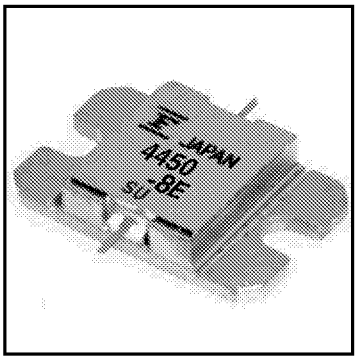
FLM4450-8E
Internally Matched Power GaAs FETs

FUJITSU

FEATURES

- High Output Power: P_{1dB} = 39dBm (Typ.)
- High Gain: G_{1dB} = 10.0dB (Typ.)
- High PAE: η_{add} = 32% (Typ.)
- Low IM_3 = -45dBc@Po = 28dBm
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package



DESCRIPTION

The FLM4450-8E 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 Ta=25°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°C	42.8	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		175	°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 16.0 and -4.4 mA respectively with gate resistance of 100Ω.

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	3600	5400	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 2200mA	-	2000	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} =180mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -180μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} =10V, I_{DS} = 0.6 I_{DSS} (Typ.), f = 4.4 ~ 5.0 GHz, Z_S=Z_L=50 ohm	38	39	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		9	10	-	dB
Drain Current	I_{dsr}		-	2200	2600	mA
Power-added Efficiency	η_{add}		-	32	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 5.0 GHz, Δf = 10 MHz 2-Tone Test P_{out} = 28dBm S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	3.0	3.5	°C/W

CASE STYLE: IB

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

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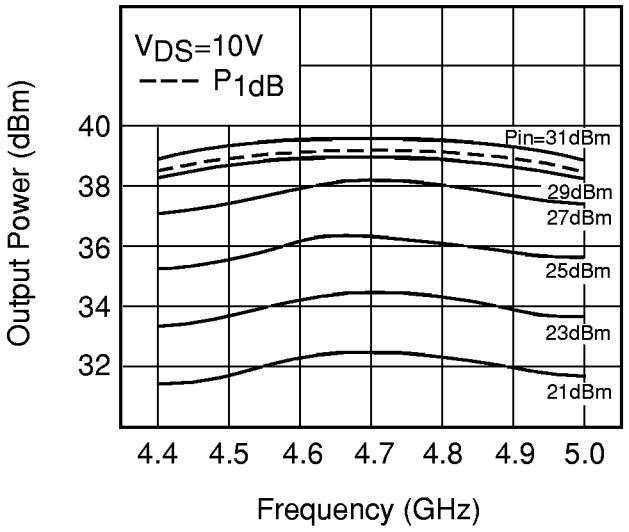
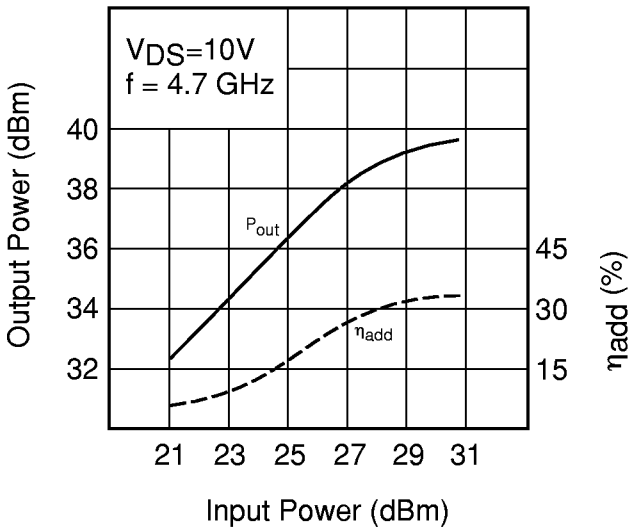
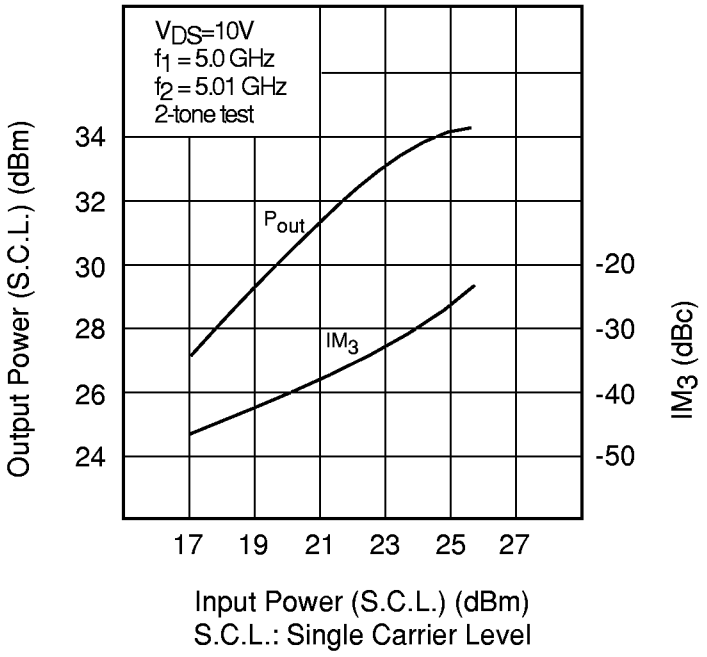
OUTPUT POWER vs. FREQUENCY

