

FEATURES

- High Output Power: $P_{1dB} = 43.0\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 10.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 37\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 32.0\text{dBm}$
- Broad Band: 5.9 ~ 6.4GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM5964-18F 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 $T_a=25^\circ\text{C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ\text{C}$	83.3	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ\text{C}$
Channel Temperature	T_{ch}		175	$^\circ\text{C}$

Eudyna recommends the following conditions for the reliable operation of GaAs FETs:

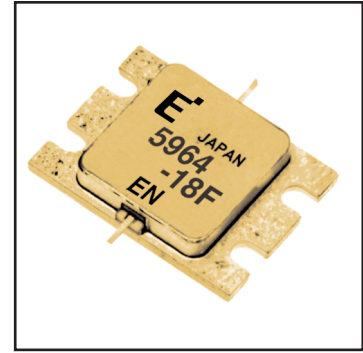
1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 48.0 and -8.4 mA respectively with gate resistance of 25Ω .

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

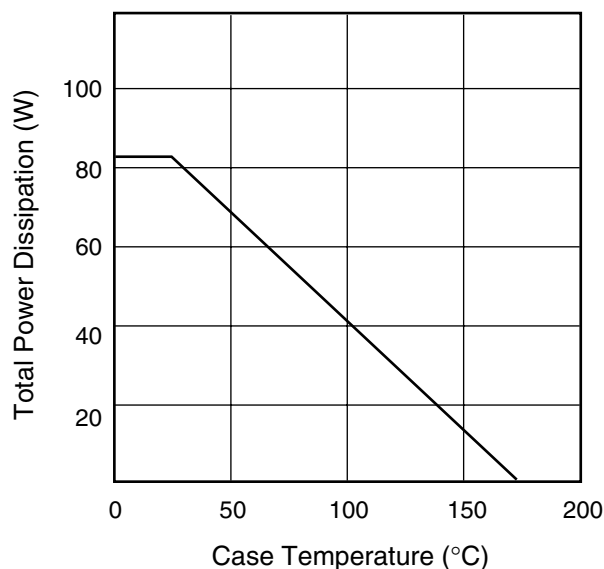
Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	7.5	11.25	A
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 4875\text{mA}$	-	7500	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 250\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -250\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.65I_{DSS}$ (Typ.), $f = 5.9 \sim 6.4\text{GHz},$ $Z_S = Z_L = 50\text{ohm}$	42.0	43.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		9.0	10.0	-	dB
Drain Current	I_{dsr}		-	4875	6000	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 $P_{out} = 32.0\text{dBm S.C.L.}$	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.6	1.8	$^\circ\text{C/W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

CASE STYLE: IK

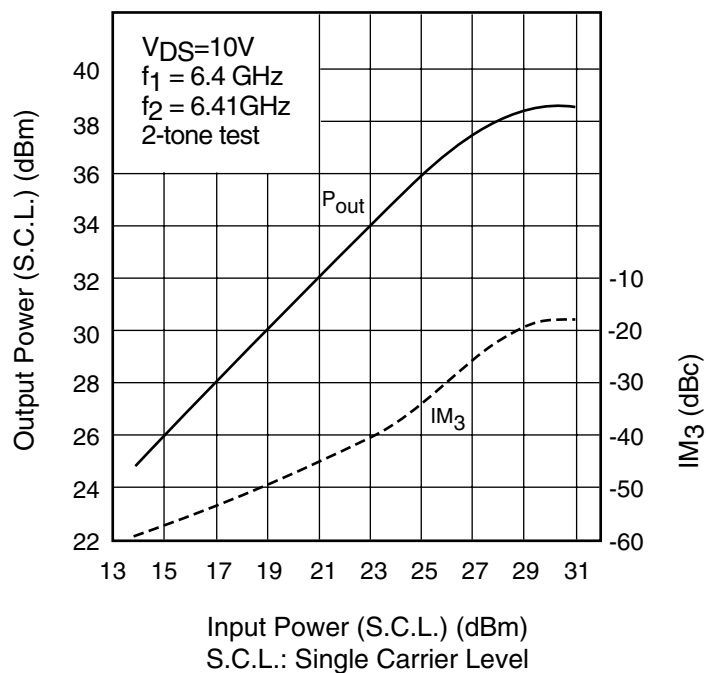
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level



