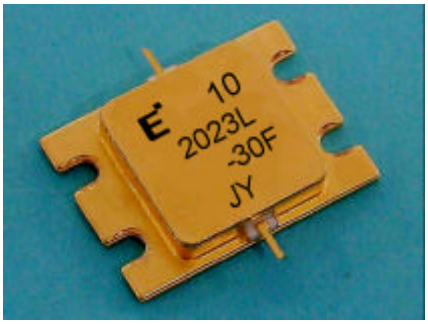
FLM2023L-30F

L-Band Internally Matched FET

FEATURES

- High Output Power: P1dB=45.0dBm(Typ.)
- High Gain: G1dB=13.0dB(Typ.)
- High PAE: ηadd=43%(Typ.)
- Broad Band: 2.025~2.285GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package



DESCRIPTION

The FLM2023L-30F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50Ω 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	107	W
Storage Temperature	T_{stg}	-65 to +175	°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=25 ohm	≦54	mA
Reverse Gate Current	I_{GR}	R_G=25 ohm	≧-17.2	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	-	-	16	A
Trans conductance	g_m	V_{DS}=5V , I_{DS}=7.2A	-	6000	-	mS
Pinch-off Voltage	V_p	V_{DS}=5V , I_{DS}=720mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}=-720uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS}=10V I_{DS}DC=7.0A f= 2.025 ~ 2.285 GHz Zs=Z_L=50 ohm	44.0	45.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		12.0	13.0	-	dB
Drain Current	I_{dsr}		-	7.0	8.5	A
Power-added Efficiency	N_{add}		-	43	-	%
Gain Flatness	ΔG		-	-	2.0	dB
3rd Order Intermodulation Distortion	IM_3	f=2.285 GHz Δf=5MHz, 2-tone Test Pout=34.5dBm (S.C.L.)	-44	-	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	1.2	1.4	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} X R_{th}	-	-	100	°C

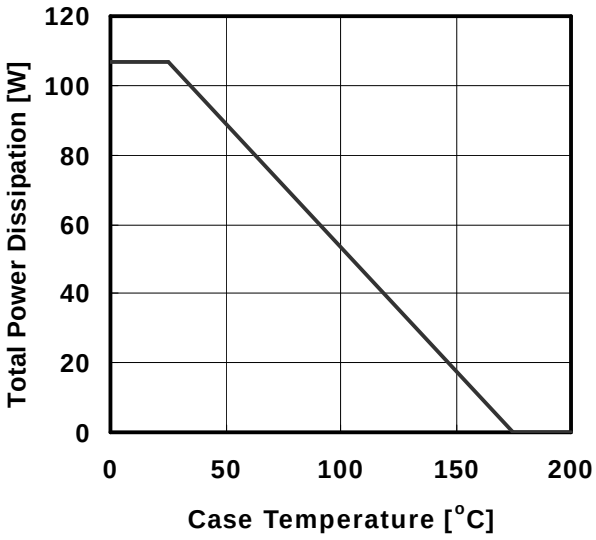
CASE STYLE : IK

G.C.P.: Gain Compression Point

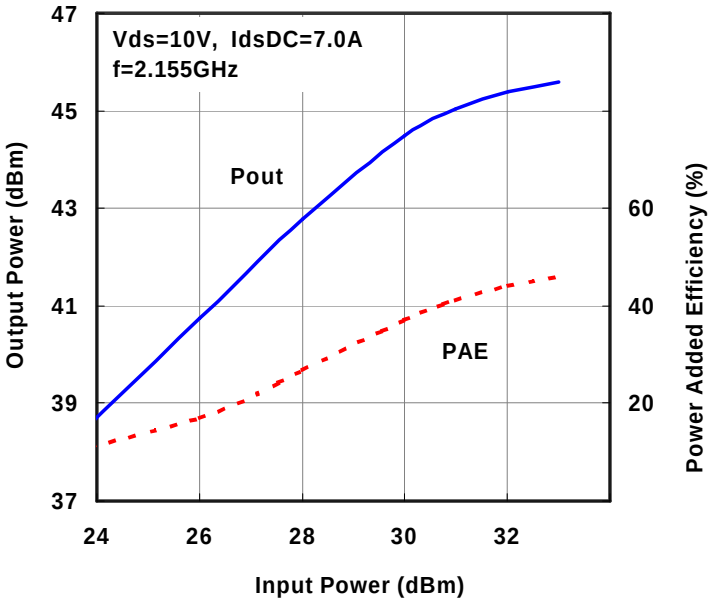
ESD	Class III	2000V ~

Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kΩ)

