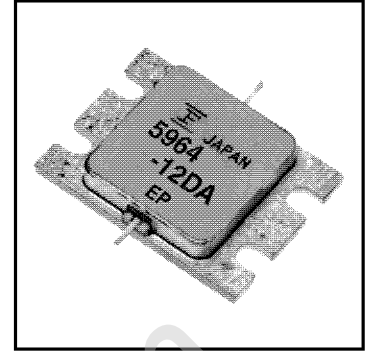


### FEATURES

- High Output Power:  $P_{1dB} = 41\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 9.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 35\%$  (Typ.)
- Low  $IM_3 = -45\text{dBc}@P_o = 30\text{dBm}$
- 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 $T_a=25^\circ\text{C}$ )

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_T$	$T_C = 25^\circ\text{C}$	57.6	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 12.0 and -5.6 mA respectively with gate resistance of 50 $\Omega$ .

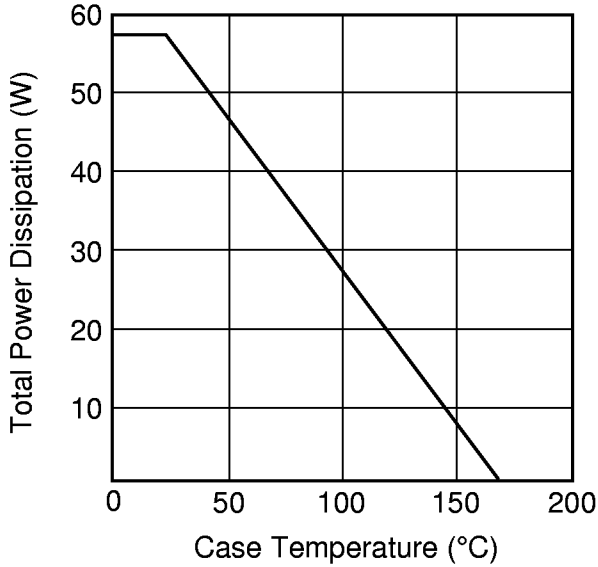
### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$ )

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

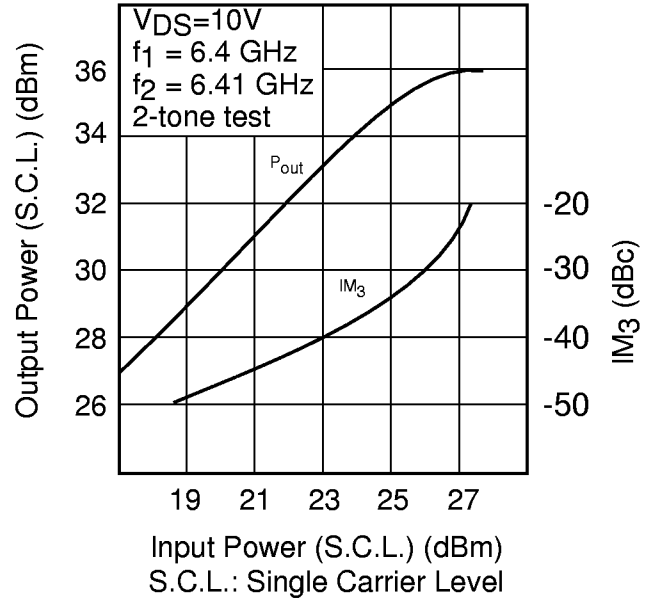
CASE STYLE: IK

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

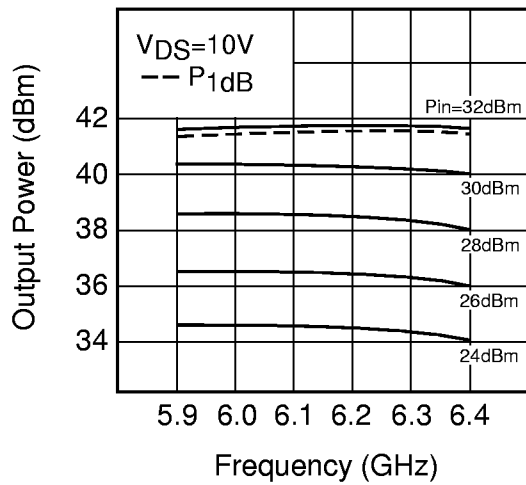
**POWER DERATING CURVE**



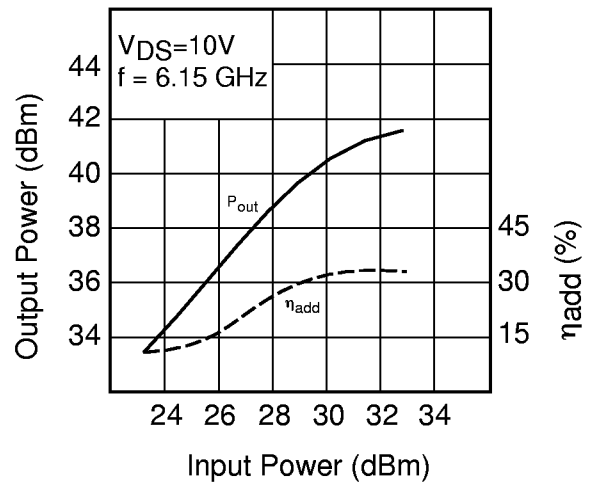
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**



