

FLM5964-6F

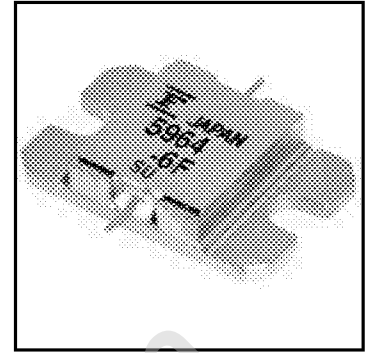
C-Band Internally Matched FET

FEATURES

- High Output Power: $P_{1dB} = 38.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 10.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 37\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}@P_o = 27.5\text{dBm}$
- Broad Band: 5.9 ~ 6.4GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM5964-6F 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	$T_C = 25^\circ\text{C}$	31.2	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 16.0 and -2.8 mA respectively with gate resistance of 100 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}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	2500	3750	mA	
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 1625\text{mA}$	-	2500	-	mS	
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 125\text{mA}$	-0.5	-1.5	-3.0	V	
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -125\mu\text{A}$	-5.0	-	-	V	
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.65I_{DSS}$ (Typ.), $f = 5.9 \sim 6.4 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	37.5	38.5	-	dBm	
Power Gain at 1dB G.C.P.	G_{1dB}		9.0	10.0	-	dB	
Drain Current	I_{dsr}		-	1625	1900	mA	
Power-added Efficiency	η_{add}		-	37	-	%	
Gain Flatness	ΔG		-	-	± 0.6	dB	
3rd Order Intermodulation Distortion	IM_3		$f = 6.4 \text{GHz}, \Delta f = 10 \text{MHz}$ 2-Tone Test $P_{out} = 27.5\text{dBm S.C.L.}$	-44	-46	-	dBc
Thermal Resistance	R_{th}		Channel to Case	-	4.0	4.8	$^\circ\text{C/W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$	

