

FLM1415-8F

X,Ku-Band Internally Matched FET

FEATURES

- +High Output Power: P1dB=39.0dBm(Typ.)
- +High Gain: G1dB=5.0dB(Typ.)
- +High PAE: η_{add} =25%(Typ.)
- +Broad Band: 14.5 ~ 15.3GHz
- +Impedance Matched Zin/Zout = 50 Ω
- +Hermetically Sealed Package



DESCRIPTION

The FLM1415-8F 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}	-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 =100 ohm	32.0	mA
Reverse Gate Current	I _{GR}	R _G =100 ohm	-4.4	mA
Channel Temperature	T _{ch}		150	°C

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	-	3400	5200	mA
Trans conductance	g _m	V _{DS} =5V, I _{DSS} =2200mA	-	3400	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DSS} =170mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-170uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V I _{DSS} DC=0.65 I _{DSS} (typ.) f= 14.5 ~ 15.3 GHz Z _S =Z _L =50 ohm	38.0	39.0	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		4.0	5.0	-	dB
Drain Current	I _{DSR}		-	2200	2600	A
Power-added Efficiency	η_{add}		-	25	-	%
Gain Flatness	ΔG		-	-	1.2	dB
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}	-	-	80	°C

CASE STYLE : IA

G.C.P.: Gain Compression Point

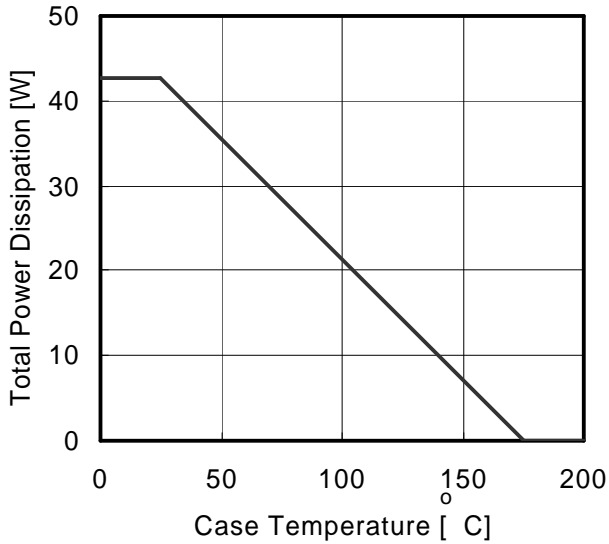
ESD	Class III	2000V ~
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Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5k Ω)

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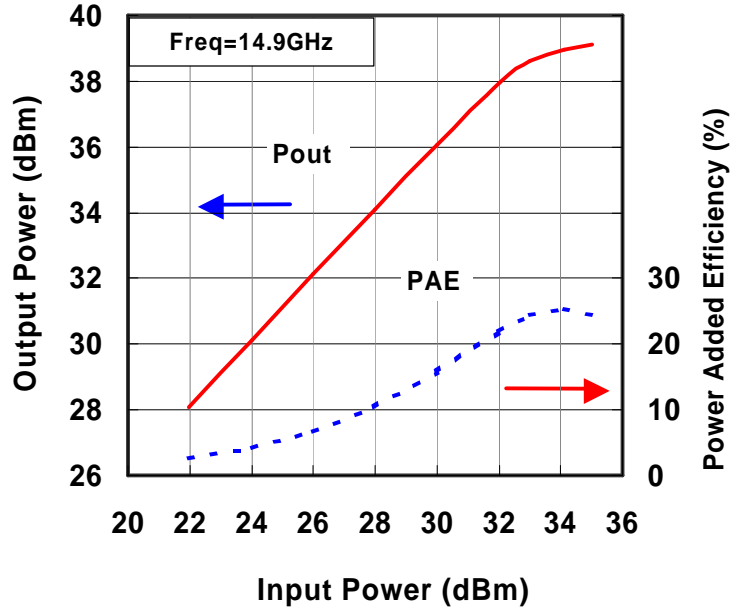
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POWER DERATING CURVE



