

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 IM3 = $-46\text{dBc}@P_o = 32.0\text{dBm}$
- Broad Band: 5.9 to 6.4GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- 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.

SEDI's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Case Temperature $T_c=25\text{deg.C}$)

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

SEDI 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 25ohm.

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25\text{deg.C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	7.5	11.25	A
Transconductance	g_m	$V_{DS}=5V, I_{DS}=4875\text{mA}$	-	7500	-	mS
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=250\text{mA}$	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-250\text{uA}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS}=10V,$ $I_{DS}=0.65 I_{DSS}$ (Typ.), $f=5.9$ to 6.4 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		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM_3	$f = 6.4$ GHz, $\Delta f = 10$ 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	deg.C/W
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	80	deg.C

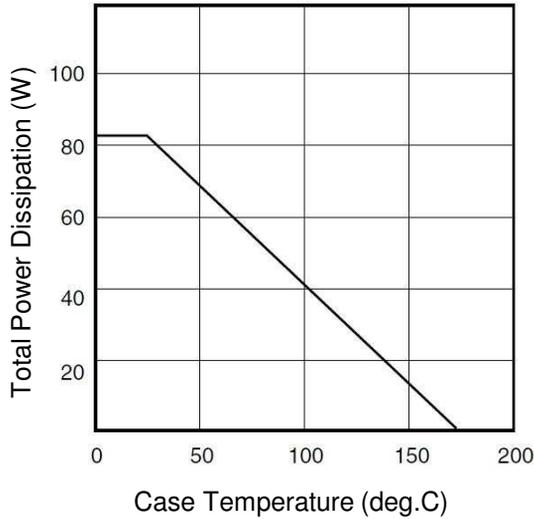
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

CASE STYLE	IK
ESD	Class 3A 4000V to 8000V

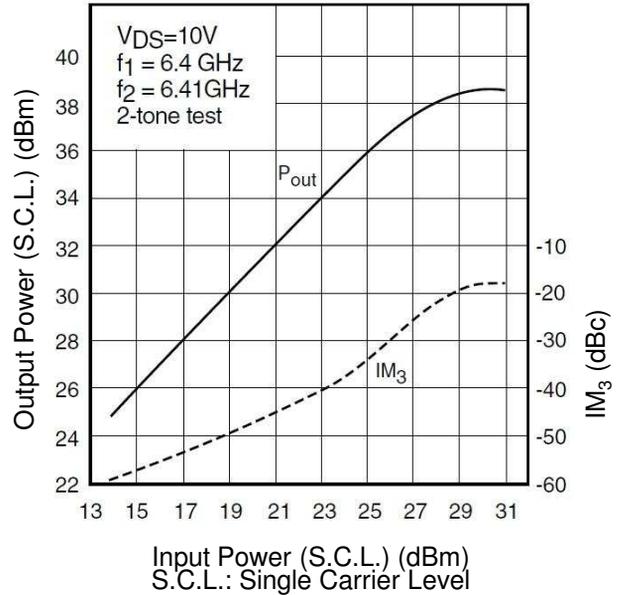
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

RoHS Compliance	Yes
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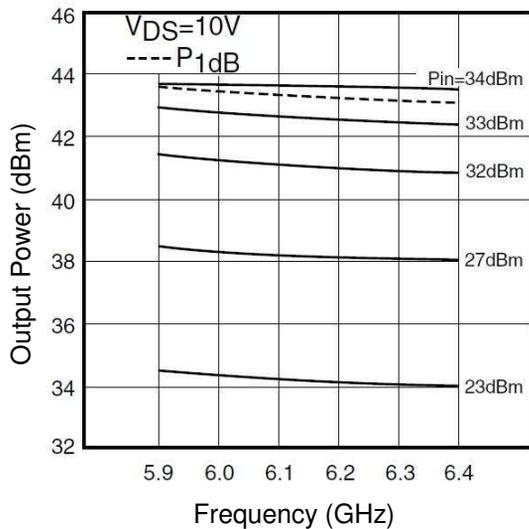
POWER DERATING CURVE



