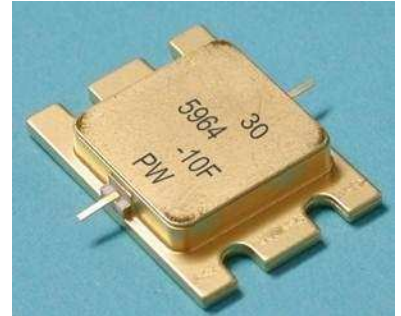


FEATURES

- High Output Power: $P_{1dB}=40.5\text{dBm(Typ.)}$
- High Gain: $G_{1dB}=10.0\text{dB(Typ.)}$
- 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 ELM5964-10F 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	42.8	W
Storage Temperature	T_{sta}	-55 to +125	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}		≤ 10	V
Forward Gate Current	I_{GF}	$R_G=50\text{ ohm}$	≤ 27.0	mA
Reverse Gate Current	I_{GR}	$R_G=50\text{ ohm}$	≥ -5.8	mA

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

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	4.0	5.6	A
Transconductance	g_m	$V_{DS}=5V, I_{DS}=2.4A$	-	4.0	-	S
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=240\text{mA}$	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS}=-240\mu A$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS}=10V$	39.5	40.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}	$f=5.9\text{ to }6.4\text{ GHz}$	9.0	10.0	-	dB
Drain Current	I_{dsr}	$I_{DSDC}=2.6A\text{ (Typ.)}$	-	2.6	3.0	A
Power-Added Efficiency	η_{add}	$Z_s=Z_L=50\text{ ohm}$	-	39	-	%
Gain Flatness	ΔG		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM_3	$f=6.4\text{ GHz}$ $\Delta f=10\text{MHz, 2-tone Test}$ $P_{out}=29\text{dBm(S.C.L.)}$	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	3.0	3.5	deg.C/W
Channel Temperature Rise	ΔT_{ch}	$10V \times I_{dsr} \times R_{th}$	-	-	100	deg.C

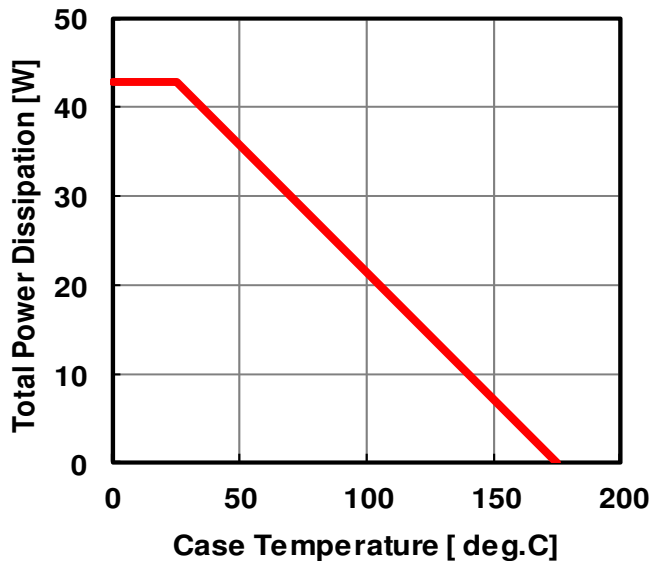
S.C.L. : Single Carrier Level G.C.P.: Gain Compression Point

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

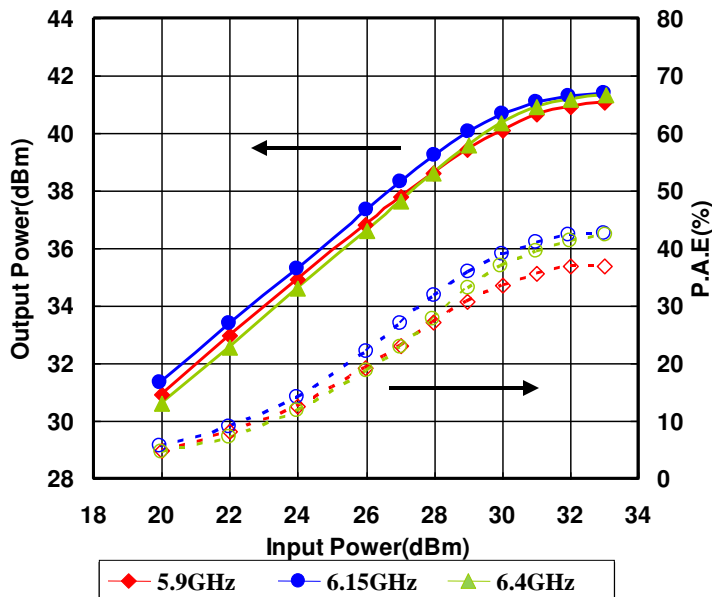
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