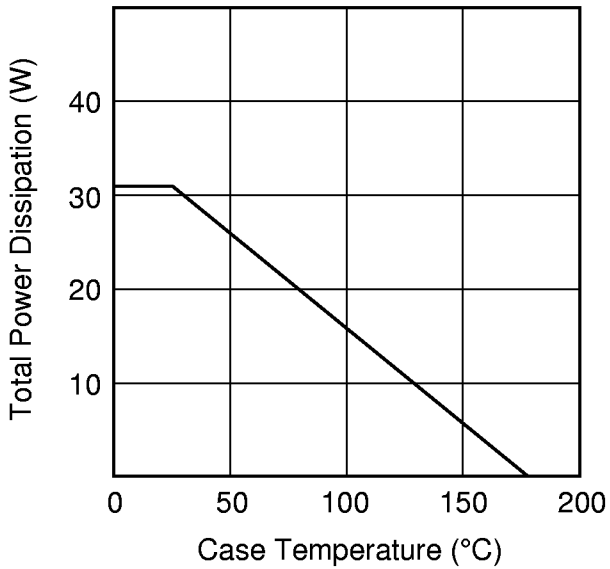
CASE STYLE: IB

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

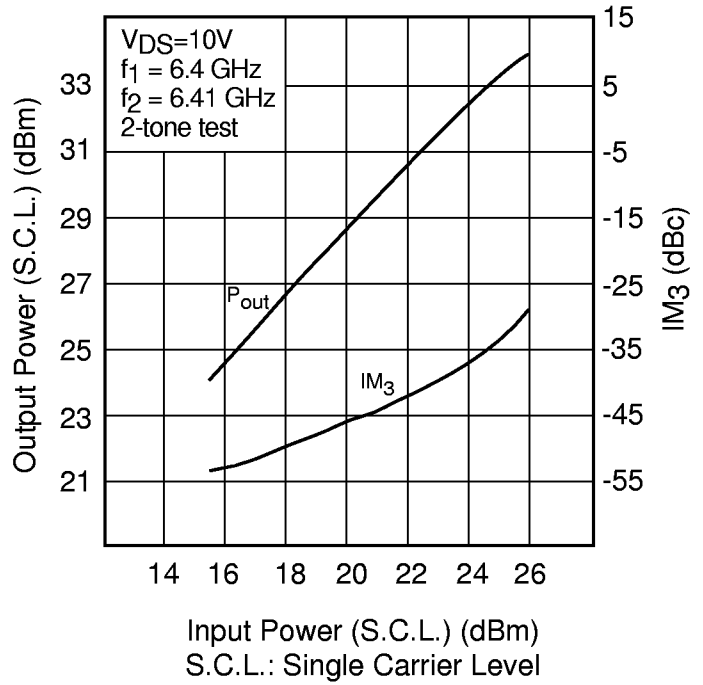
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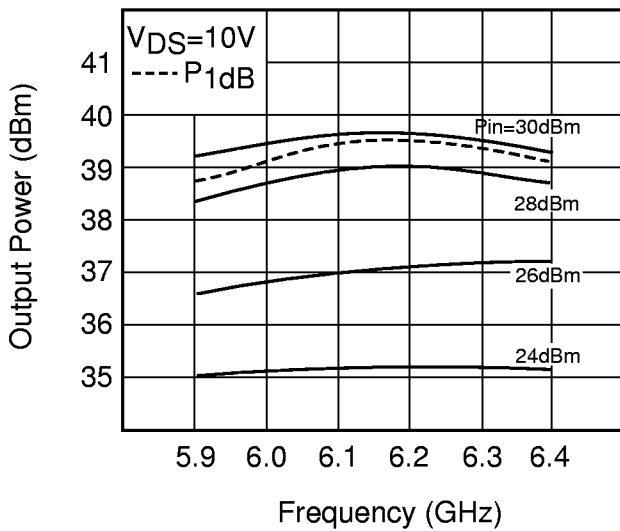
POWER DERATING CURVE



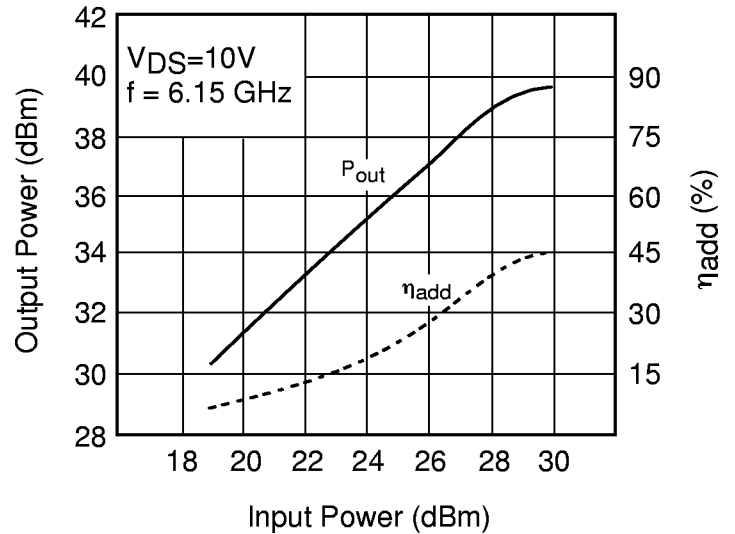
OUTPUT POWER & IM₃ vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY