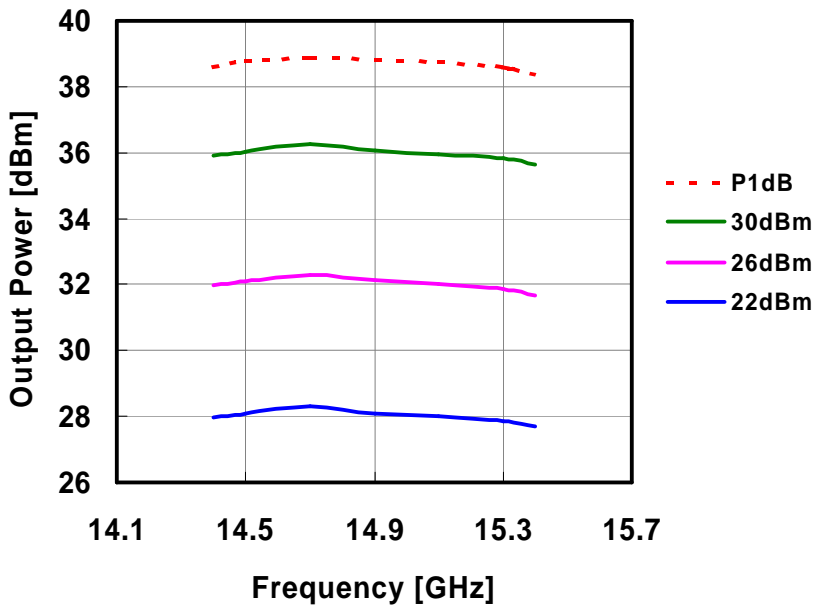
OUTPUT POWER , EFFICIENCY vs. INPUT POWER