RoHS Compliance	Yes
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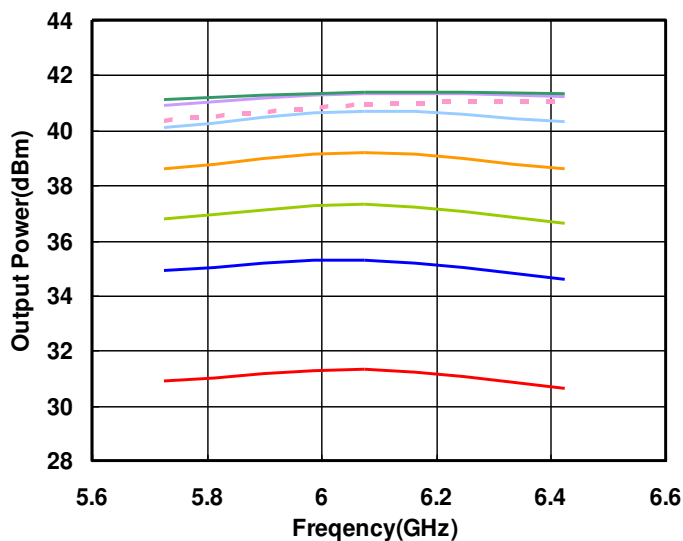
Power Derating Curve



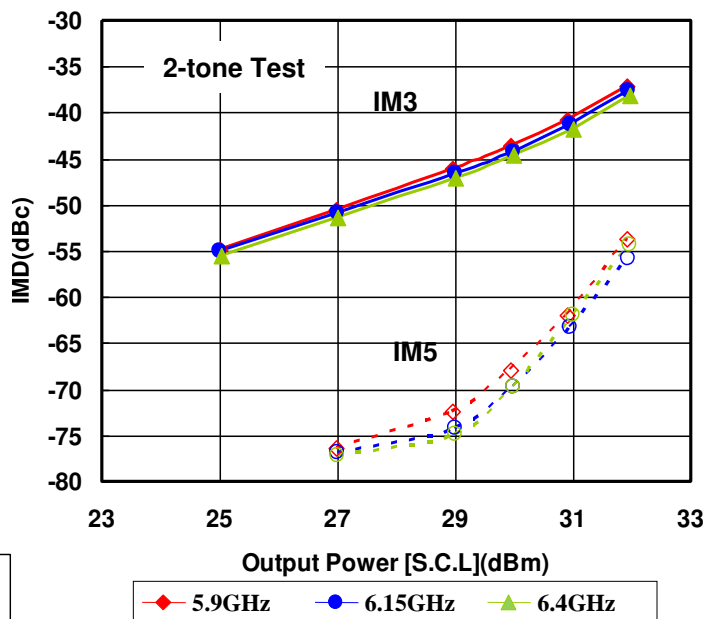
Input Power vs. Output Power & P.A.E VDS=10V, IDS(DC)=2.6A



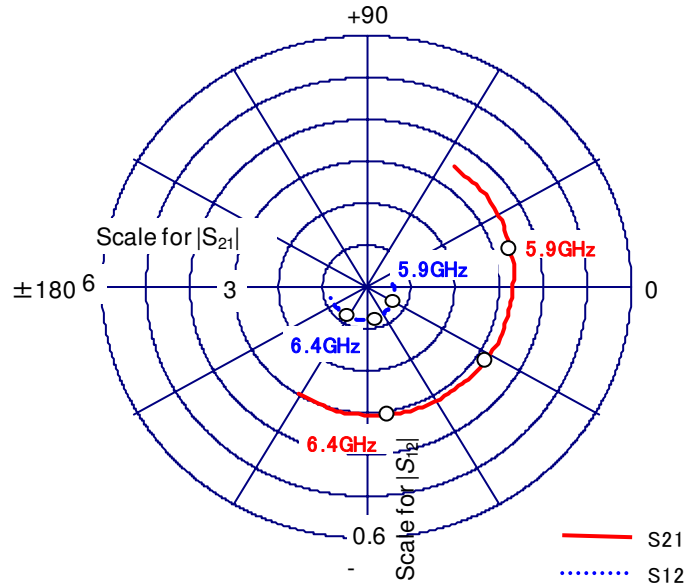
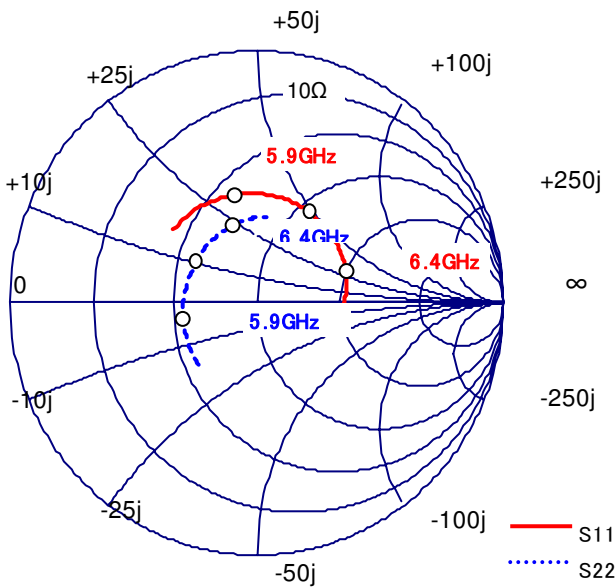
frequency vs. Output Power VDS=10V, IDS(DC)=2.6A



