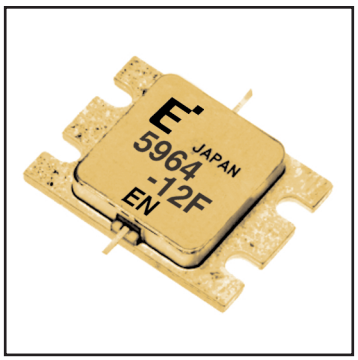
FLM5964-12F

C-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 41.5dBm (Typ.)
- High Gain: G_{1dB} = 10.0dB (Typ.)
- High PAE: η_{add} = 37% (Typ.)
- Low IM_3 = -46dBc@Po = 30.5dBm
- Broad Band: 5.9 ~ 6.4GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package



DESCRIPTION

The FLM5964-12F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

Eudyna'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	57.6	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 32.0 and -5.6 mA respectively with gate resistance of 50Ω.

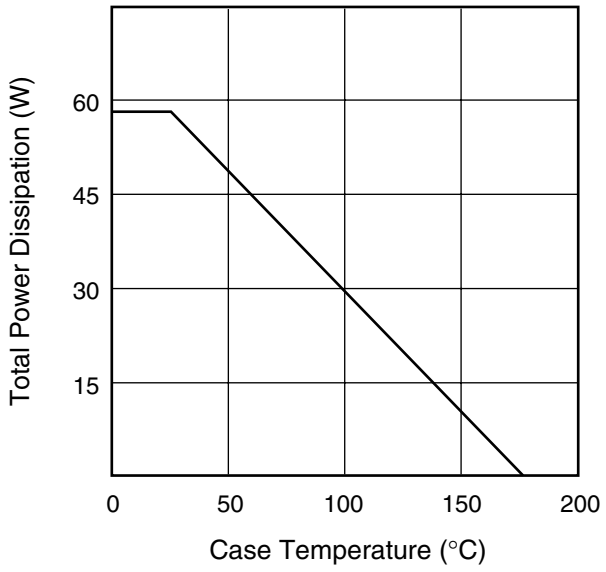
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	5000	7500	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 3250mA	-	5000	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 250mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -250μA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} =10V, I_{DS} = 0.65I_{DSS} (Typ.), f = 5.9 ~ 6.4 GHz, Z_S=Z_L= 50 ohm	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		9.0	10.0	-	dB
Drain Current	I_{dsr}		-	3250	3800	mA
Power-added Efficiency	η_{add}		-	37	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 6.4 GHz, Δf = 10 MHz 2-Tone Test P_{out} = 30.5dBm S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	2.3	2.6	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	80	°C

