

FLM6472-18DA

Internally Matched Power GaAs FETs

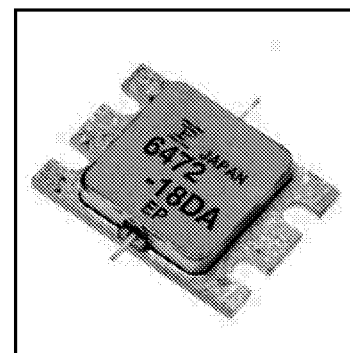
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FEATURES

- High Output Power: $P_{1dB} = 42.5dBm$ (Typ.)
- High Gain: $G_{1dB} = 7.0dB$ (Typ.)
- High PAE: $\eta_{add} = 30\%$ (Typ.)
- Low $IM_3 = -45dBc@P_o = 31.5dBm$
- Broad Band: 6.4 ~ 7.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM6472-18DA 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 $T_a=25^\circ C$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ C$	83.3	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ C$
Channel Temperature	T_{ch}		175	$^\circ C$

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 25Ω .

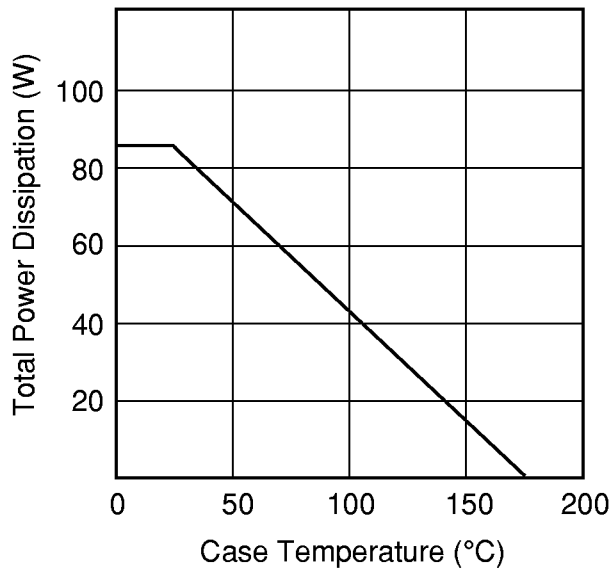
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	8.7	13.0	mA
Transconductance	g_m	$V_{DS} = 5V, I_{DS} = 4800mA$	-	4000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 480mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -480\mu A$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10V,$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 6.4 \sim 7.2$ GHz, $Z_S = Z_L = 50$ ohm	41.5	42.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.0	7.0	-	dB
Drain Current	I_{dsr}		-	4800	6000	mA
Power-added Efficiency	η_{add}		-	30	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 7.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 31.5dBm$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.6	1.8	$^\circ C/W$
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	80	$^\circ C$

