FLM1415-8F

Ku-Band Internally Matched FET

FEATURES

- High Output Power: P1dB=39.0dBm(Typ.)
- High Gain: G1dB=5.0dB(Typ.)
- High PAE: ηadd=25%(Typ.)
- Broad Band: 14.5 to 15.3GHz
- Impedance Matched Zin/Zout = 50ohm
- 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 50ohm system.

ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25deg.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	deg.C
Channel Temperature	T_{ch}	175	deg.C

RECOMMENDED OPERATING CONDITION (Case Temperature Tc=25deg.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	Tch		150	deg.C

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25deg.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_{DS}=2200mA	-	3400	-	mS
Pinch-off Voltage	V_p	V_{DS}=5V , I_{DS}=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_{DS}DC=0.65 I_{DSS} (typ.) f= 14.5 to 15.3 GHz Zs=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	N_{add}		-	25	-	%
Gain Flatness	ΔG		-	-	1.2	dB
Thermal Resistance	R_{th}	Channel to Case	-	3.0	3.5	deg.C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} X R_{th}	-	-	80	deg.C

G.C.P.: Gain Compression Point

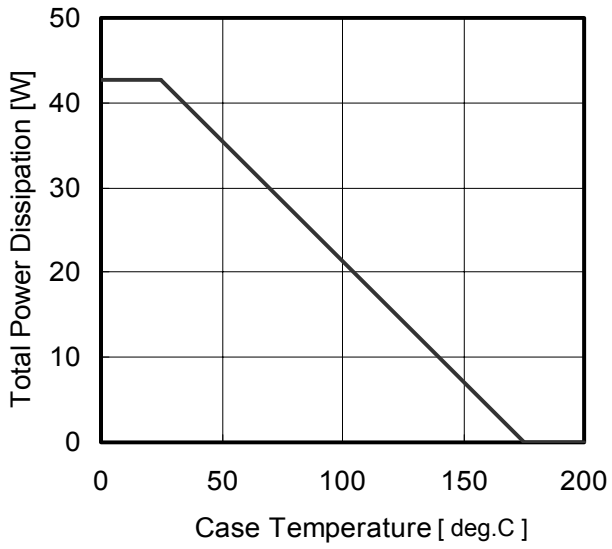
CASE STYLE : IA

ESD	**Class 3A**	**4000V to 8000V**

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

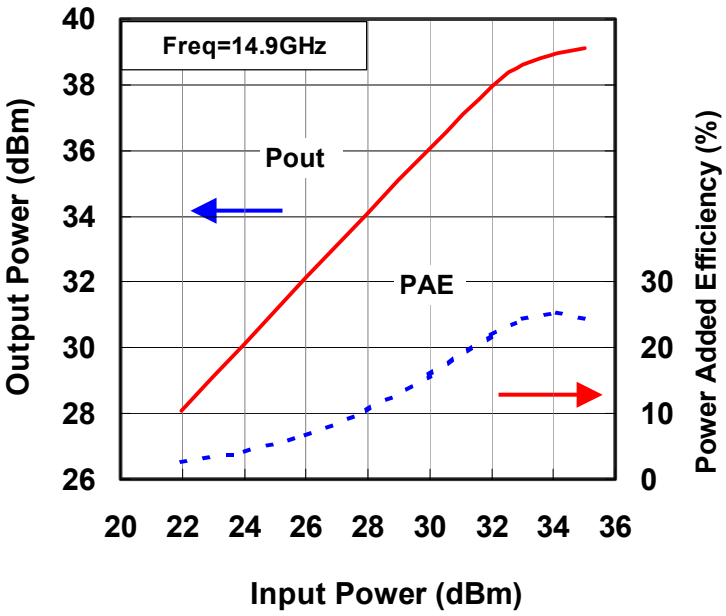
RoHS COMPLIANCE	**Yes**

POWER DERATING CURVE



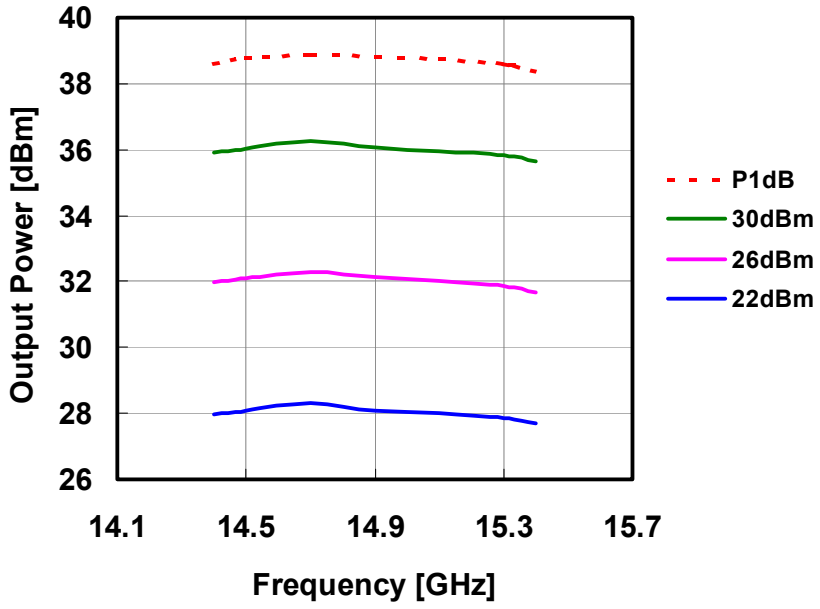
OUTPUT POWER , EFFICIENCY
vs. INPUT POWER