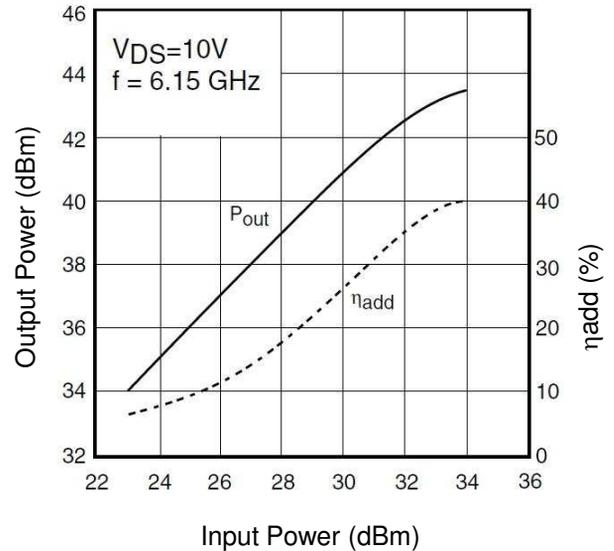
OUTPUT POWER & IM₃ vs. INPUT POWER

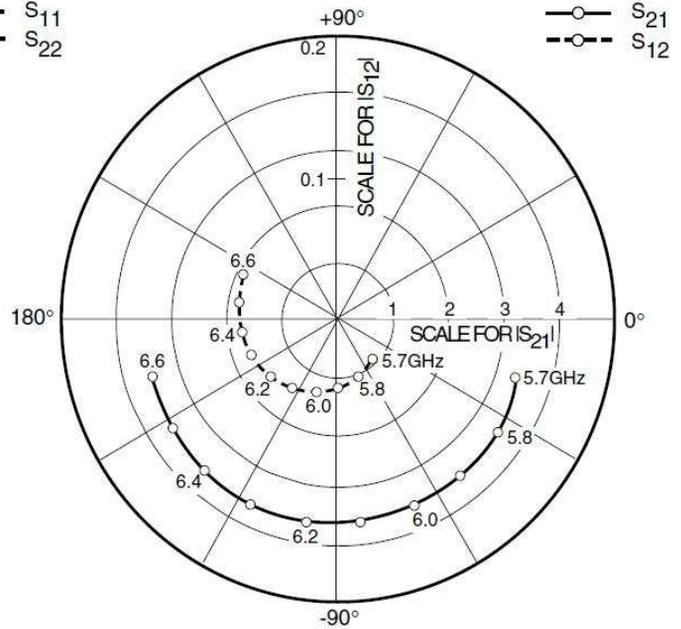
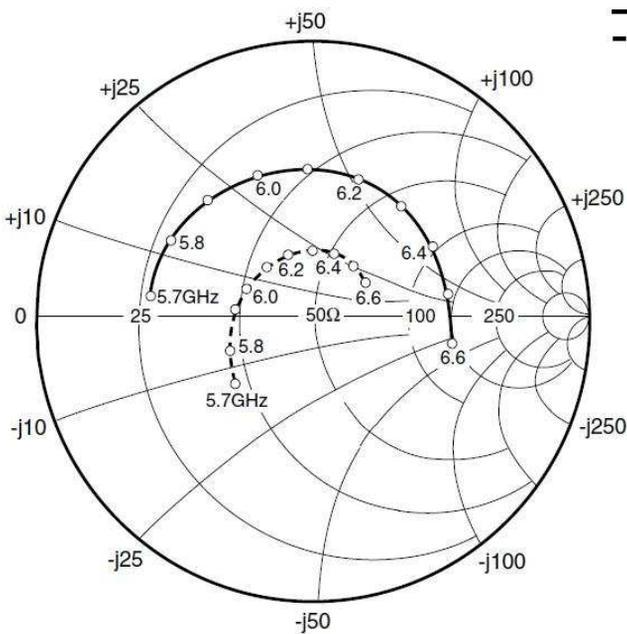


