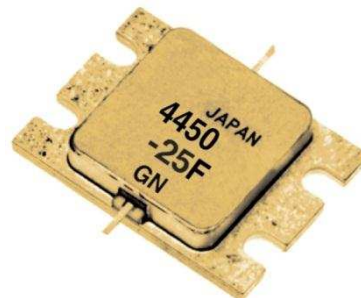


### FEATURES

- 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 IM3 =  $-46\text{dBc}@P_o = 33.5\text{dBm}$
- Broad Band: 4.4 to 5.0GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package



### DESCRIPTION

The FLM4450-25F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

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	$P_T$	$T_c = 25\text{deg.C}$	93.7	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 64.0 and -11.2 mA respectively with gate resistance of 25ohm.

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0V$	-	11.6	17.4	A
Transconductance	$g_m$	$V_{DS}=5V, I_{DS}=6800\text{mA}$	-	5800	-	mS
Pinch-off Voltage	$V_p$	$V_{DS}=5V, I_{DS}=600\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-600\text{uA}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS}=10V,$	43.5	44.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$	$I_{DS}=0.55 I_{DSS}$ (Typ.),	8.5	9.5	-	dB
Drain Current	$I_{dsr}$	$f=4.4$ to $5.0$ GHz,	-	6200	7440	mA
Power-added Efficiency	$\eta_{add}$	$Z_S=Z_L=50\text{ohm}$	-	40	-	%
Gain Flatness	$\Delta G$		-	-	+/-0.6	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 5.0$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 33.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	1.4	1.6	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	100	deg.C

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

### CASE STYLE

IK

### ESD

Class 3A

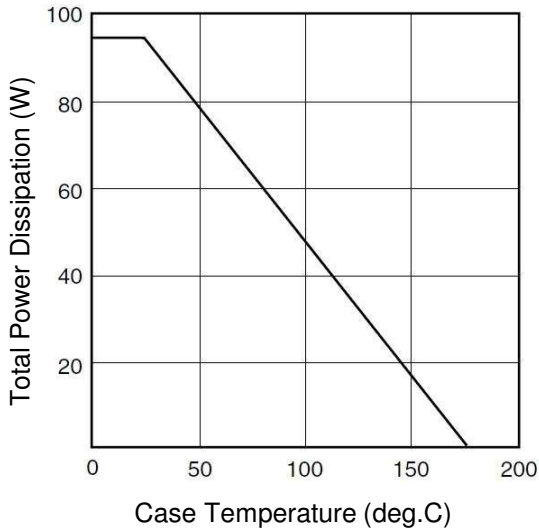
4000V to 8000V

Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)