**OUTPUT POWER vs. FREQUENCY**

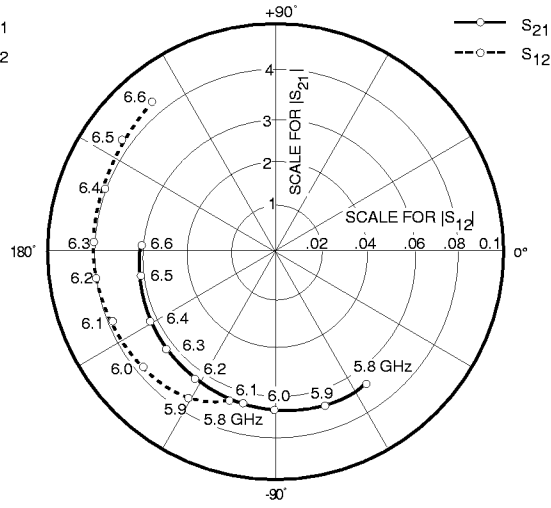
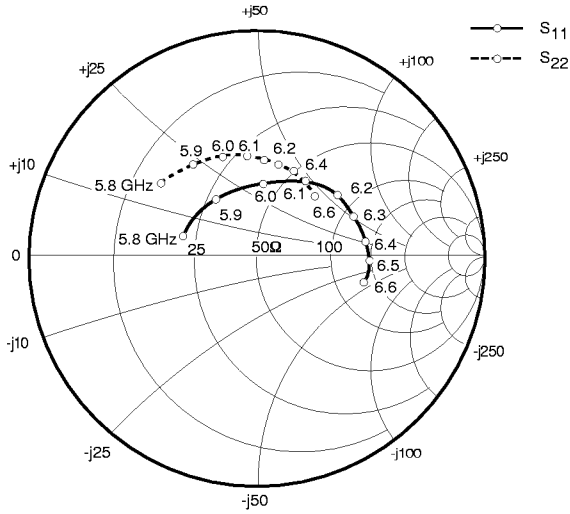


**OUTPUT POWER vs. INPUT POWER**



# FLM5964-12DA

## Internally Matched Power GaAs FETs

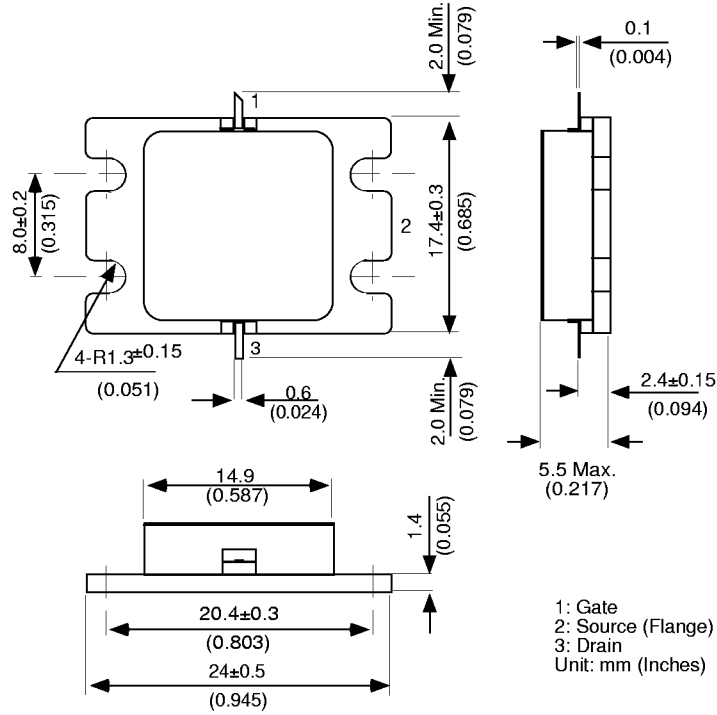


### S-PARAMETERS

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

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

**Case Style "IK"**  
Metal-Ceramic Hermetic Package



2