Vds=10V, IdsDC=0.65 Idss



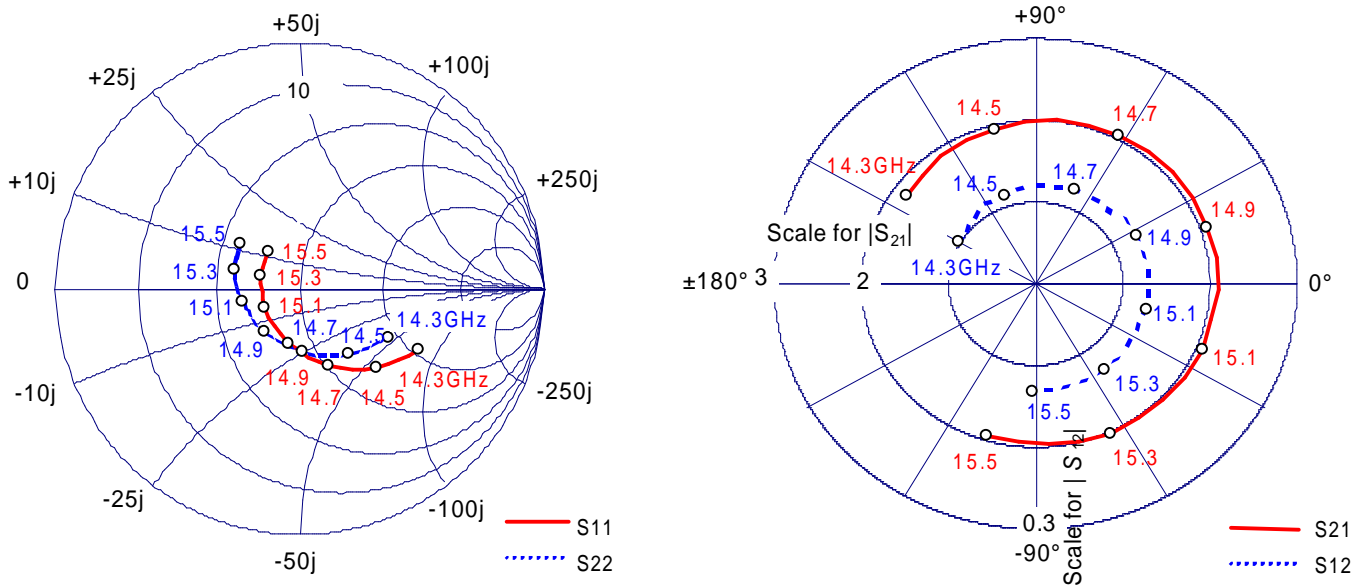
OUTPUT POWER vs. FREQUENCY

Vds=10V, Ids=0.65IDSS



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S-PARAMETER



VDS=10.0V , IDS=0.65 IDSS

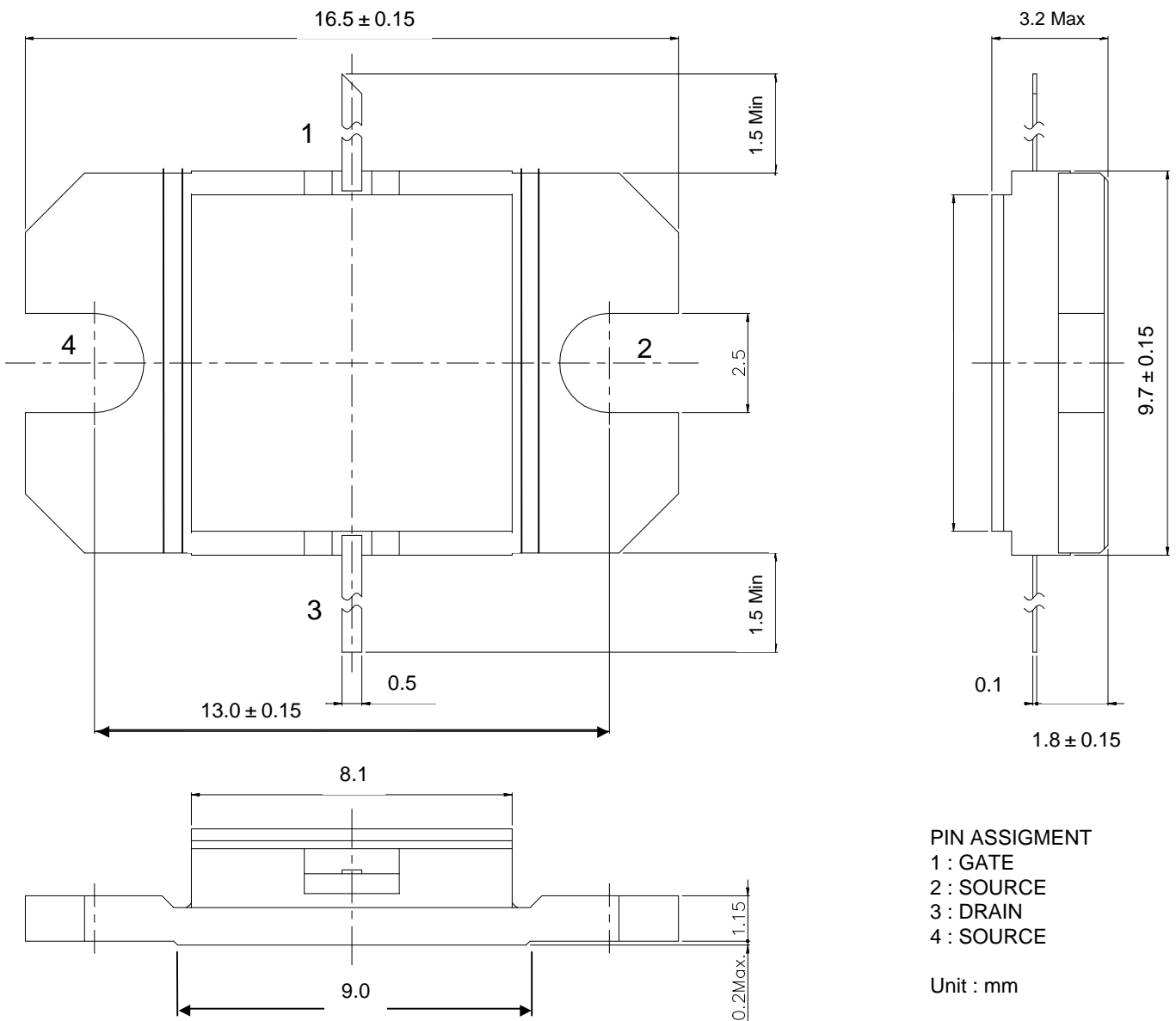
Freq. (GHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
14.3	0.543	-27.1	1.825	144.1	0.103	149.8	0.412	-28.4
14.4	0.498	-35.7	1.905	124.7	0.109	129.9	0.372	-39.9
14.5	0.450	-45.7	1.948	104.1	0.114	108.6	0.334	-53.4
14.6	0.395	-56.3	2.014	83.2	0.120	88.9	0.295	-68.8
14.7	0.338	-68.8	2.047	62.3	0.123	68.4	0.260	-87.0
14.8	0.280	-83.1	2.079	40.8	0.126	47.7	0.236	-107.4
14.9	0.225	-101.4	2.088	19.5	0.129	26.6	0.223	-129.6
15.0	0.182	-123.2	2.091	-2.0	0.130	6.4	0.227	-150.4
15.1	0.161	-150.0	2.079	-22.9	0.130	-13.6	0.241	-168.2
15.2	0.156	-175.7	2.040	-44.0	0.131	-33.4	0.260	176.7
15.3	0.167	160.8	2.014	-64.9	0.131	-53.1	0.277	164.6
15.4	0.182	143.2	1.969	-85.7	0.131	-72.7	0.292	153.8
15.5	0.198	129.0	1.939	-106.7	0.132	-91.9	0.303	143.7

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Package Outline

CASE STYLE: IA



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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.

