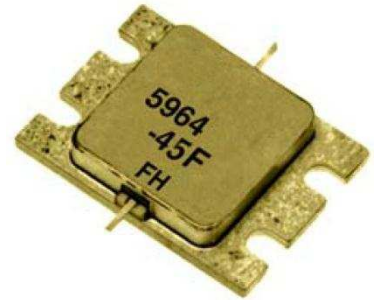


### FEATURES

- High Output Power:  $P_{1dB}=47.0\text{dBm(Typ.)}$
- High Gain:  $G_{1dB}=8.5\text{dB(Typ.)}$
- High PAE:  $\eta_{add}=39\%\text{(Typ.)}$
- Broad Band: 5.9 to 6.4GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package



### DESCRIPTION

The FLM5964-45F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50ohm system.

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

Item	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	15	V
Gate-Source Voltage	$V_{GS}$	-5	V
Total Power Dissipation	$P_T$	115	W
Storage Temperature	$T_{stg}$	-65 to +175	deg.C
Channel Temperature	$T_{ch}$	175	deg.C

### RECOMMENDED OPERATING CONDITION (Case Temperature $T_c=25\text{deg.C}$ )

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	$V_{DS}$		$\leq 10$	V
Forward Gate Current	$I_{GF}$	$R_G=10\text{ohm}$	$\leq 108$	mA
Reverse Gate Current	$I_{GR}$	$R_G=10\text{ohm}$	$\geq -23.2$	mA

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

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0V$	-	24	-	A
Transconductance	$g_m$	$V_{DS}=5V, I_{DS}=8.0A$	-	16	-	S
Pinch-off Voltage	$V_p$	$V_{DS}=5V, I_{DS}=960\text{mA}$	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-960\mu A$	-5.0	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS}=10V$	46.0	47.0	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$	$f= 5.9 \text{ to } 6.4 \text{ GHz}$	7.5	8.5	-	dB
Drain Current	$I_{dsr}$	$I_{DS}(\text{DC})=8.0A \text{ (typ.)}$	-	11	13	A
Power-Added Efficiency	$\eta_{add}$	$Z_s=Z_L=50 \text{ ohm}$	-	39	-	%
Gain Flatness	$\Delta G$	$f=6.4 \text{ GHz}$	-	-	1.2	dB
3rd Order Intermodulation Distortion	$IM_3$	$\Delta f=10\text{MHz, 2-tone Test}$ $P_{out}=35.5\text{dBm(S.C.L.)}$	-37	-40	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	1.1	1.3	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{DS}(\text{DC}) \times R_{th}$	-	-	100	deg.C

G.C.P.: Gain Compression Point

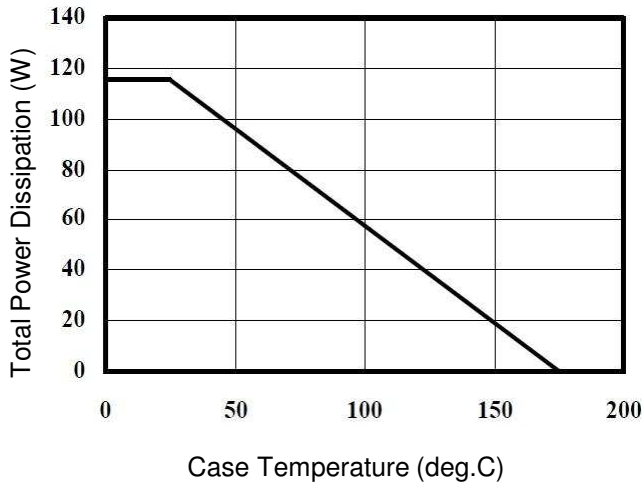
CASE STYLE	IK
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ESD	Class 3A	4000V to 8000V
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Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

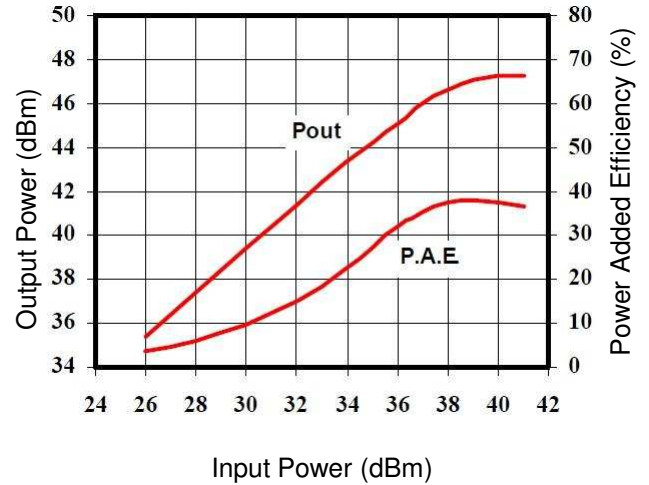
RoHS Compliance	Yes
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### Power Derating Curve