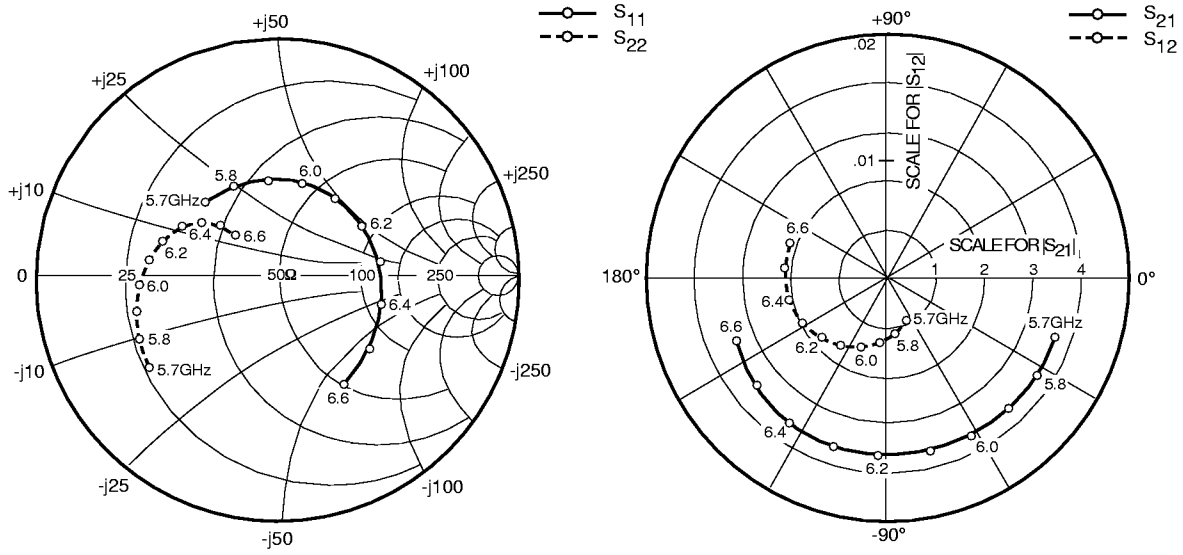


OUTPUT POWER vs. INPUT POWER



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S-PARAMETERS

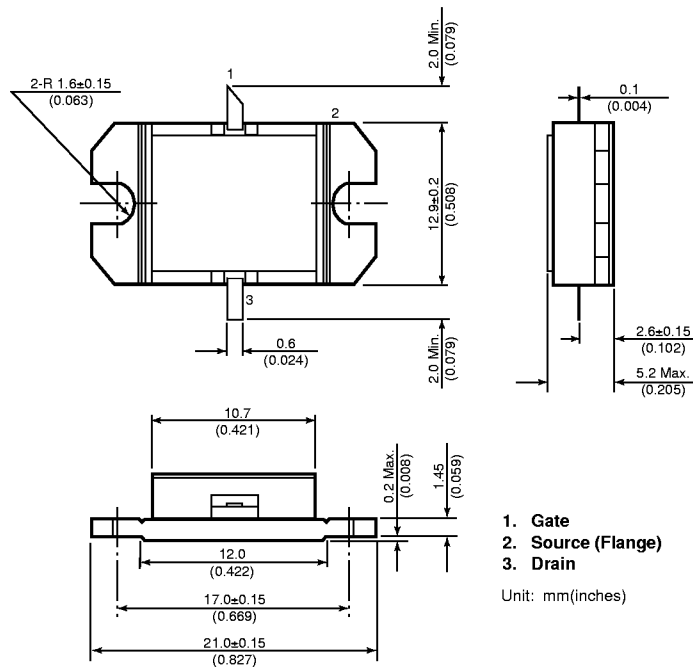
$V_{DS} = 10V, I_{DS} = 1625mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5700	.432	134.8	3.652	-19.7	.037	-65.3	.660	-145.4
5800	.417	116.5	3.676	-33.5	.045	-83.1	.641	-156.0
5900	.403	97.1	3.681	-47.6	.053	-98.2	.617	-166.4
6000	.395	75.9	3.705	-62.1	.061	-112.7	.589	-176.7
6100	.391	53.8	3.708	-77.0	.068	-126.4	.555	173.0
6200	.398	30.4	3.696	-92.2	.074	-140.2	.512	163.0
6300	.416	7.1	3.661	-107.9	.079	-154.4	.458	153.7
6400	.446	-16.1	3.609	-123.9	.083	-169.3	.396	145.0
6500	.484	-38.9	3.525	-140.6	.085	175.5	.325	138.7
6600	.529	-60.1	3.399	-157.1	.086	160.2	.253	137.3

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Case Style "IB" Metal-Ceramic Hermetic Package



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- Do not put these products into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

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