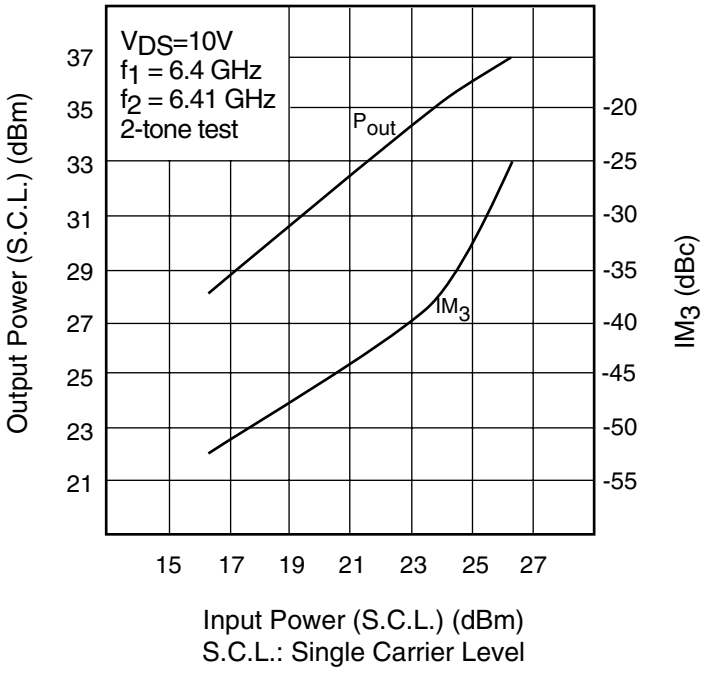
CASE STYLE: IK

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

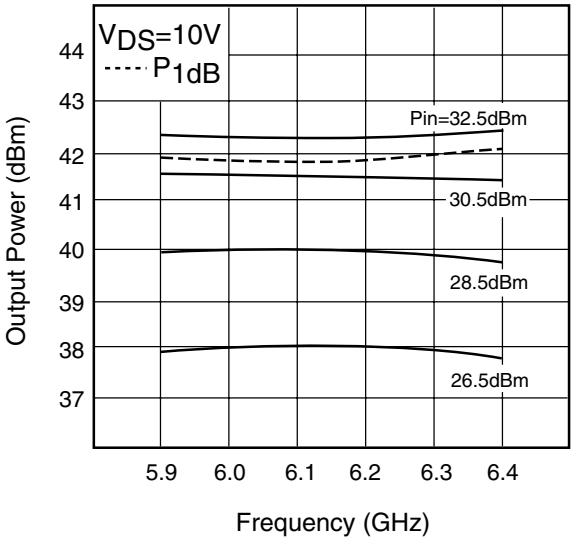
POWER DERATING CURVE



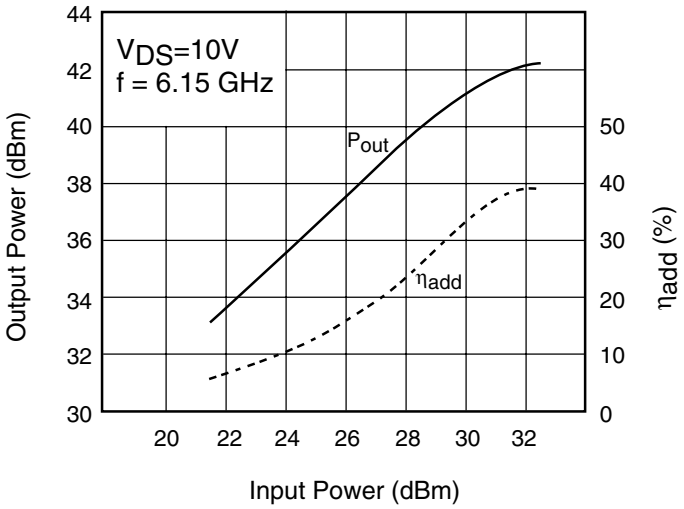
OUTPUT POWER & IM3 vs. INPUT POWER

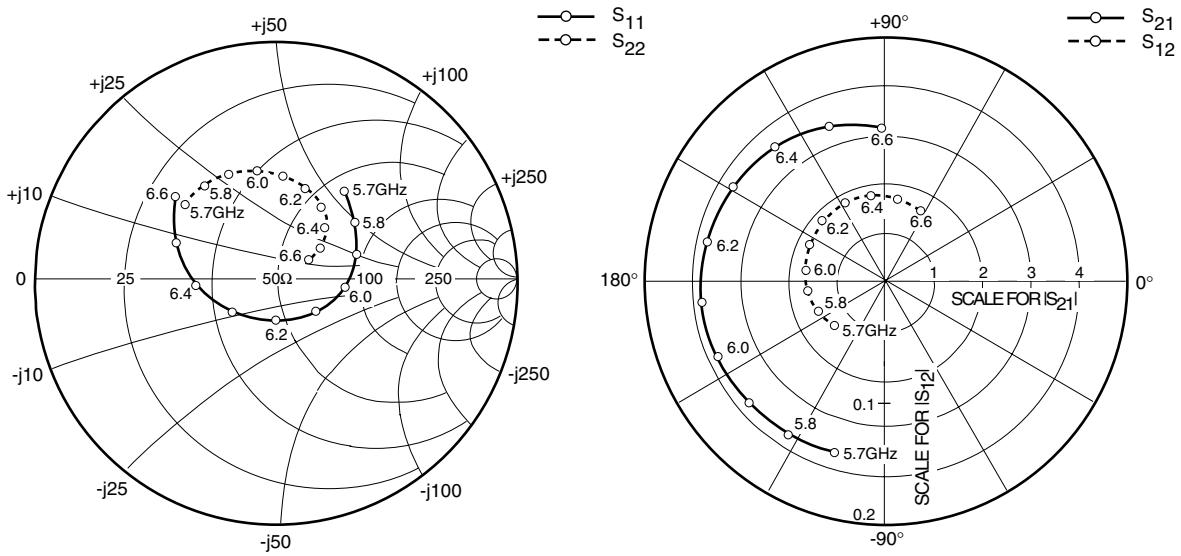


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





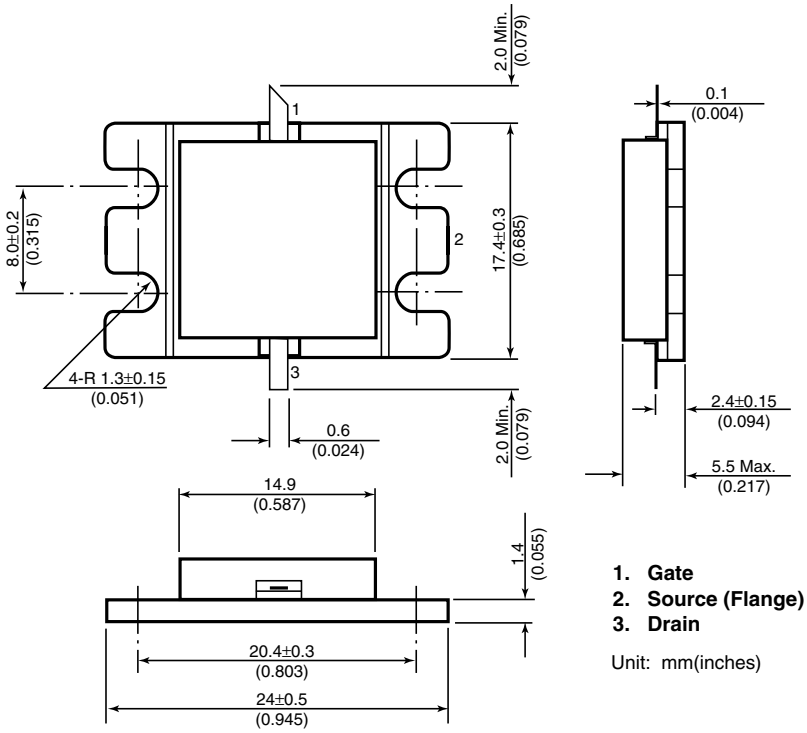
S-PARAMETERS

V_{DS} = 10V, I_{DS} = 3250mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5700	.455	51.2	3.642	-107.3	.056	-140.5	0.496	140.4
5800	.411	34.8	3.713	-123.0	.060	-155.3	0.493	127.1
5900	.354	16.2	3.773	-139.4	.064	-171.6	0.482	113.5
6000	.283	-7.1	3.824	-156.4	.067	171.7	0.465	99.6
6100	.211	-41.1	3.844	-174.2	.070	153.6	0.434	85.9
6200	.181	-92.2	3.822	167.6	.073	136.1	0.401	72.5
6300	.234	-141.8	3.754	148.8	.072	118.7	0.353	59.0
6400	.335	-175.7	3.621	129.6	.072	99.6	0.294	45.6
6500	.442	160.5	3.415	110.5	.069	82.6	0.224	35.2
6600	.536	140.5	3.173	91.5	.065	64.5	0.153	30.8

Case Style "IK"

Metal-Ceramic Hermetic Package



1. **Gate**
2. **Source (Flange)**
3. **Drain**

Unit: mm(inches)

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CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- **Do not put this product 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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