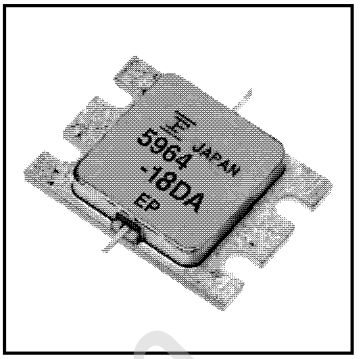
FLM5964-18DA
Internally Matched Power GaAs FETs

FUJITSU

FEATURES

- High Output Power: P_{1dB} = 42.5dBm (Typ.)
- High Gain: G_{1dB} = 8.5dB (Typ.)
- High PAE: η_{add} = 31% (Typ.)
- Low IM_3 = -45dBc@Po = 31.5dBm
- Broad Band: 5.9 ~ 6.4GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package



DESCRIPTION

The FLM5964-18DA 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 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	83.3	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 13.0 and -11.6 mA respectively with gate resistance of 25Ω.

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	-	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} = -480μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} =10V, I_{DS} = 0.55 I_{DSS} (Typ.), f = 5.9 ~ 6.4 GHz, Z_S=Z_L=50 ohm	41.5	42.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.5	8.5	-	dB
Drain Current	I_{dsr}		-	4800	6000	mA
Power-added Efficiency	ηadd		-	31	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 6.4 GHz, Δf = 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	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	80	°C

CASE STYLE: IK

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

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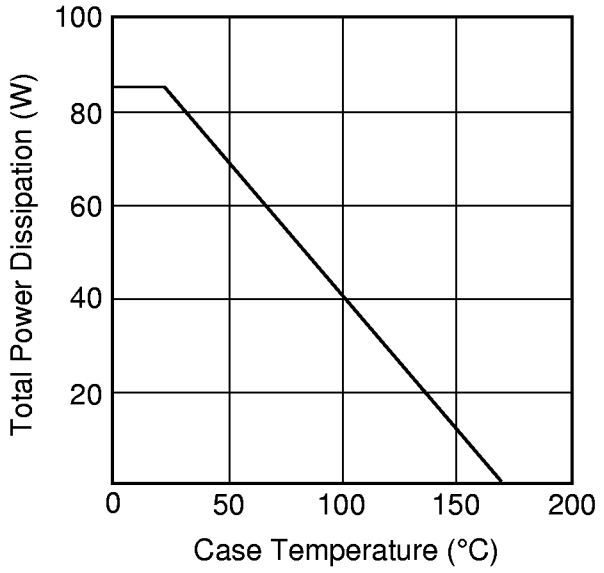
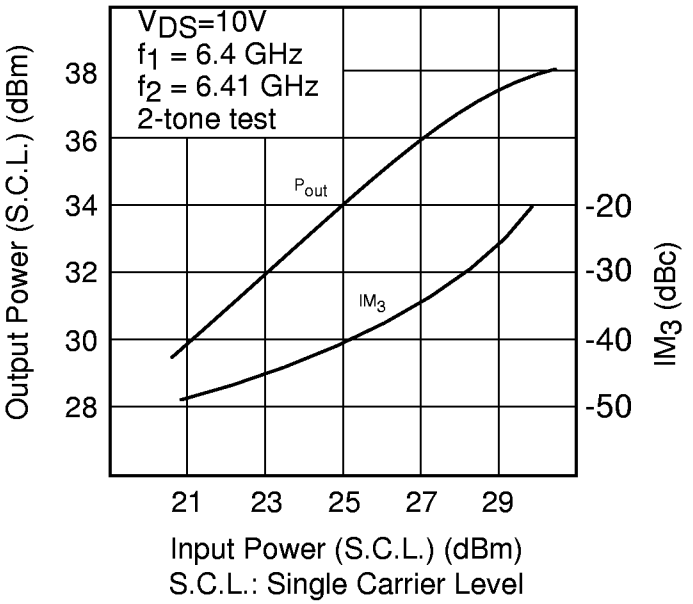
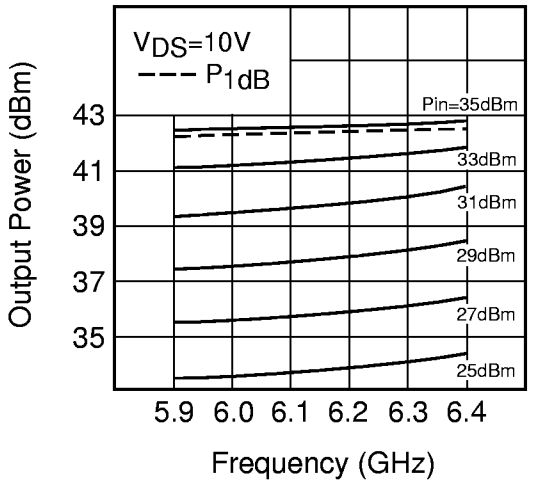
POWER DERATING CURVE



