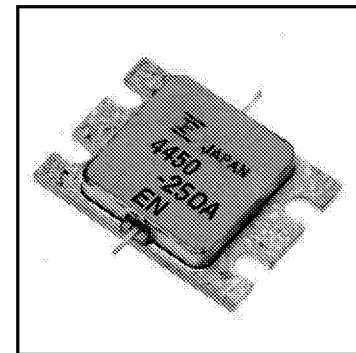


### FEATURES

- High Output Power:  $P_{1dB} = 44\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 9.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 35\%$  (Typ.)
- Low  $IM_3 = -45\text{dBc}@P_o = 32\text{dBm}$
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package



### DESCRIPTION

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

Fujitsu'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	$P_T$	$T_C = 25^\circ\text{C}$	93.7	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 24.0 and -11.2 mA respectively with gate resistance of 25 $\Omega$ .

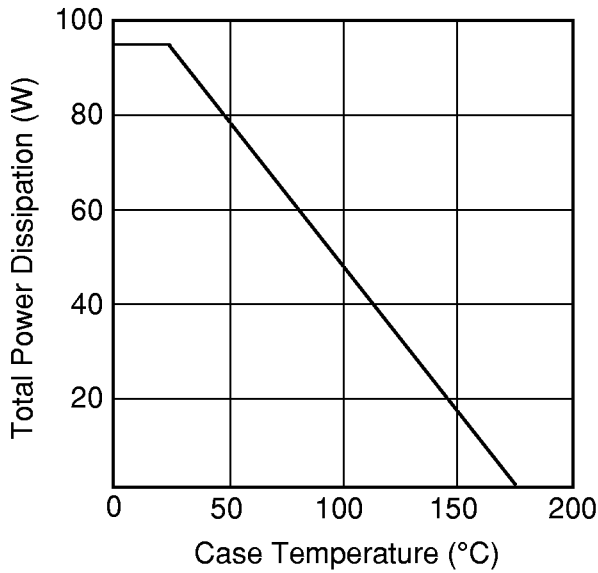
### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$ )

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	11.4	17.0	mA
Transconductance	$g_m$	$V_{DS} = 5\text{V}, I_{DS} = 6800\text{mA}$	-	5800	-	mS
Pinch-off Voltage	$V_p$	$V_{DS} = 5\text{V}, I_{DS} = 600\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -600\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS} = 10\text{V},$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	43	44	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		8.5	9.5	-	dB
Drain Current	$I_{dsr}$		-	6200	7600	mA
Power-added Efficiency	$\eta_{add}$		-	35	-	%
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 $P_{out} = 32\text{dBm S.C.L.}$	-42	-45	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	1.4	1.6	$^\circ\text{C/W}$
Channel Temperature Rise	$\Delta T_{ch}$	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	100	$^\circ\text{C}$