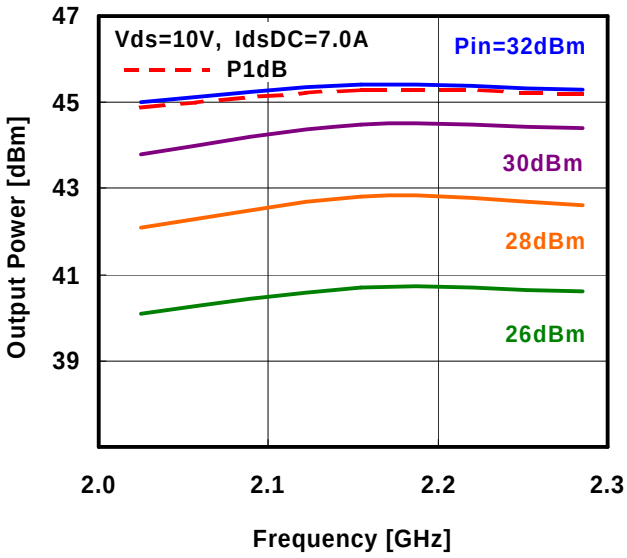
POWER DERATING CURVE



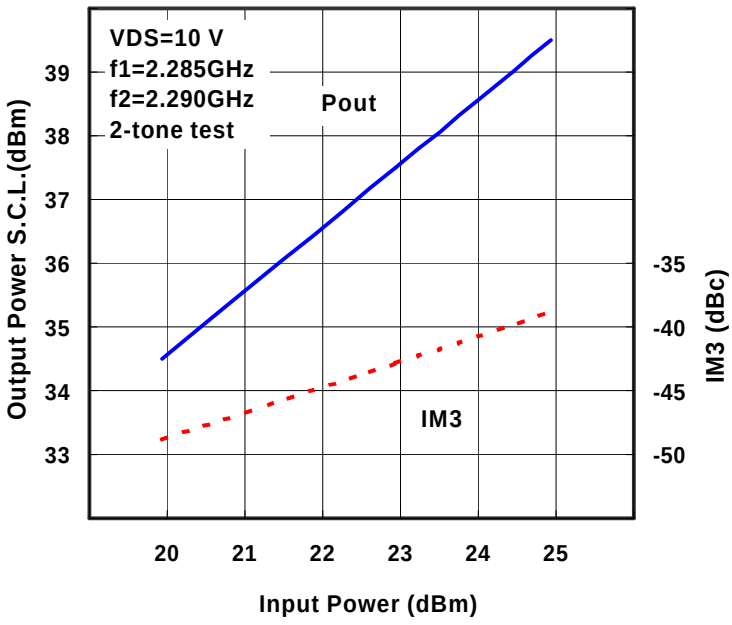
OUTPUT POWER & POWER ADDED EFFICIENCY vs INPUT POWER



OUTPUT POWER vs FREQUENCY



OUTPUT POWER & IM3 vs. INPUT POWER



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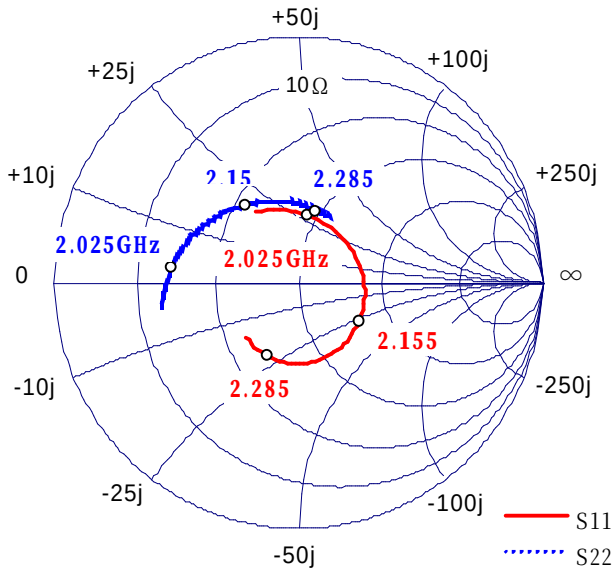
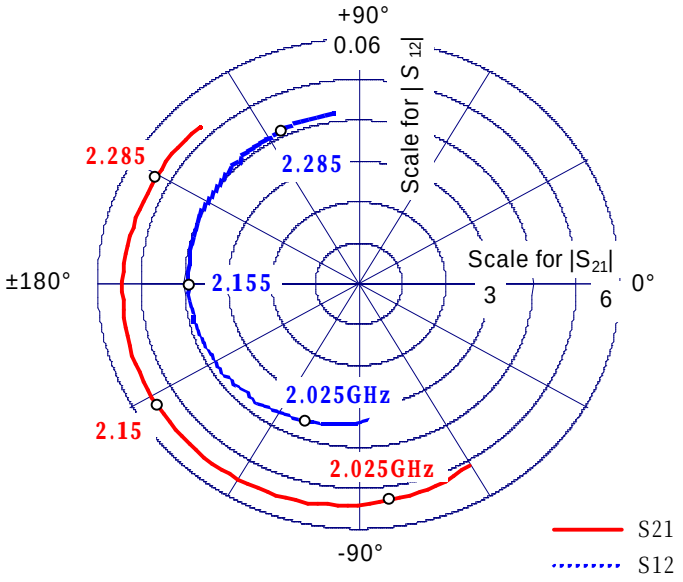
■ S-PARAMETERS