Output Power vs. IMD VDS=10V, IDS(DC)=2.6A, Δf=10MHz



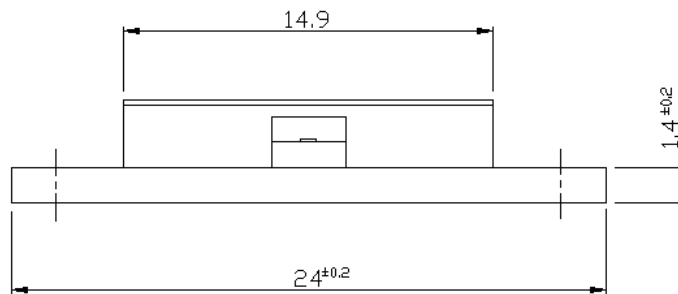
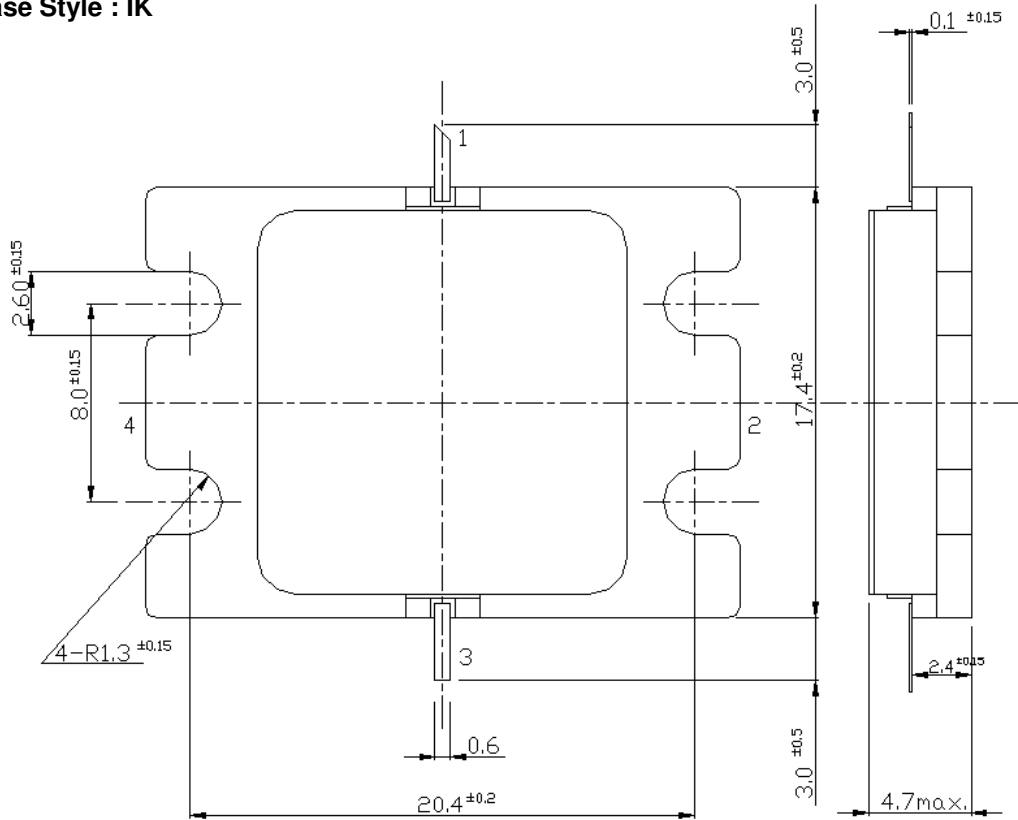
S-PARAMETER



VDS=10.0V , IDS=2.6A

Freq [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.7	0.446	139.9	3.493	56.0	0.058	8.3	0.345	-133.4
5.8	0.440	120.5	3.446	35.8	0.063	-10.9	0.323	-150.2
5.9	0.434	102.3	3.359	16.0	0.068	-30.3	0.307	-168.0
6.0	0.427	84.7	3.277	-4.2	0.072	-49.6	0.294	173.8
6.1	0.419	67.8	3.229	-24.2	0.075	-68.6	0.292	155.0
6.2	0.409	51.6	3.171	-43.3	0.079	-87.6	0.297	137.6
6.3	0.399	35.5	3.106	-62.5	0.082	-106.6	0.308	121.7
6.4	0.383	19.4	3.059	-82.1	0.084	-125.8	0.320	107.1
6.5	0.359	2.9	3.020	-101.8	0.086	-144.2	0.330	94.9
6.6	0.326	-15.0	2.986	-121.9	0.088	-164.0	0.337	83.5

■ Package Outline
Case Style : IK



Pin Assignment

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

Unit : mm



ELM5964-10F

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.