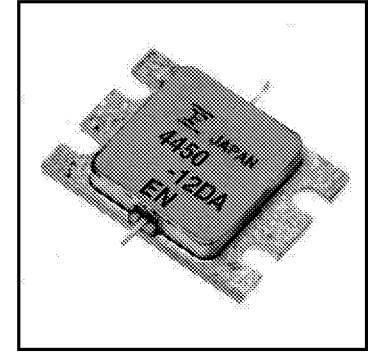


FEATURES

- High Output Power: $P_{1dB} = 42.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 9.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 32\%$ (Typ.)
- Low $IM_3 = -45\text{dBc}@P_o = 31.5\text{dBm}$
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package



DESCRIPTION

The FLM4450-18DA 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	$T_C = 25^\circ\text{C}$	83.3	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 13.0 and -11.6 mA respectively with gate resistance of 25 Ω .

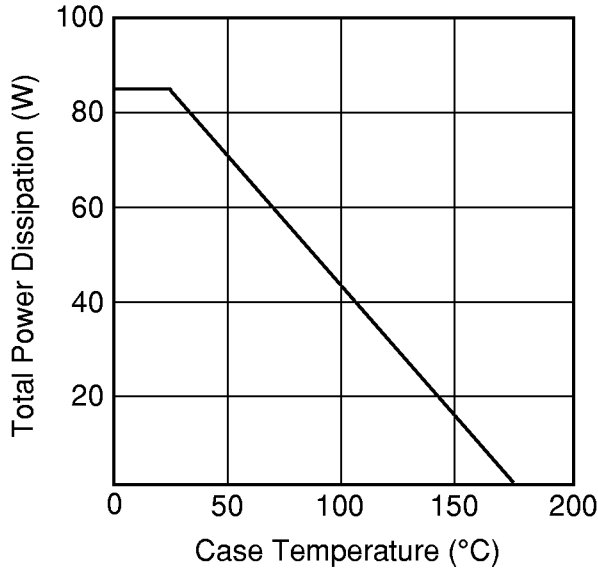
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	8.7	13.0	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 4800\text{mA}$	-	4000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 480\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -480\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	41.5	42.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB
Drain Current	I_{dsr}		-	4800	6000	mA
Power-added Efficiency	η_{add}		-	32	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 5.0 \text{GHz}, \Delta f = 10 \text{MHz}$ 2-Tone Test $P_{out} = 31.5\text{dBm S.C.L.}$	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.6	1.8	$^\circ\text{C}/\text{W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

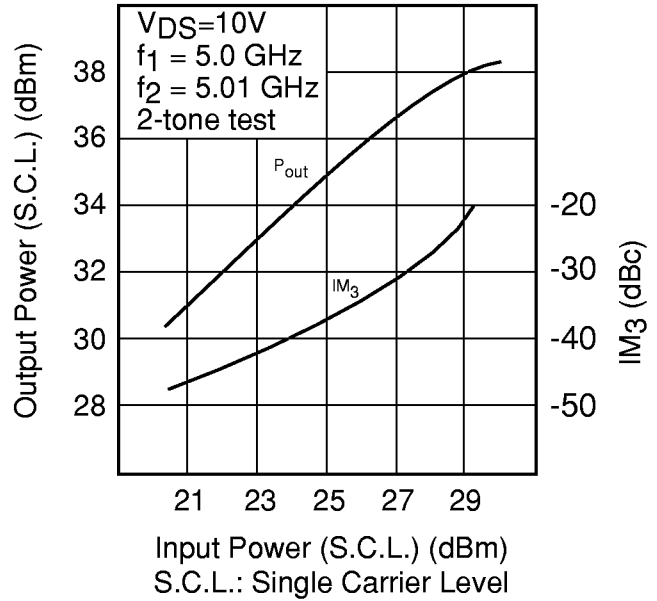
CASE STYLE: IK

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

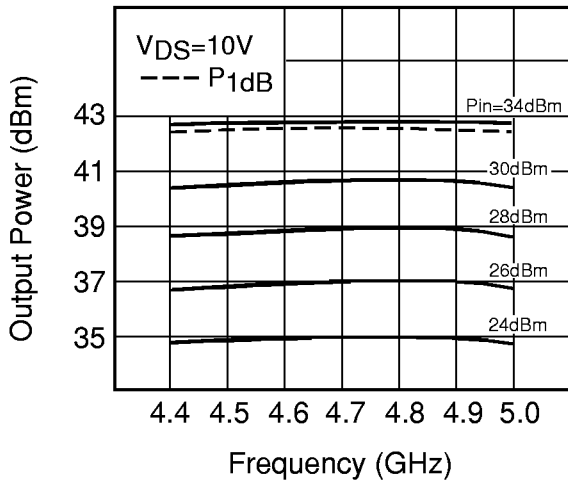
POWER DERATING CURVE



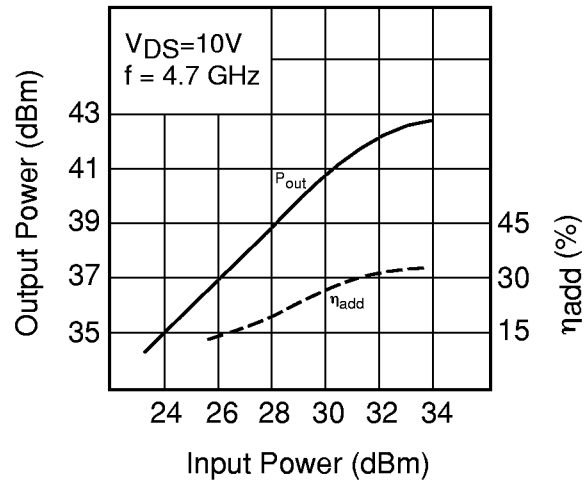
OUTPUT POWER & IM₃ vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY