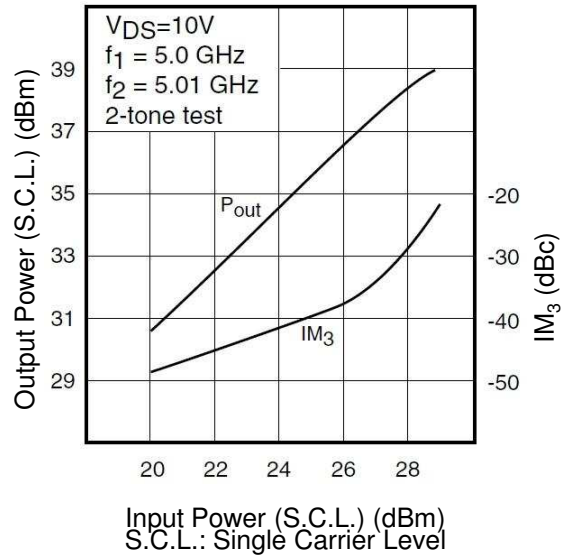
### RoHS Compliance

Yes

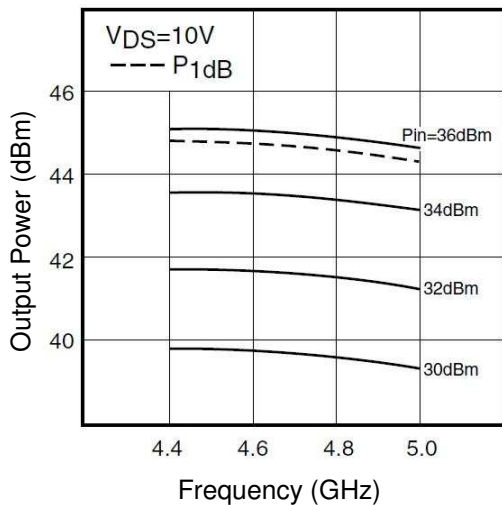
**POWER DERATING CURVE**



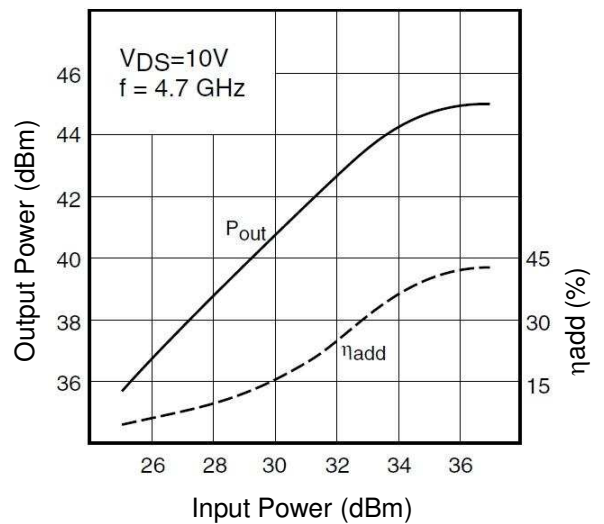
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**

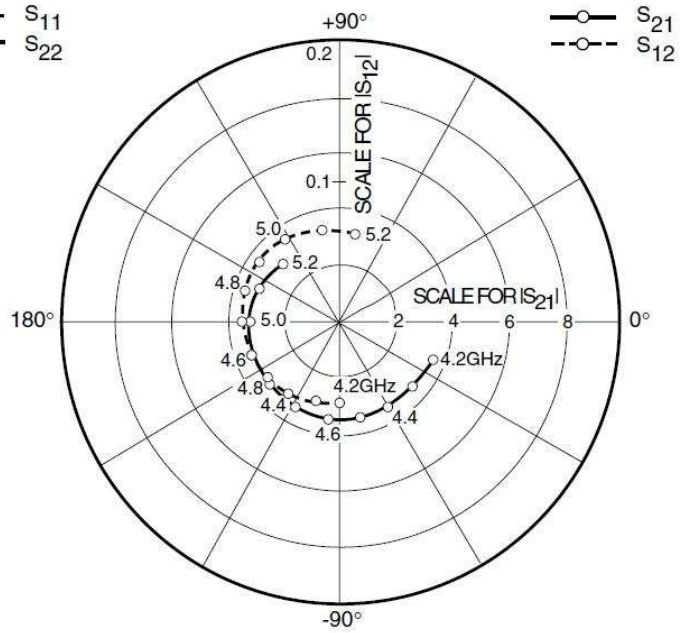
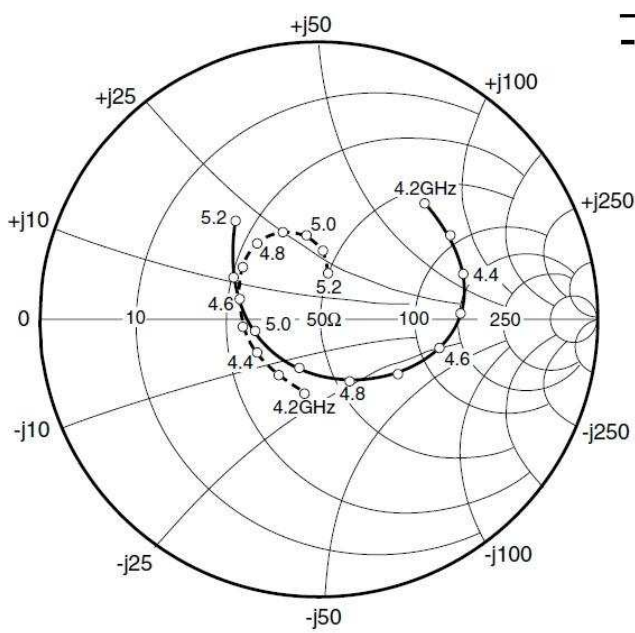