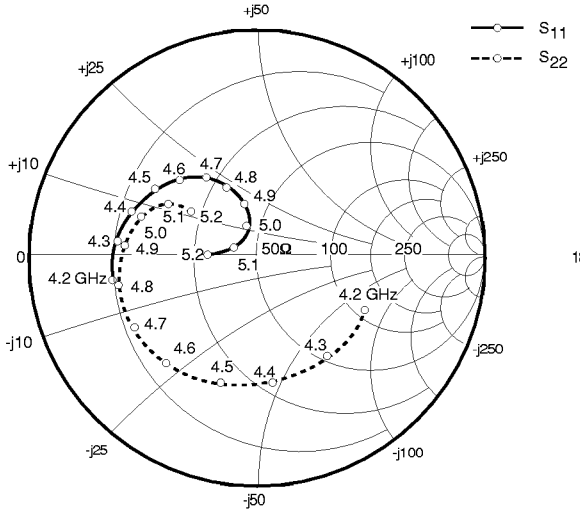


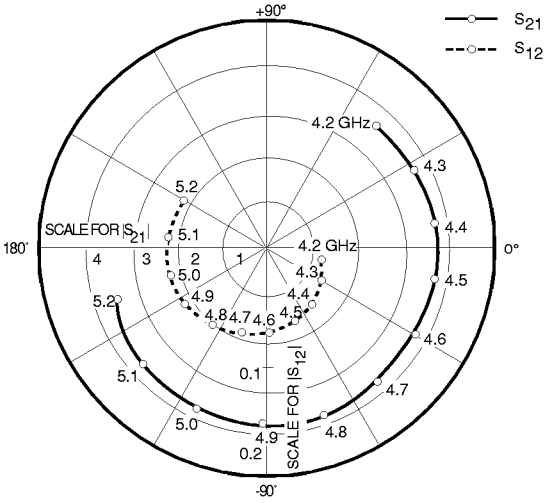
OUTPUT POWER vs. INPUT POWER



OUTPUT POWER & IM3 vs. INPUT POWER







S-PARAMETERS

V_{DS} = 10V, I_{DS} = 2200mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	.636	-170.3	3.623	48.7	.048	-11.4	.533	-27.7
4300	.617	174.5	3.706	29.1	.054	-30.2	.514	-54.7
4400	.583	160.6	3.696	8.8	.061	-50.2	.555	-82.0
4500	.540	147.6	3.756	-10.3	.066	-68.4	.557	-106.1
4600	.483	136.1	3.744	-30.1	.072	-88.8	.610	-130.0
4700	.417	124.5	3.764	-50.1	.075	-106.6	.606	-148.9
4800	.334	113.5	3.790	-70.5	.081	-126.1	.623	-167.9
4900	.238	106.5	3.778	-91.7	.083	-146.1	.584	176.2
5000	.136	112.4	3.750	-114.0	.087	-165.9	.541	161.3
5100	.115	162.1	3.644	-137.1	.088	172.3	.451	151.2
5200	.226	179.3	3.457	-160.8	.085	151.3	.352	147.3

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Case Style "IB"

Metal-Ceramic Hermetic Package