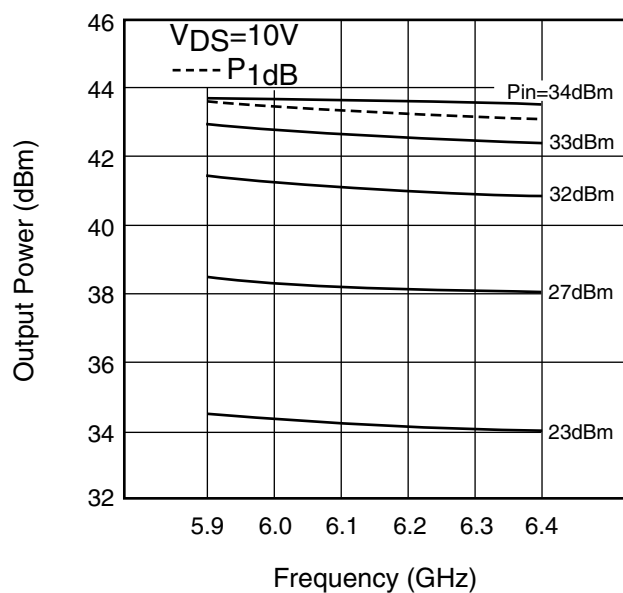
POWER DERATING CURVE



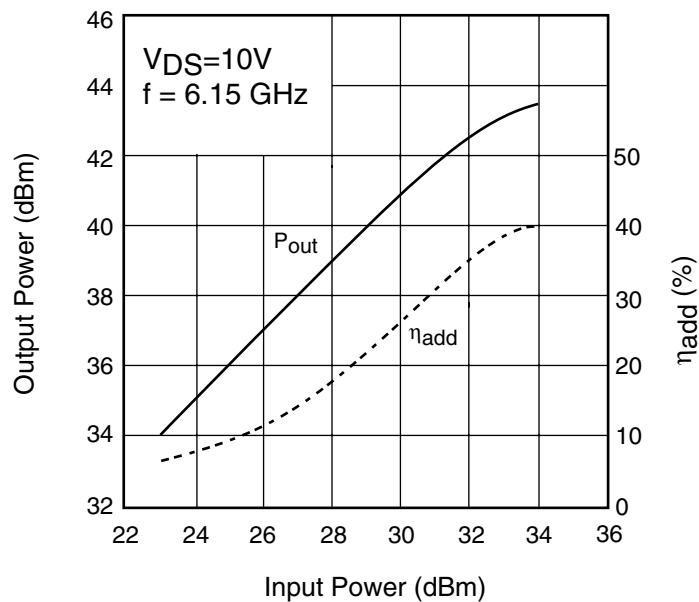
OUTPUT POWER & IM₃ vs. INPUT POWER

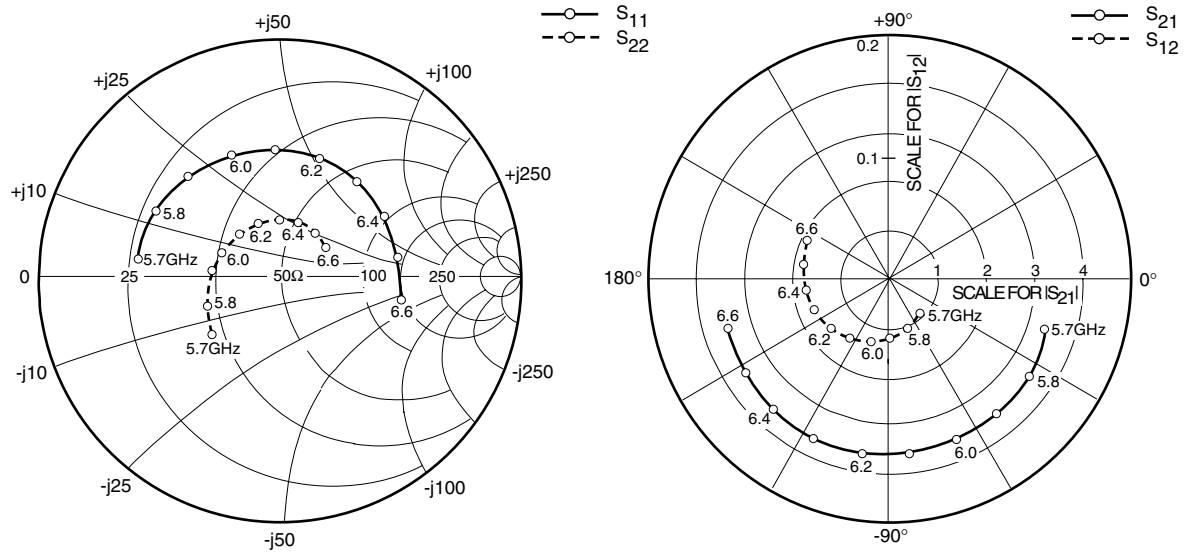


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

$V_{DS} = 10V$, $I_{DS} = 4875mA$

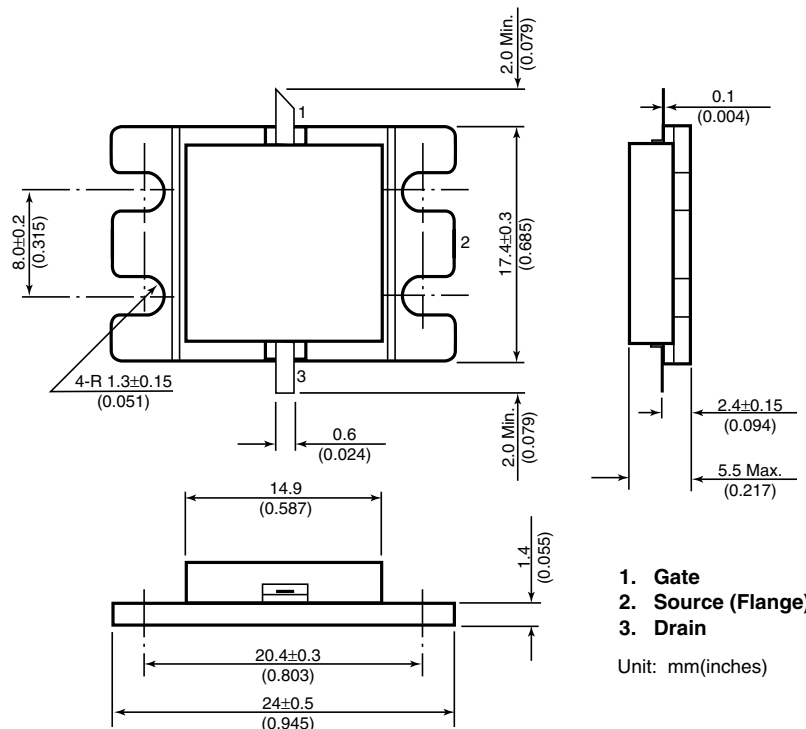
FREQUENCY (MHZ)	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5700	.597	172.1	3.400	-18.1	.038	-49.2	.438	-147.7
5800	.583	151.8	3.480	-34.7	.043	-70.2	.407	-164.5
5900	.569	132.1	3.537	-51.2	.049	-89.7	.379	178.5
6000	.552	112.4	3.579	-67.4	.054	-106.8	.351	161.7
6100	.535	93.1	3.612	-83.5	.059	-124.1	.322	144.9
6200	.516	72.6	3.625	-99.5	.064	-141.0	.292	128.2
6300	.502	51.8	3.626	-115.6	.068	-157.9	.261	110.9
6400	.494	30.4	3.596	-131.6	.071	-173.2	.229	93.7
6500	.494	9.4	3.546	-147.5	.074	170.9	.196	75.1
6600	.503	-10.7	3.481	-163.1	.076	155.4	.164	54.6

FLM5964-18F

C-Band Internally Matched FET

Case Style "IK"

Metal-Ceramic Hermetic Package



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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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