VDS=10.0V , IDS=7.0A

Freq	S11		S21		S12		S22	
[GHz]	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2.000	0.307	104.9	5.237	-70.1	0.034	-96.7	0.548	-177.1
2.025	0.276	82.6	5.358	-82.4	0.036	-110.2	0.522	173.5
2.050	0.258	58.2	5.448	-95.0	0.037	-123.8	0.495	164.1
2.075	0.254	33.6	5.498	-107.5	0.037	-137.0	0.468	154.8
2.100	0.262	10.4	5.526	-120.0	0.038	-150.6	0.441	145.4
2.125	0.275	-10.5	5.524	-132.3	0.038	-163.6	0.414	136.0
2.150	0.292	-29.5	5.510	-144.6	0.039	-176.6	0.390	126.5
2.155	0.294	-33.0	5.505	-147.1	0.039	-179.6	0.385	124.6
2.175	0.305	-46.6	5.481	-156.7	0.039	170.2	0.367	117.1
2.200	0.317	-62.6	5.449	-168.7	0.040	157.8	0.349	107.9
2.225	0.326	-77.5	5.418	179.5	0.040	145.3	0.332	98.7
2.250	0.329	-91.9	5.375	167.4	0.041	132.6	0.318	89.2
2.275	0.328	-106.6	5.331	155.5	0.041	120.5	0.307	79.7
2.285	0.325	-112.5	5.328	150.8	0.041	115.1	0.302	75.9
2.300	0.319	-121.5	5.319	143.5	0.042	107.9	0.297	70.3

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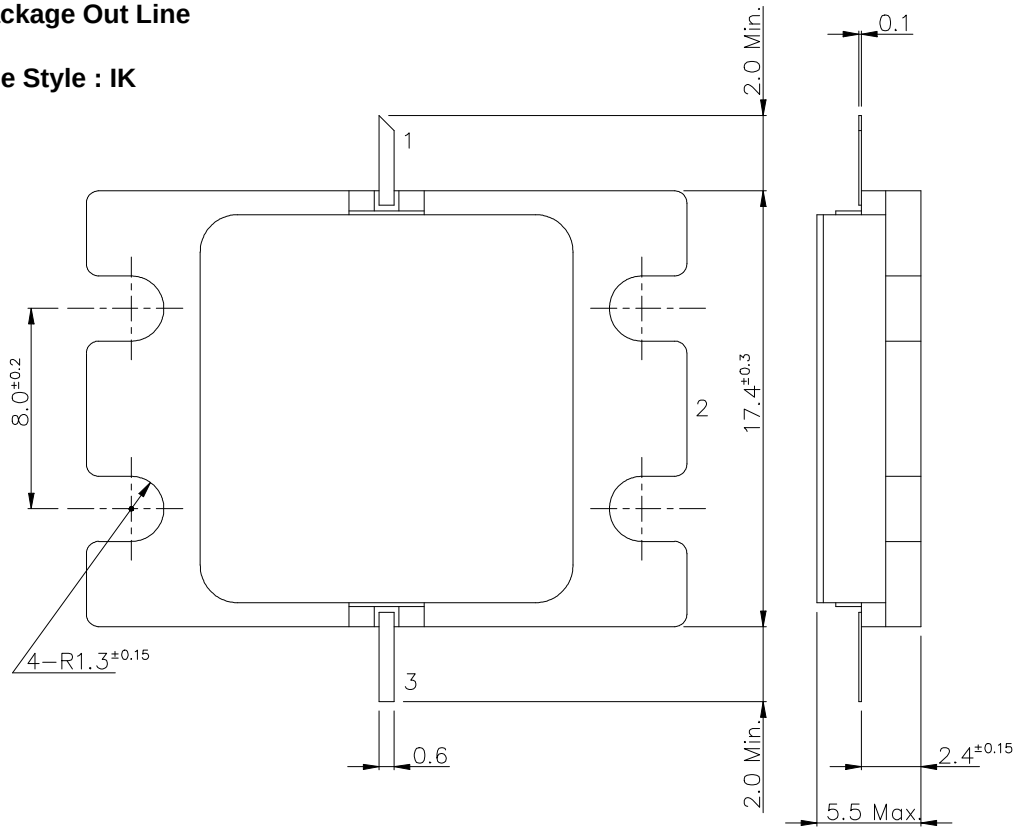
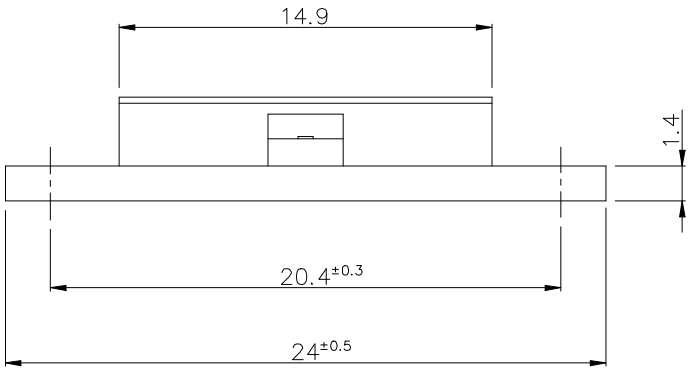
■ Package Out Line

Case Style : IK





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.

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