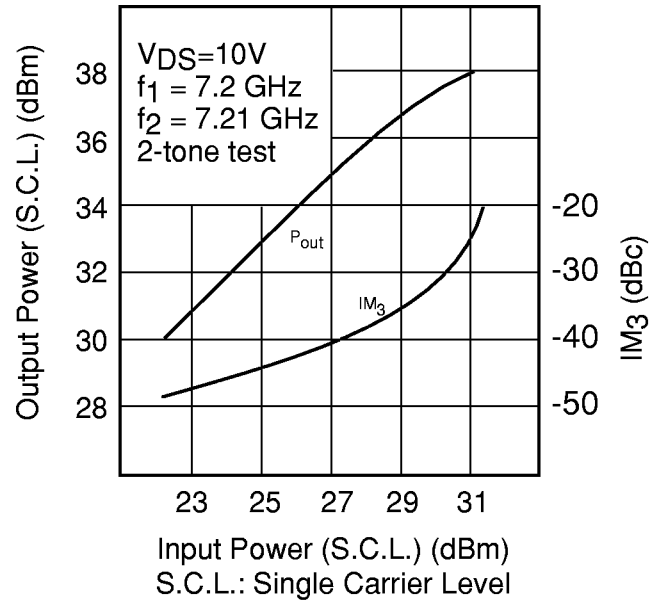
CASE STYLE: IK

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

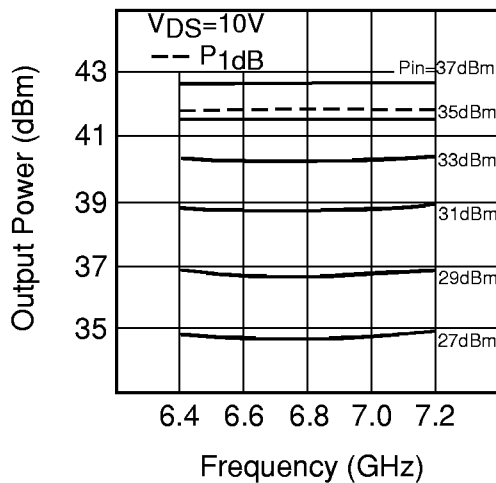
POWER DERATING CURVE



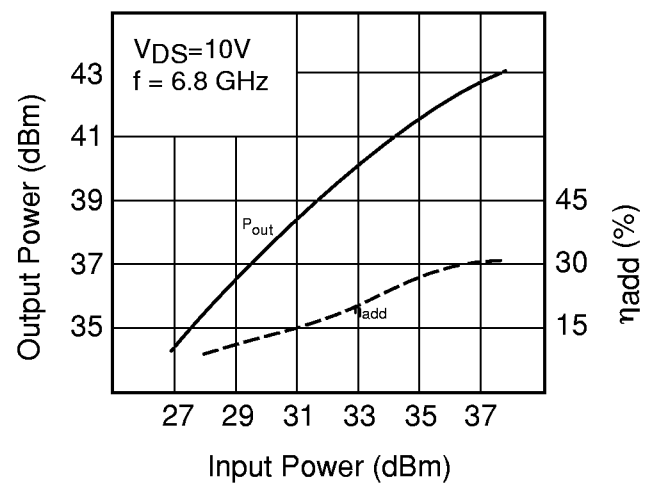
OUTPUT POWER & IM₃ vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY



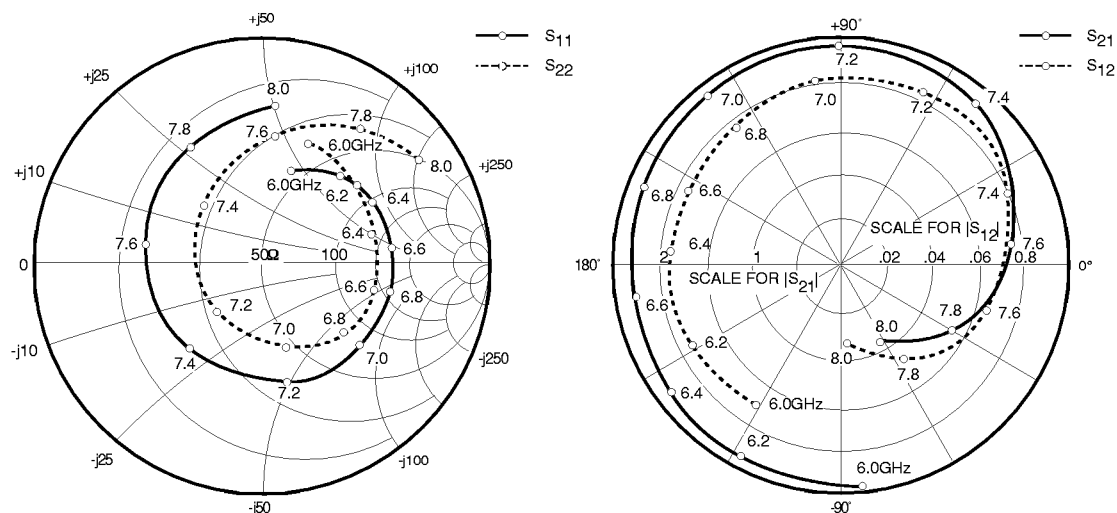
OUTPUT POWER vs. INPUT POWER



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S-PARAMETERS

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

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6000	.346	71.5	2.483	-85.3	.070	-122.7	.481	69.3
6100	.389	60.4	2.433	-100.2	.071	-137.1	.465	55.1
6200	.425	49.9	2.385	-114.6	.071	-150.9	.450	41.6
6300	.450	39.8	2.346	-129.0	.072	-164.7	.439	27.7
6400	.472	30.7	2.318	-143.8	.074	176.6	.405	15.2
6500	.480	19.8	2.291	-157.5	.073	168.6	.419	0.6
6600	.485	9.3	2.279	-171.6	.074	156.0	.405	-12.4
6700	.485	-1.5	2.286	173.8	.075	141.7	.388	-26.1
6800	.480	-13.2	2.304	158.9	.076	127.8	.364	-39.8
6900	.471	-26.1	2.333	143.5	.079	113.4	.332	-55.5
7000	.457	-40.6	2.371	127.2	.081	97.9	.280	-73.8
7100	.441	-57.4	2.406	111.2	.082	83.6	.243	-95.8
7200	.420	-78.0	2.431	92.3	.083	64.5	.187	-132.2
7300	.401	-102.2	2.405	72.1	.082	45.1	.200	178.8
7400	.390	-130.3	2.303	50.7	.080	23.7	.274	135.1
7500	.393	-160.6	2.126	29.1	.075	2.4	.383	105.7
7600	.419	170.1	1.886	7.9	.066	-18.2	.489	84.3
7700	.458	143.7	1.617	-12.2	.057	-38.5	.578	67.5
7800	.506	121.3	1.361	-30.7	.048	-56.5	.646	54.2
7900	.558	102.5	1.129	-47.5	.039	-73.6	.683	43.6
8000	.609	86.3	.933	-63.0	.033	-87.6	.723	34.6

Case Style "IK"
Metal-Ceramic Hermetic Package