**OUTPUT POWER vs. FREQUENCY**



**OUTPUT POWER vs. INPUT POWER**



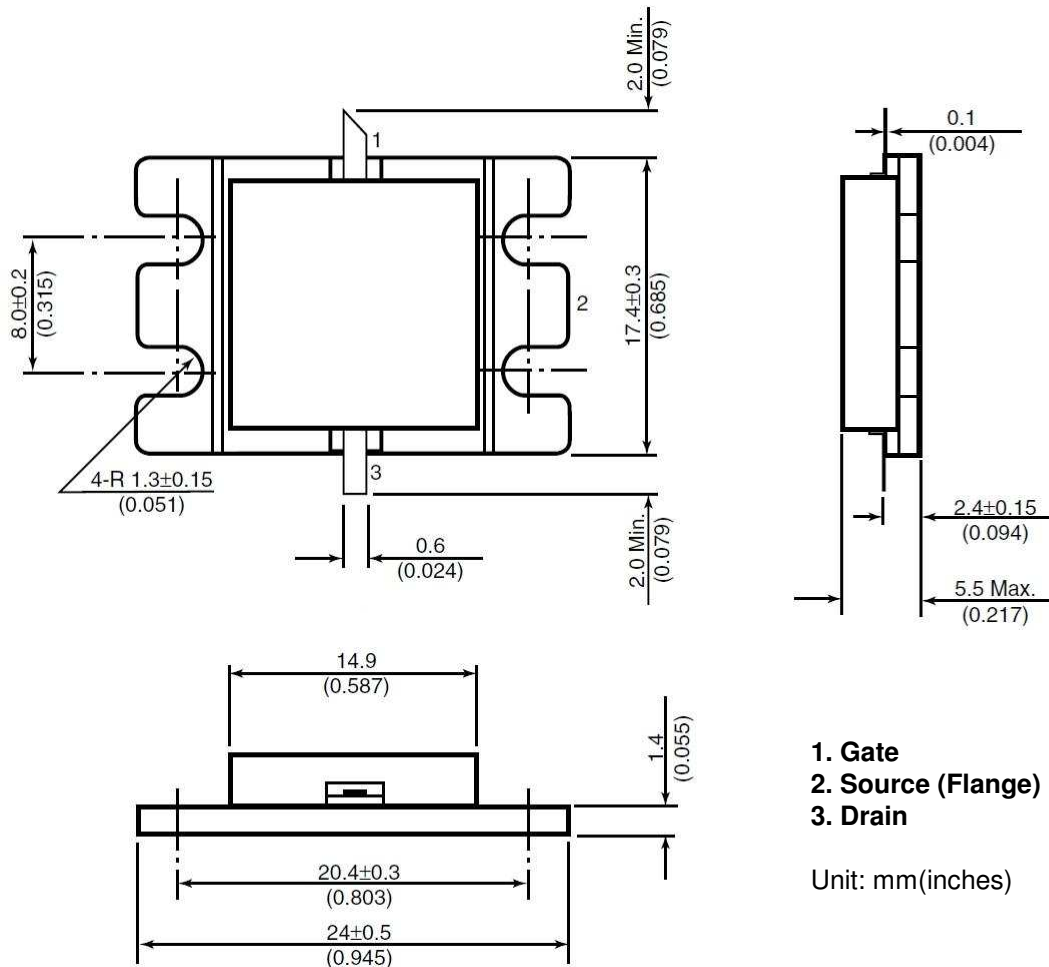


### S-PARAMETERS

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

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	0.563	48.0	3.596	-23.7	0.057	-90.6	0.276	-100.5
4300	0.565	33.0	3.527	-41.7	0.059	-108.5	0.252	-124.1
4400	0.544	17.5	3.485	-60.9	0.062	-126.3	0.253	-150.0
4500	0.503	2.7	3.483	-78.9	0.064	-143.1	0.273	-172.9
4600	0.440	-13.9	3.495	-97.5	0.068	-160.1	0.300	166.4
4700	0.349	-35.8	3.507	-118.3	0.070	-179.5	0.331	146.2
4800	0.255	-65.4	3.501	-138.5	0.073	162.1	0.347	129.1
4900	0.195	-113.5	3.449	-159.4	0.072	142.5	0.343	112.5
5000	0.234	-169.2	3.333	179.2	0.072	122.3	0.311	97.2
5100	0.340	155.0	3.153	157.8	0.068	101.6	0.248	84.9
5200	0.462	129.6	2.908	135.3	0.064	80.0	0.164	78.6

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



- 1. Gate
- 2. Source (Flange)
- 3. Drain

Unit: mm(inches)



# **FLM4450-25F**

***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.