

ELM6472-10F

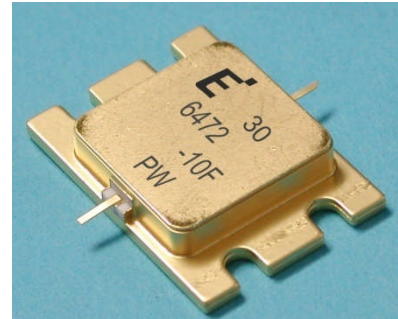
C-Band Internally Matched FET

FEATURES

- High Output Power: P1dB=40.5dBm(Typ.)
- High Gain: G1dB=9.5dB(Typ.)
- High PAE: η_{add} =36%(Typ.)
- Broad Band: 6.4~7.2GHz
- Impedance Matched Zin/Zout = 50 Ω
- Hermetically Sealed Package

DESCRIPTION

The ELM6472-10F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 Ω system.



ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25°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 _{stg}	-55 to +125	°C
Channel Temperature	T _{ch}	175	°C

RECOMMENDED OPERATING CONDITION (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V _{DS}		≤10	V
Forward Gate Current	I _{GF}	R _G =50 ohm	≤27.0	mA
Reverse Gate Current	I _{GR}	R _G =50 ohm	≥-5.8	mA

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	4.0	5.6	A
Trans conductance	g _m	V _{DS} =5V, I _{DS} =2.4A	-	4.0	-	S
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =240mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-240uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V f= 6.4 ~ 7.2 GHz I _{SDC} =2.6A (typ.) Z _S =Z _L =50 ohm	39.5	40.5	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		8.5	9.5	-	dB
Drain Current	I _{DSR}		-	2.6	3.0	A
Power-added Efficiency	η_{add}		-	36	-	%
Gain Flatness	ΔG		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM ₃	f=7.2 GHz Δf =10MHz, 2-tone Test P _{out} =29dBm (S.C.L.)	-44	-46	-	dBc
Thermal Resistance	R _{th}	Channel to Case	-	3.0	3.5	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I _{DSR} X R _{th}	-	-	100	°C

CASE STYLE : IK

S.C.L. : Single Carrier Level

G.C.P.: Gain Compression Point

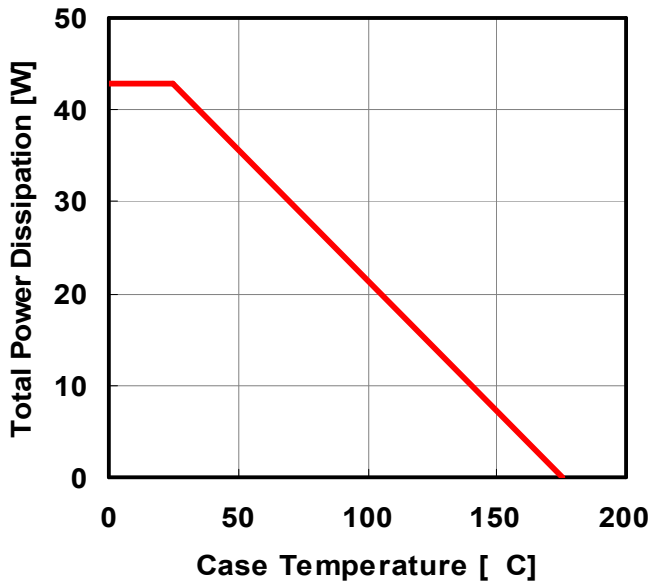
ESD Class IIIA 4000 ~ 8000V

Note : Based on JEDEC JESD22-A114 (C=100pF, R=1500 Ω)