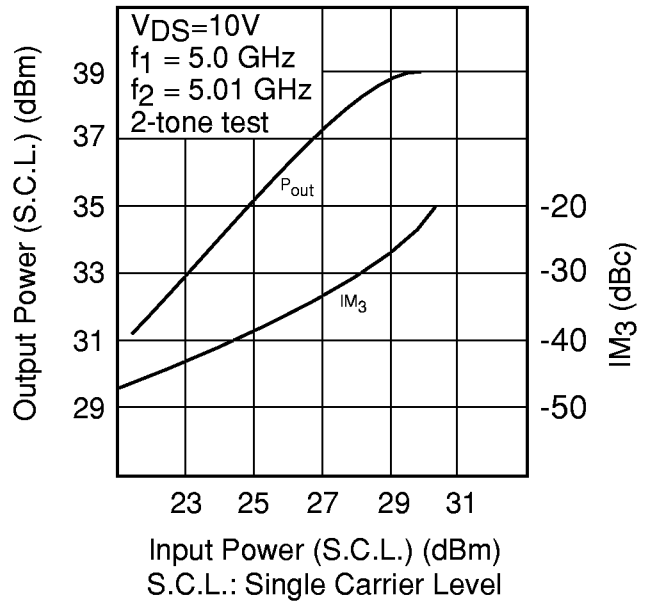
CASE STYLE: IK

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

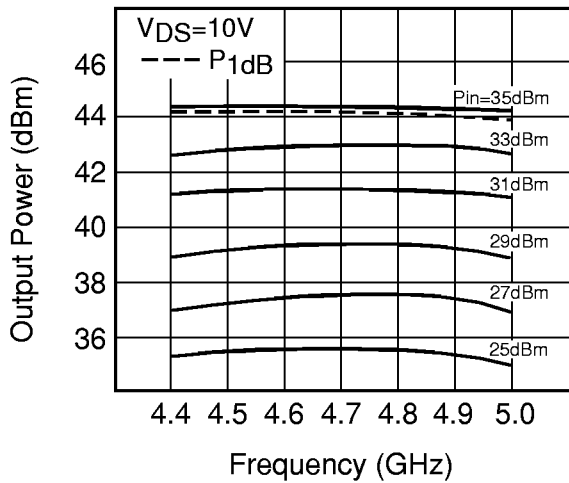
**POWER DERATING CURVE**



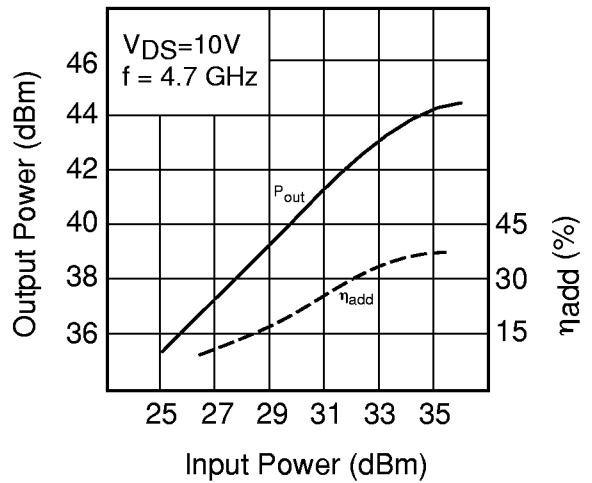
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**