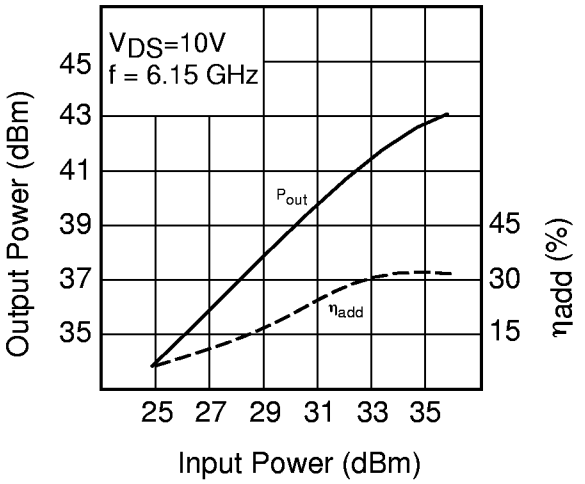
OUTPUT POWER & IM3 vs. INPUT POWER

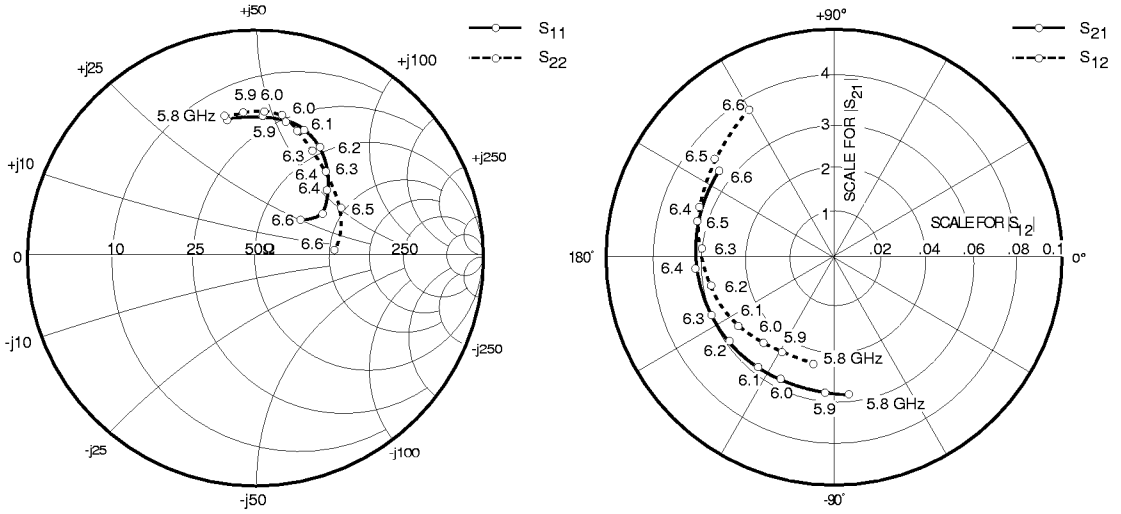


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

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

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5800	.504	98.7	2.884	-84.4	.046	-113.2	.509	102.0
5900	.509	87.4	2.859	-98.2	.048	-127.4	.518	94.6
6000	.506	77.3	2.855	-111.9	.050	-140.8	.519	87.3
6100	.492	67.6	2.899	-126.1	.053	-153.3	.512	79.8
6200	.464	58.0	2.973	-140.9	.056	-168.7	.492	70.9
6300	.417	48.6	3.003	-156.8	.061	176.3	.456	60.3
6400	.348	39.5	3.206	-174.4	.065	159.5	.409	47.2
6500	.252	33.3	3.314	166.4	.070	140.9	.336	30.3
6600	.147	41.7	3.365	145.1	.074	120.7	.240	6.1

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Case Style "IK"
Metal-Ceramic Hermetic Package