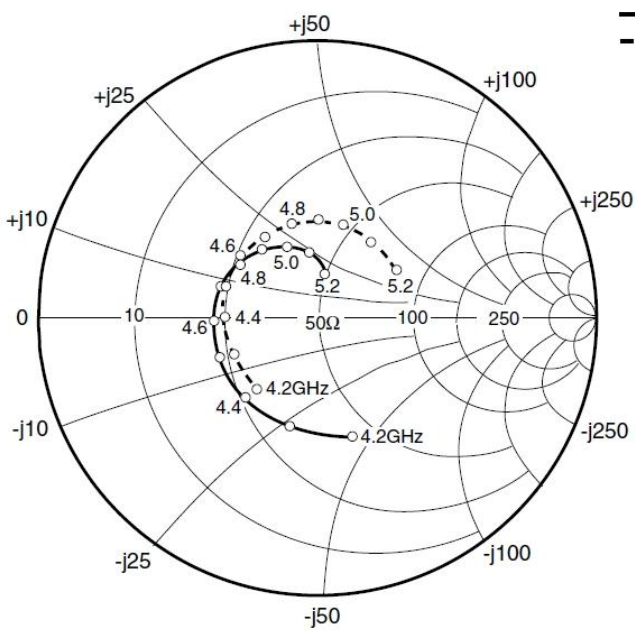


**OUTPUT POWER vs. FREQUENCY**



**OUTPUT POWER vs. INPUT POWER**



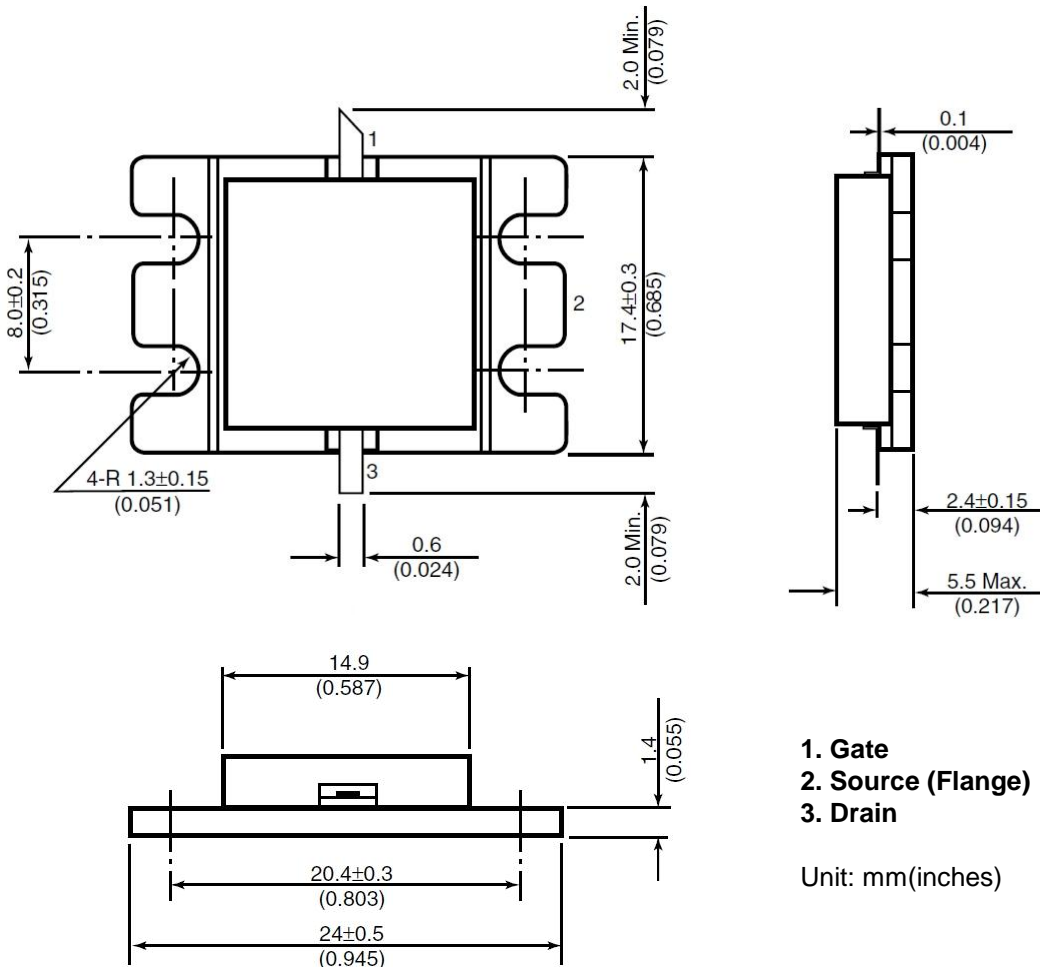


### S-PARAMETERS

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

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	0.443	-73.5	4.043	55.9	0.042	3.7	0.342	-130.3
4300	0.400	-104.2	4.099	35.4	0.046	-20.2	0.332	-155.8
4400	0.384	-131.9	4.068	15.3	0.048	-39.5	0.335	-179.0
4500	0.379	-157.6	4.016	-3.8	0.052	-61.9	0.342	160.9
4600	0.370	-178.8	3.925	-22.3	0.054	-81.1	0.342	142.5
4700	0.364	161.8	3.842	-40.1	0.059	-100.3	0.342	124.2
4800	0.341	144.8	3.786	-57.7	0.062	-117.7	0.349	106.8
4900	0.321	128.8	3.736	-75.3	0.066	-136.6	0.352	90.8
5000	0.279	112.4	3.711	-93.1	0.068	-153.9	0.346	74.5
5100	0.238	97.1	3.711	-111.4	0.072	-171.1	0.332	55.4
5200	0.168	80.2	3.698	-130.5	0.077	169.6	0.325	32.8

**Case Style "IK"**  
**Metal-Ceramic Hermetic Package**





# **FLM4450-12F**

***C-Band Internally Matched FET***

**For further information please contact:**

**<http://global-sei.com/Electro-optic/about/office.html>**

### **CAUTION**

This product contains **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.