

FLM5964-12DA

Internally Matched Power GaAs FETs

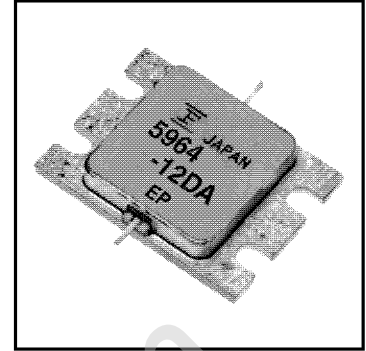
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FEATURES

- High Output Power: $P_{1dB} = 41dBm$ (Typ.)
- High Gain: $G_{1dB} = 9.5dB$ (Typ.)
- High PAE: $\eta_{add} = 35\%$ (Typ.)
- Low $IM_3 = -45dBc@P_o = 30dBm$
- Broad Band: 5.9 ~ 6.4GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM5964-12DA 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	$T_C = 25^\circ C$	57.6	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 12.0 and -5.6 mA respectively with gate resistance of 50Ω .

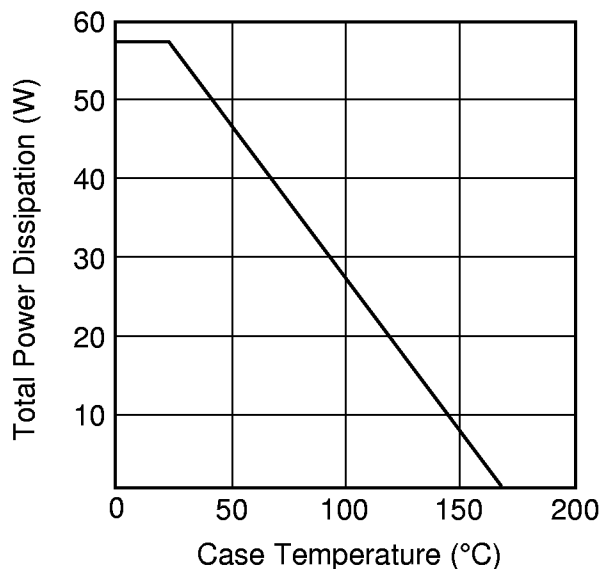
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	5700	8500	mA
Transconductance	g_m	$V_{DS} = 5V, I_{DS} = 3400mA$	-	2900	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 300mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -300\mu A$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10V,$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 5.9 \sim 6.4$ GHz, $Z_S = Z_L = 50$ ohm	40	41	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.5	9.5	-	dB
Drain Current	I_{dsr}		-	3100	3800	mA
Power-added Efficiency	η_{add}		-	35	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 6.4$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 30dBm$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	2.3	2.6	$^\circ C/W$
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	80	$^\circ C$