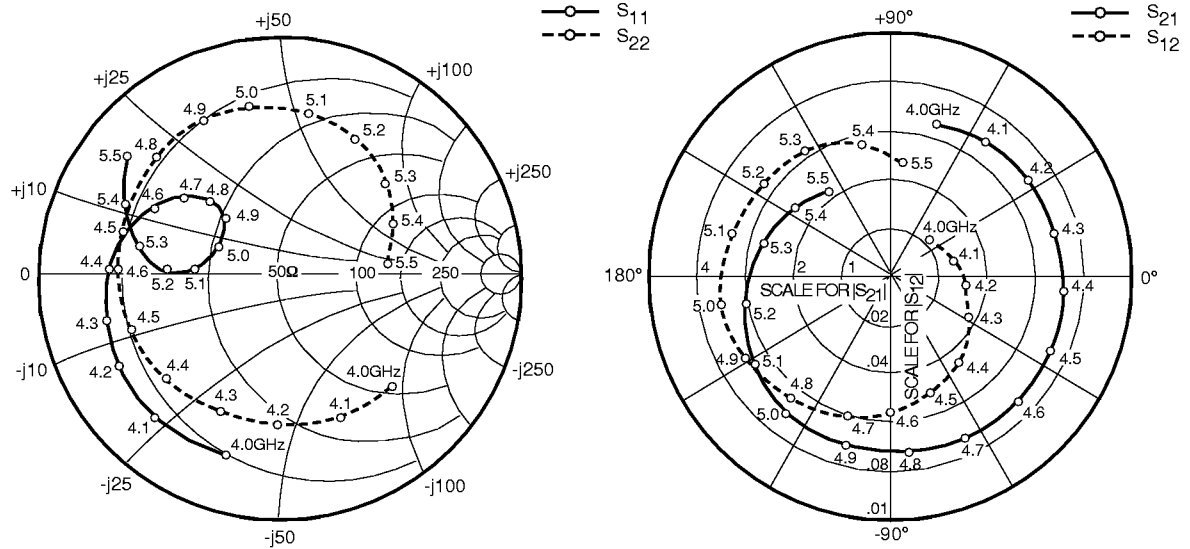


OUTPUT POWER vs. INPUT POWER



FLM4450-18DA

Internally Matched Power GaAs FETs

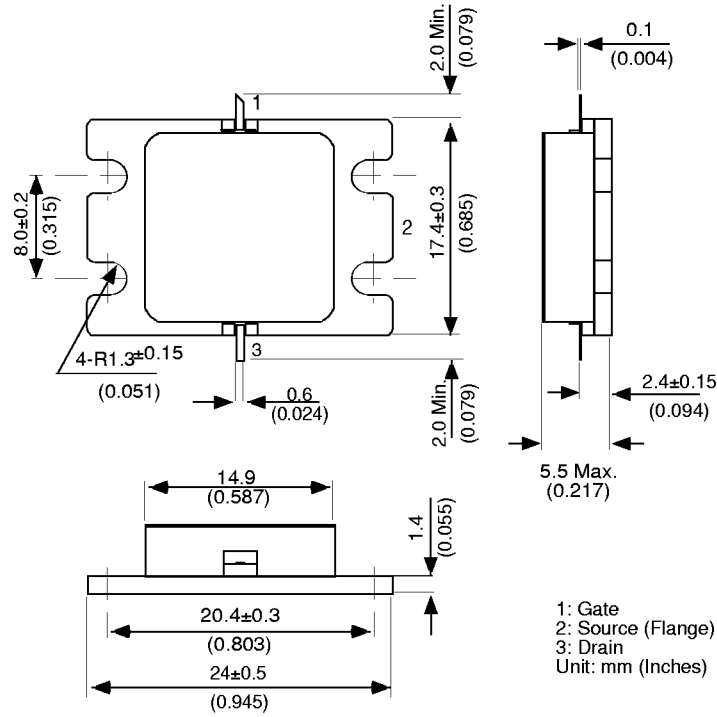


S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 4800mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4000	.665	-107.8	3.293	75.7	.022	42.7	.580	-43.6
4100	.657	-129.4	3.425	55.0	.027	16.6	.543	-65.5
4200	.642	-149.1	3.499	34.5	.032	-8.1	.517	-89.1
4300	.622	-166.3	3.546	14.7	.037	-29.5	.510	-113.4
4400	.590	178.3	3.578	-4.9	.043	-51.2	.516	-137.2
4500	.545	163.8	3.606	-24.3	.048	-72.2	.534	-160.3
4600	.485	150.8	3.619	-43.6	.054	-91.4	.557	177.9
4700	.406	139.3	3.639	-63.6	.059	-111.9	.580	156.8
4800	.317	131.1	3.652	-83.8	.063	-131.8	.601	136.4
4900	.220	132.3	3.623	-104.9	.068	-151.1	.611	116.7
5000	.176	156.2	3.550	-126.7	.070	-172.4	.609	97.3
5100	.243	177.5	3.402	-149.1	.070	166.6	.590	78.1
5200	.367	177.1	3.173	-171.8	.067	144.3	.551	59.1
5300	.496	167.5	2.866	166.0	.064	124.2	.499	40.3
5400	.605	155.0	2.527	144.8	.058	104.3	.440	22.4
5500	.685	142.0	2.203	125.0	.051	85.8	.379	5.2

Case Style "IK"
 Metal-Ceramic Hermetic Package



2