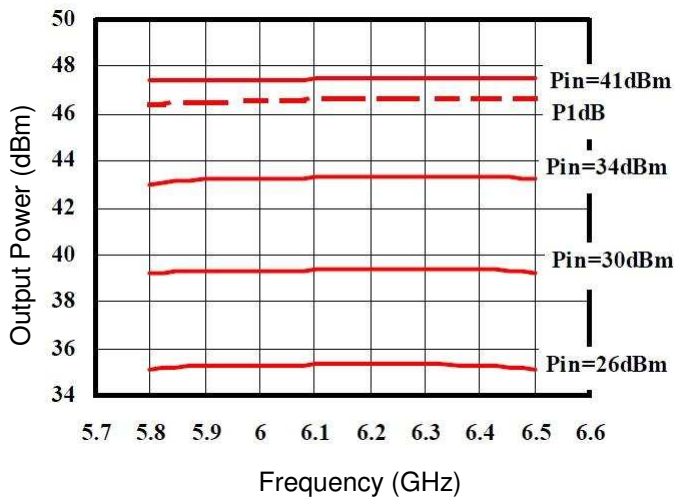
### Output Power & P.A.E. vs. Input Power

VDS=10V, IDS(DC), f=6.15GHz



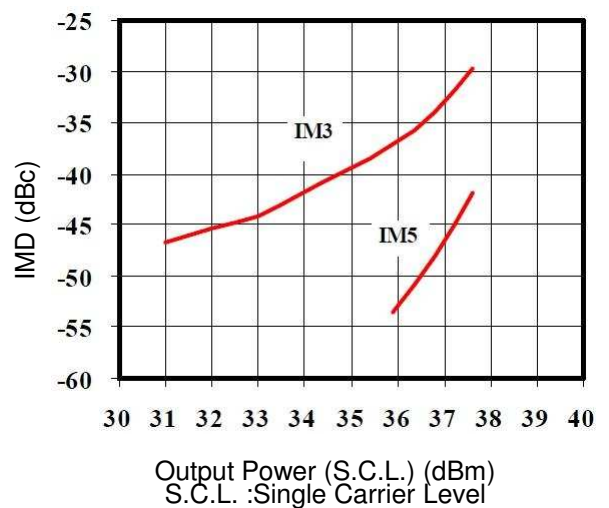
### Output Power vs. Frequency

VDS=10V, IDS(DC)=8A



### IMD vs. Output Power

VDS=10V, IDS(DC)=8A  
f1=6.40GHz, f2=6.41GHz



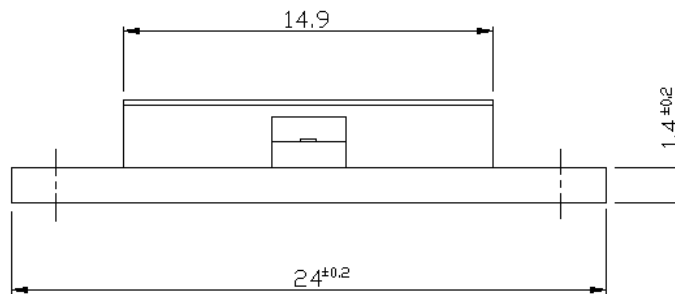
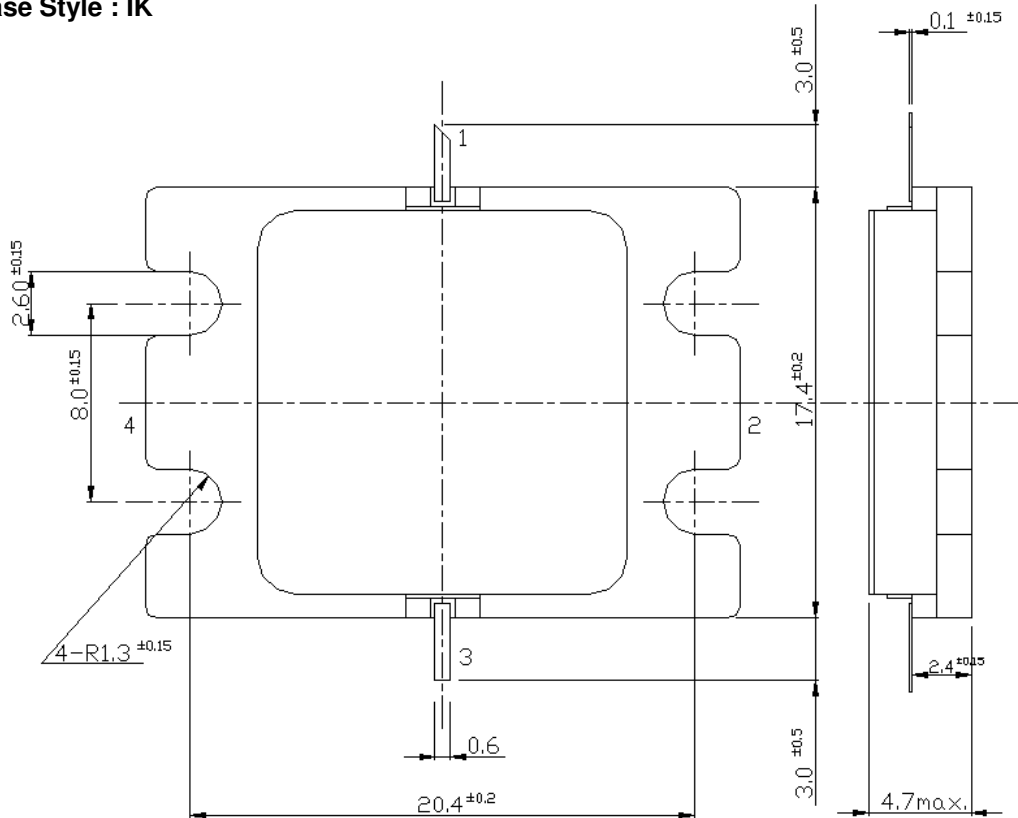
### ■ S-PARAMETER



### VDS=10V, IDS(DC)=8.0A

Freq. [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.50	0.69	100.73	2.71	-65.86	0.04	-98.76	0.24	-178.84
5.60	0.68	83.94	2.79	-82.12	0.05	-119.62	0.20	156.65
5.70	0.66	66.62	2.87	-98.96	0.05	-138.82	0.18	127.57
5.80	0.64	49.49	2.93	-116.10	0.05	-156.63	0.17	98.72
5.90	0.62	31.08	3.00	-133.45	0.06	-172.99	0.19	74.14
6.00	0.59	12.46	3.05	-150.81	0.06	168.51	0.20	53.42
6.10	0.56	-7.81	3.09	-168.95	0.07	151.81	0.21	36.86