Vds=10V, IdsDC=0.65 Idss

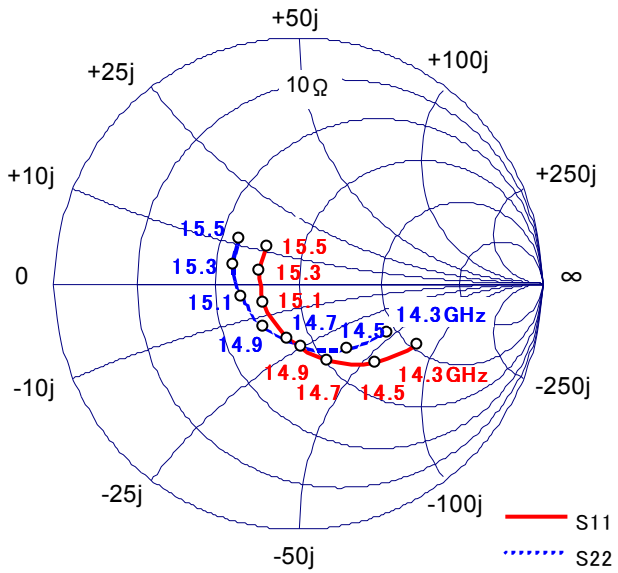


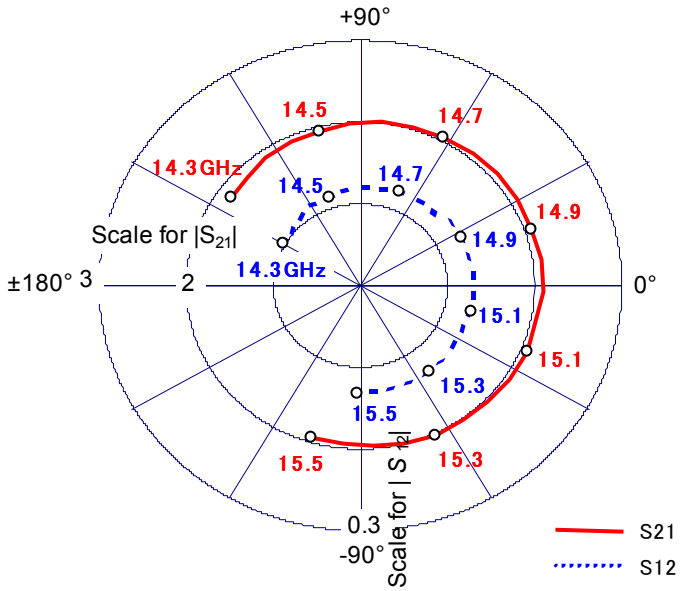
OUTPUT POWER vs. FREQUENCY

Vds=10V, Ids=0.65IDSS



■ S-PARAMETER



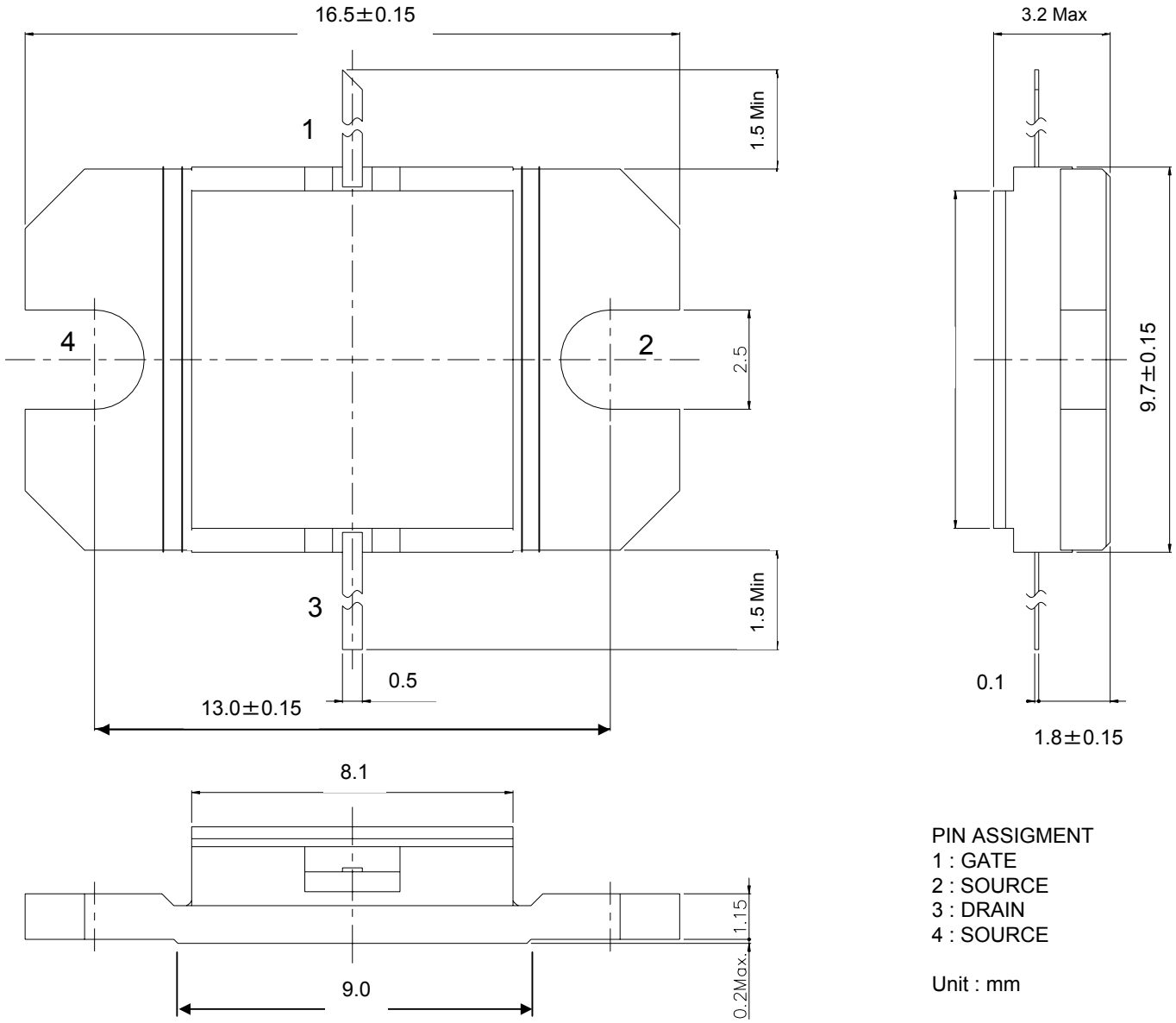


VDS=10.0V , IDS=0.65 IDSS

Freq.	S11		S21		S12		S22	
(GHz)	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

■ Package Outline

CASE STYLE: IA



PIN ASSIGMENT
1 : GATE
2 : SOURCE
3 : DRAIN
4 : SOURCE

Unit : mm

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.