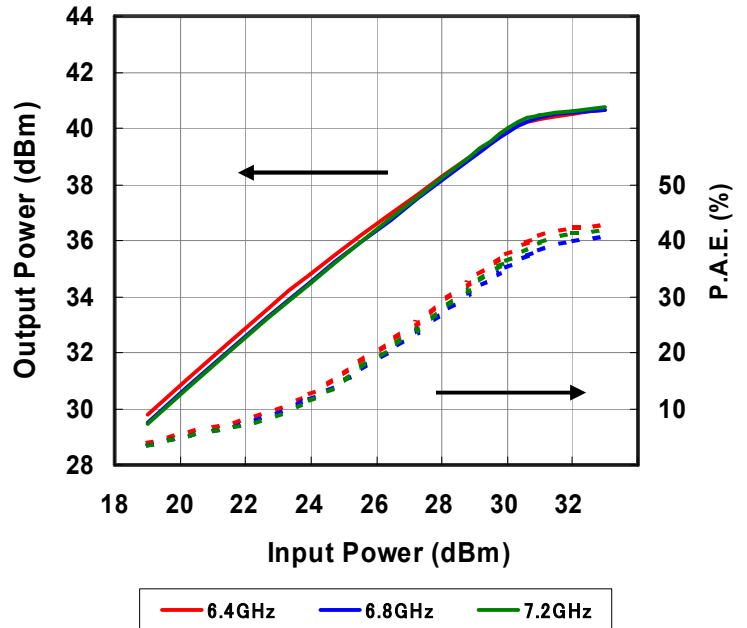
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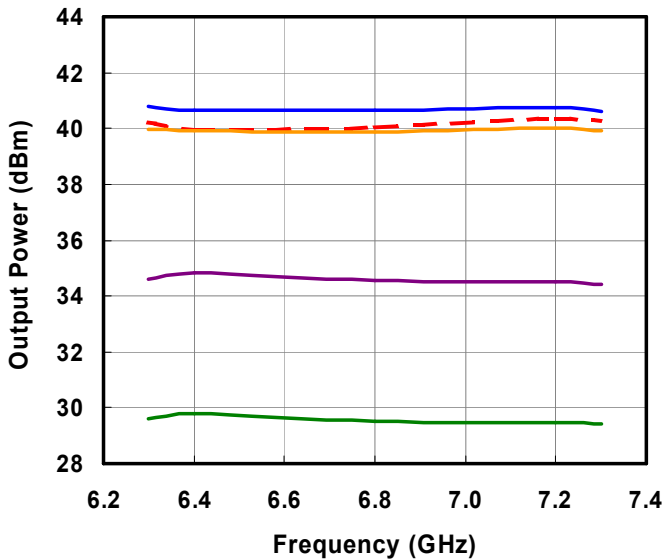
Power Derating Curve



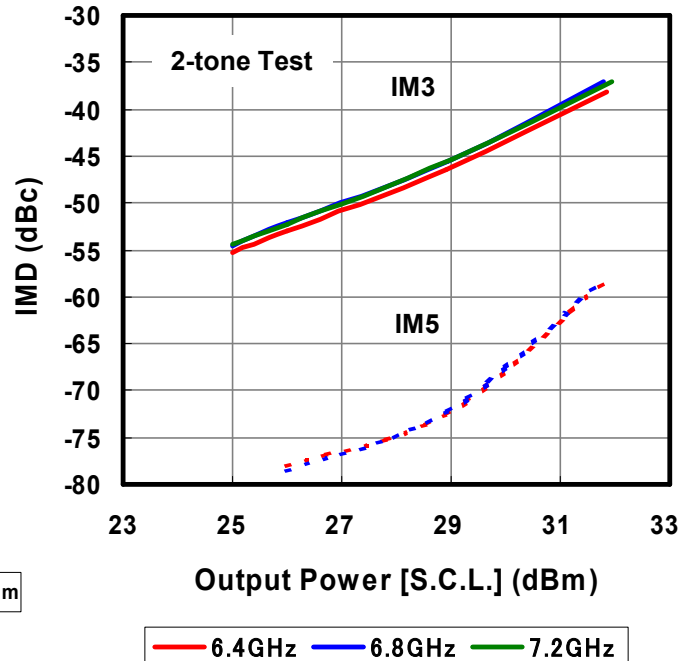
Input Power vs. Output Power & P.A.E
VDS=10V, IDS(DC)=2.6A