6.20	0.52	-29.71	3.12	173.00	0.07	134.62	0.21	22.64
6.30	0.48	-55.12	3.13	153.96	0.07	116.09	0.19	9.90
6.40	0.46	-84.53	3.12	134.25	0.07	96.67	0.15	-2.96
6.50	0.47	-115.98	3.03	114.07	0.07	76.89	0.09	-11.43
6.60	0.51	-147.35	2.88	93.41	0.07	55.03	0.02	41.26
6.70	0.57	-175.07	2.67	73.16	0.07	34.26	0.10	106.30
6.80	0.64	161.88	2.43	53.61	0.06	14.80	0.20	99.38
6.90	0.71	142.58	2.16	35.09	0.05	-2.80	0.29	88.73
7.00	0.77	126.73	1.91	16.95	0.05	-19.52	0.38	77.36
7.10	0.82	114.00	1.67	1.25	0.04	-35.33	0.46	66.53
7.20	0.85	102.39	1.45	-14.52	0.04	-49.84	0.53	56.00
7.30	0.88	92.83	1.27	-29.03	0.03	-66.26	0.59	46.08
7.40	0.89	84.05	1.09	-42.51	0.03	-77.65	0.64	37.22

■ Package Outline  
Case Style : IK



Pin Assignment

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

Unit : mm



# **FLM5964-45F**

***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.