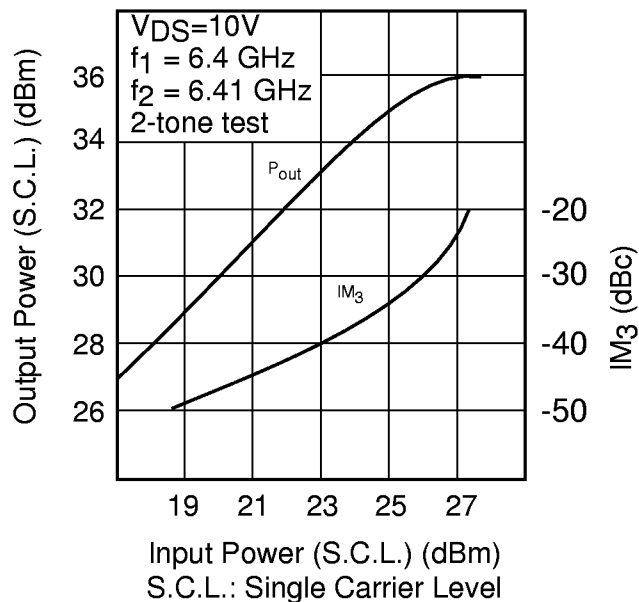
CASE STYLE: IK

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

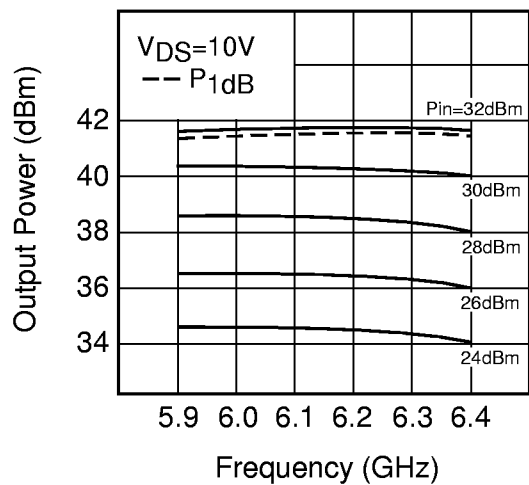
POWER DERATING CURVE



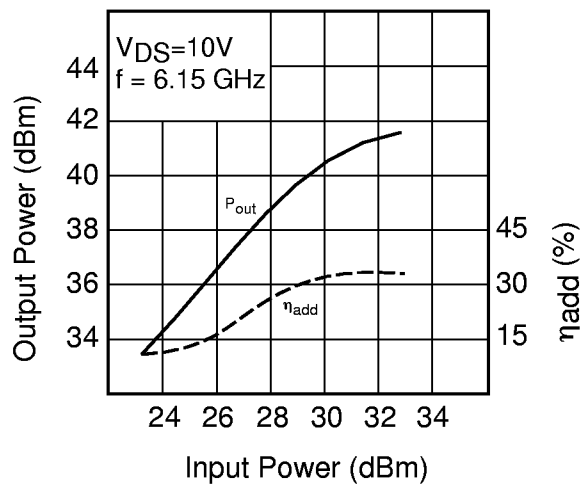
OUTPUT POWER & IM₃ vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY



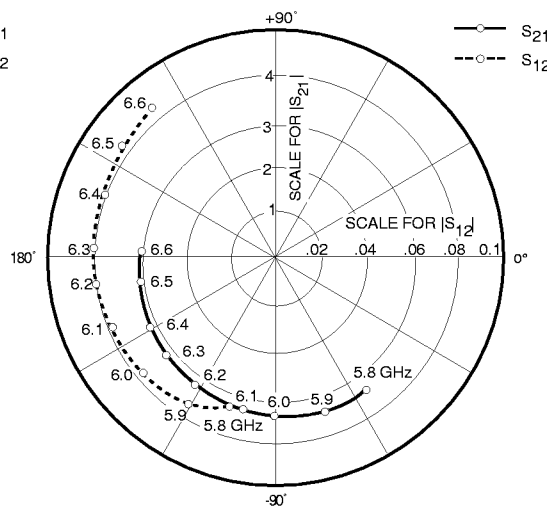
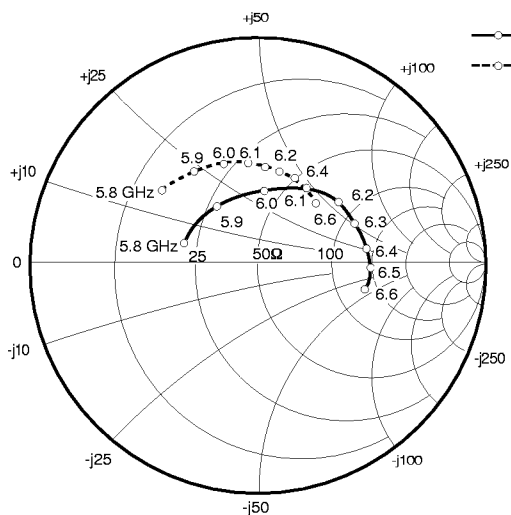
OUTPUT POWER vs. INPUT POWER



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S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 3100mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5800	.240	165.5	3.552	-55.2	.069	-103.1	.420	140.6
5900	.213	123.9	3.566	-73.3	.074	-122.0	.402	124.7
6000	.238	85.3	3.514	-90.5	.076	-138.8	.377	110.2
6100	.287	58.4	3.437	-107.5	.078	-155.5	.360	98.1
6200	.334	38.7	3.333	-123.4	.080	-171.0	.338	87.0
6300	.366	23.2	3.254	-139.2	.080	174.0	.324	77.2
6400	.385	9.9	3.185	-153.9	.081	160.6	.315	67.4
6500	.387	-2.8	3.129	-169.1	.084	146.4	.298	58.0
6600	.373	-15.4	3.127	176.2	.086	131.8	.283	47.3

2.