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



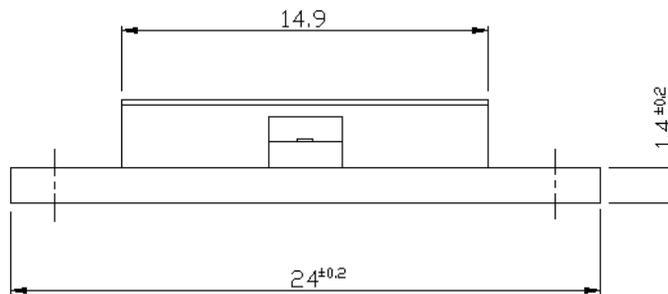
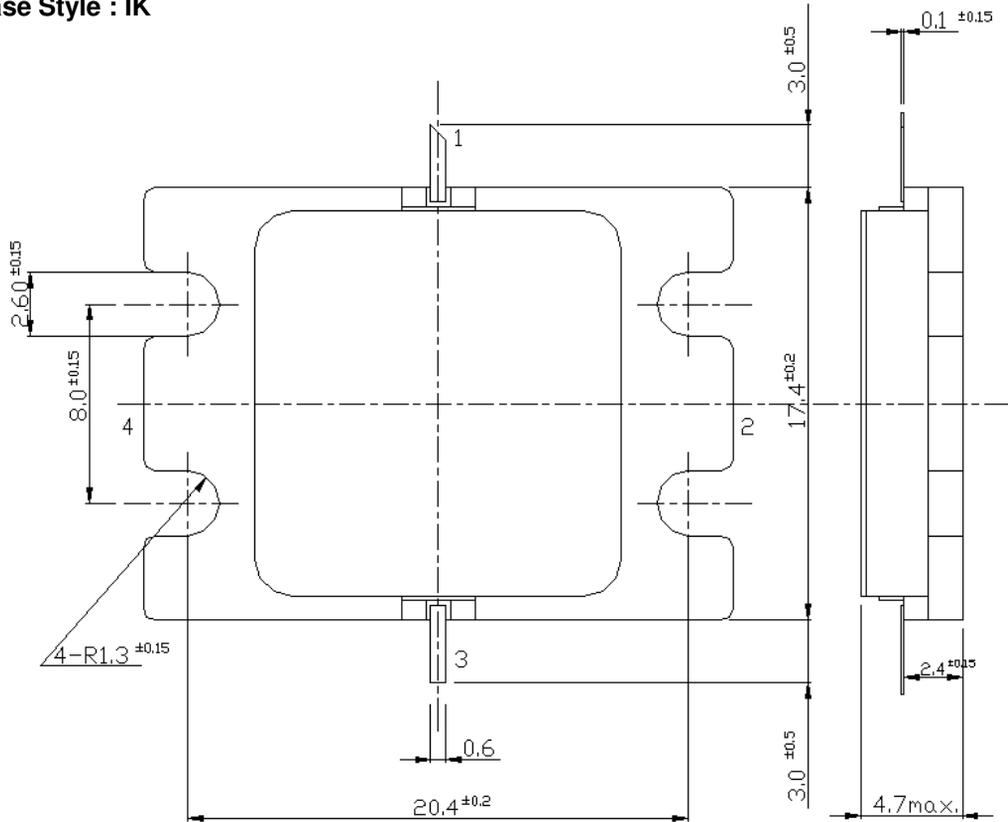


S-PARAMETERS

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

FREQUENCY (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5700	0.597	172.1	3.400	-18.1	0.038	-49.2	0.438	-147.7
5800	0.583	151.8	3.480	-34.7	0.043	-70.2	0.407	-164.5
5900	0.569	132.1	3.537	-51.2	0.049	-89.7	0.379	178.5
6000	0.552	112.4	3.579	-67.4	0.054	-106.8	0.351	161.7
6100	0.535	93.1	3.612	-83.5	0.059	-124.1	0.322	144.9
6200	0.516	72.6	3.625	-99.5	0.064	-141.0	0.292	128.2
6300	0.502	51.8	3.626	-115.6	0.068	-157.9	0.261	110.9
6400	0.494	30.4	3.596	-131.6	0.071	-173.2	0.229	93.7
6500	0.494	9.4	3.546	-147.5	0.074	170.9	0.196	75.1
6600	0.503	-10.7	3.481	-163.1	0.076	155.4	0.164	54.6

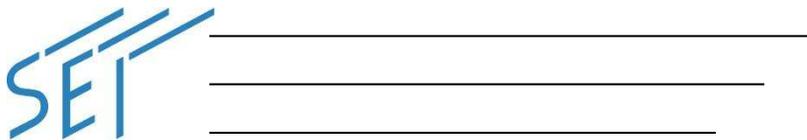
■ Package Outline
Case Style : IK



Pin Assignment

- 1 : Gate
- 2 : Source
- 3 : Drain
- 4 : Source

Unit : mm



FLM5964-18F

C-Band Internally Matched FET

For further information please contact:

<http://global-sei.com/Electro-optic/about/office.html>

CAUTION

This product contains **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- 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.