**OUTPUT POWER vs. FREQUENCY**

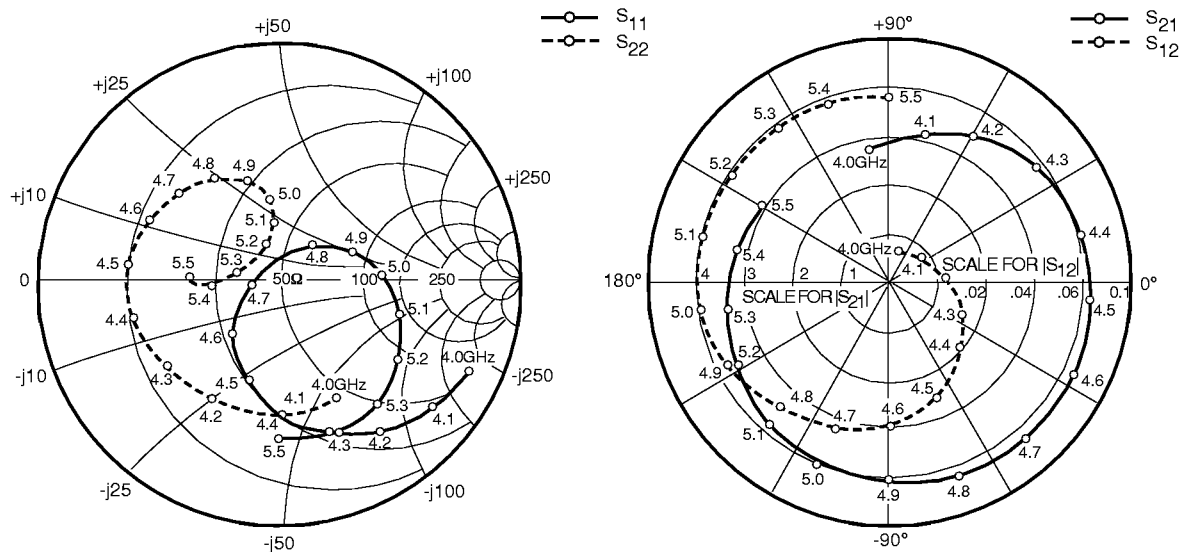


**OUTPUT POWER vs. INPUT POWER**



# FLM4450-25DA

## Internally Matched Power GaAs FETs

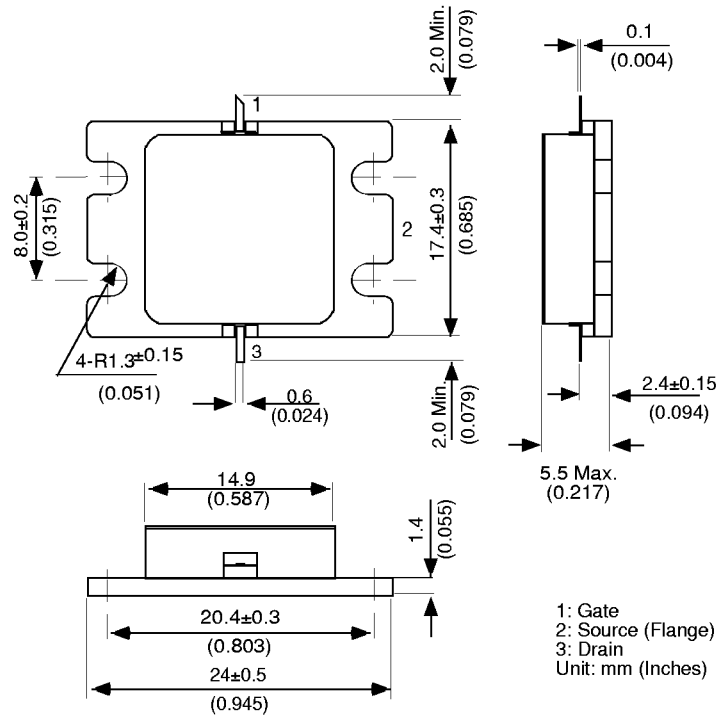


### S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 6200mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4000	.764	-25.8	2.865	99.6	.013	77.1	.420	-64.9
4100	.706	-40.6	3.200	79.8	.016	35.7	.425	-92.7
4200	.634	-56.3	3.507	59.1	.023	6.9	.448	-120.3
4300	.544	-72.8	3.780	37.9	.031	-20.1	.481	-145.0
4400	.440	-90.1	3.998	16.2	.039	-45.3	.505	-167.5
4500	.318	-109.2	4.140	-5.6	.048	-69.4	.517	172.2
4600	.185	-131.4	4.222	-27.4	.056	-91.0	.506	154.3
4700	.058	-177.8	4.232	-49.2	.064	-112.1	.472	137.4
4800	.102	50.7	4.162	-70.5	.069	-133.7	.420	122.0
4900	.220	21.2	4.058	-91.3	.075	-153.7	.349	108.5
5000	.325	1.7	3.930	-111.6	.078	-174.5	.265	97.8
5100	.413	-15.3	3.806	-131.4	.080	165.5	.173	92.7
5200	.484	-32.8	3.674	-151.6	.080	146.7	.091	108.1
5300	.532	-51.0	3.514	-171.5	.080	127.5	.094	165.7
5400	.548	-70.0	3.364	168.6	.078	108.9	.178	-178.9
5500	.548	-90.1	3.196	148.2	.075	90.3	.273	178.3

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



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