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



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



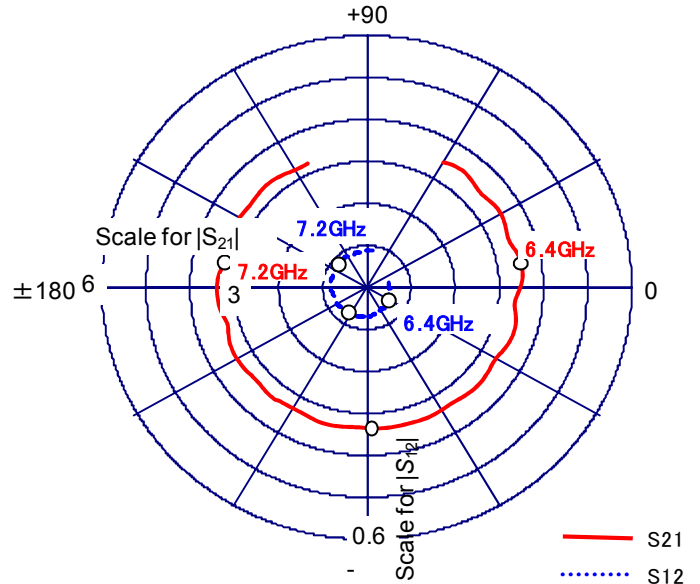
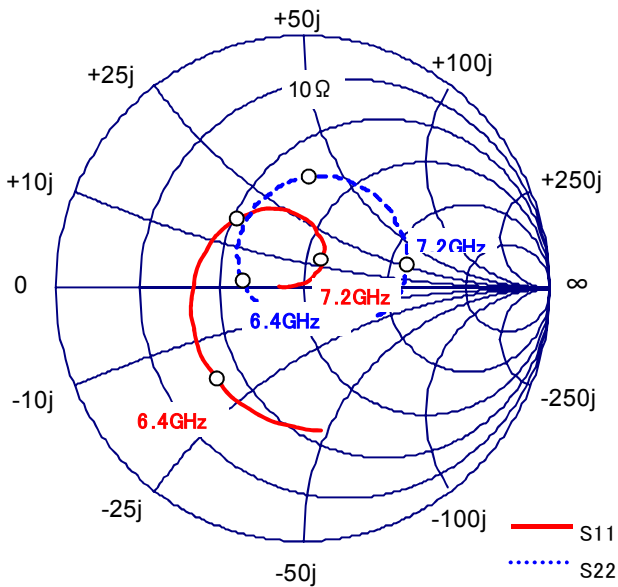
--- P1dB — 33dBm — 30dBm — 24dBm — 19dBm

— 6.4GHz — 6.8GHz — 7.2GHz

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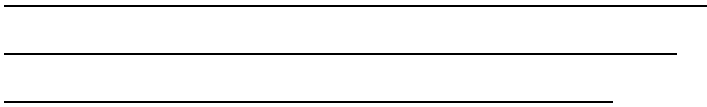
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S-PARAMETER



VDS=10.0V , IDS=2.6A

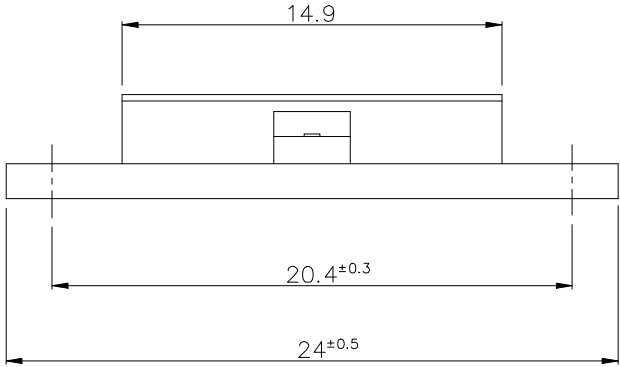
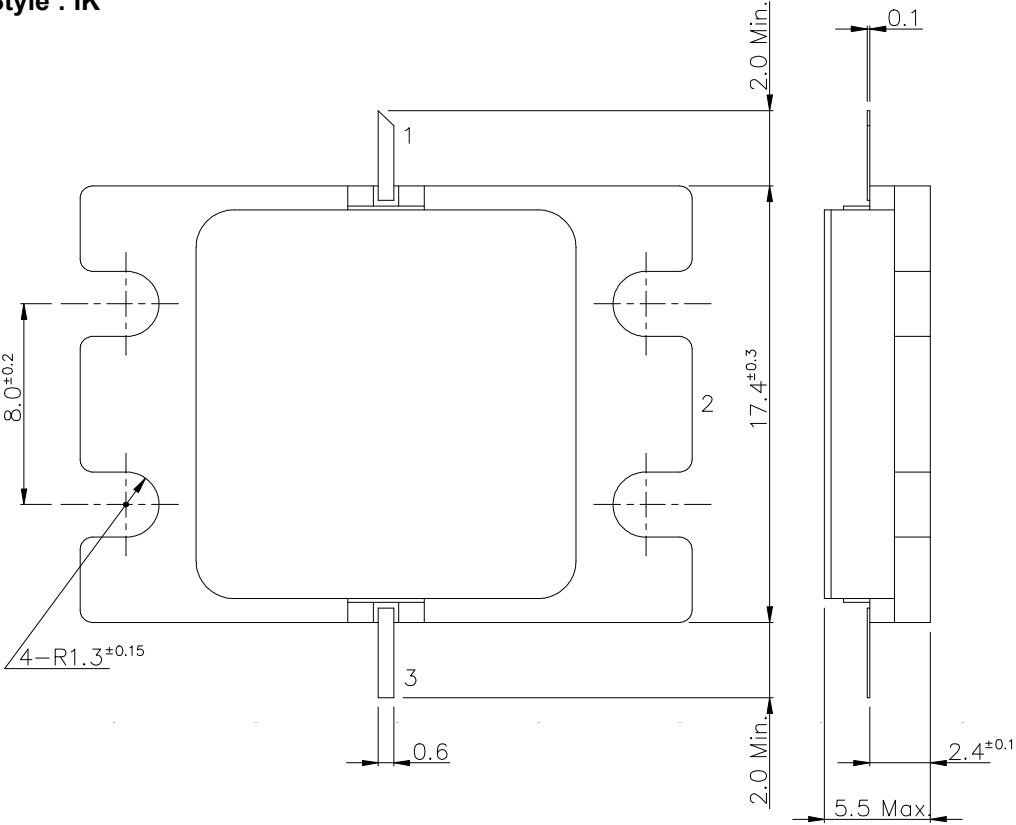
Freq [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6.2	0.566	-82.6	3.424	60.0	0.048	16.0	0.128	-103.6
6.3	0.531	-108.2	3.470	34.0	0.054	-7.2	0.170	-156.7
6.4	0.494	-135.1	3.533	7.7	0.057	-32.8	0.245	170.3
6.5	0.466	-159.6	3.476	-16.3	0.061	-57.1	0.313	145.0
6.6	0.437	176.9	3.420	-40.6	0.066	-78.3	0.366	123.9
6.7	0.414	154.1	3.395	-64.8	0.071	-100.6	0.414	104.3
6.8	0.378	131.7	3.364	-89.6	0.074	-126.6	0.444	85.1
6.9	0.339	110.0	3.364	-114.4	0.079	-148.3	0.469	66.7
7.0	0.279	88.7	3.369	-140.1	0.081	-173.4	0.475	48.0
7.1	0.215	70.0	3.304	-165.4	0.084	160.8	0.464	30.5
7.2	0.135	54.3	3.292	168.3	0.086	137.2	0.432	12.0
7.3	0.036	55.9	3.307	141.9	0.086	111.8	0.381	-6.0
7.4	0.096	173.9	3.241	114.8	0.090	82.9	0.312	-22.1



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■ Package Out Line
Case Style : IK



- PIN ASSIGNMENT
- 1 : GATE
 - 2 : SOURCE
 - 3 : DRAIN
 - 4 : SOURCE

Unit : mm

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CAUTION

Eudyna Devices Compound Semiconductor 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 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.

