FLM5359-45F

C-Band Internally Matched FET

FEATURES

- High Output Power: P1dB=46.5dBm(Typ.)
- High Gain: G1dB=8.5dB(Typ.)
- High PAE: ηadd=36%(Typ.)
- Broad Band: 5.3~5.9GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package

DESCRIPTION

The FLM5359-45F 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	115.4	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}		≤12	V
Forward Gate Current	I_{GF}	R_G=13 ohm	≤107.2	mA
Reverse Gate Current	I_{GR}	R_G=13 ohm	≥-23.2	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	-	16.0	-	A
Transconductance	g_m	V_{DS}=5V, I_{DS}=8.0A	-	8000	-	mS
Pinch-off Voltage	V_p	V_{DS}=5V, I_{DS}=960mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}=-960uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS}=12V I_{DS}(DC)=8.0A (typ.) f= 5.3 ~ 5.9 GHz Zs=Z_L=50 ohm	46.0	46.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.5	8.5	-	dB
Drain Current	I_{dsr}		-	8.5	10.0	A
Power-added Efficiency	N_{add}		-	36	-	%
Gain Flatness	ΔG		-	-	1.4	dB
Thermal Resistance	R_{th}	Channel to Case	-	0.8	1.0	°C/W
Channel Temperature Rise	ΔT_{ch}	12V x I_{DS}(DC) X R_{th}	-	-	100	°C

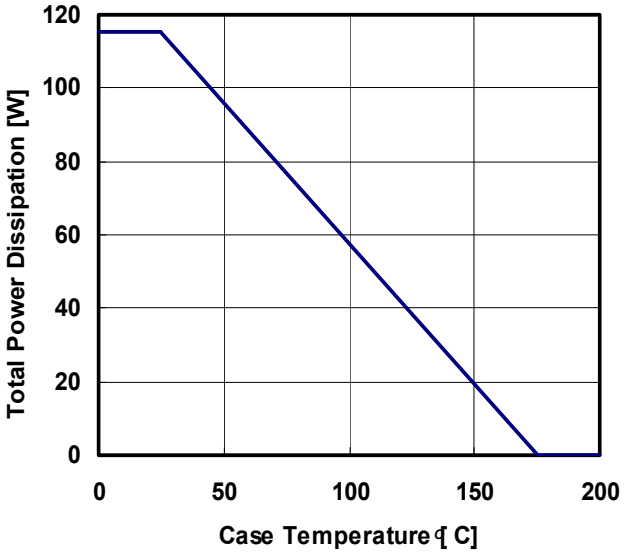
G.C.P.: Gain Compression Point

CASE STYLE : IK

ESD	Class III	2000V ~

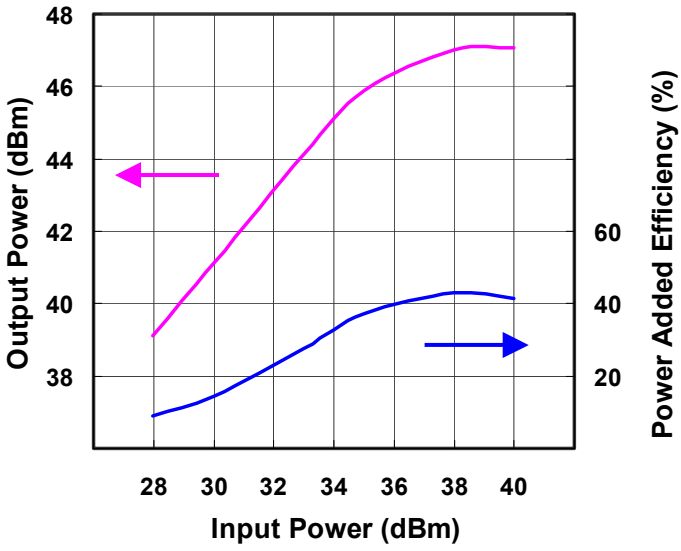
Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kΩ)

POWER DERATING CURVE



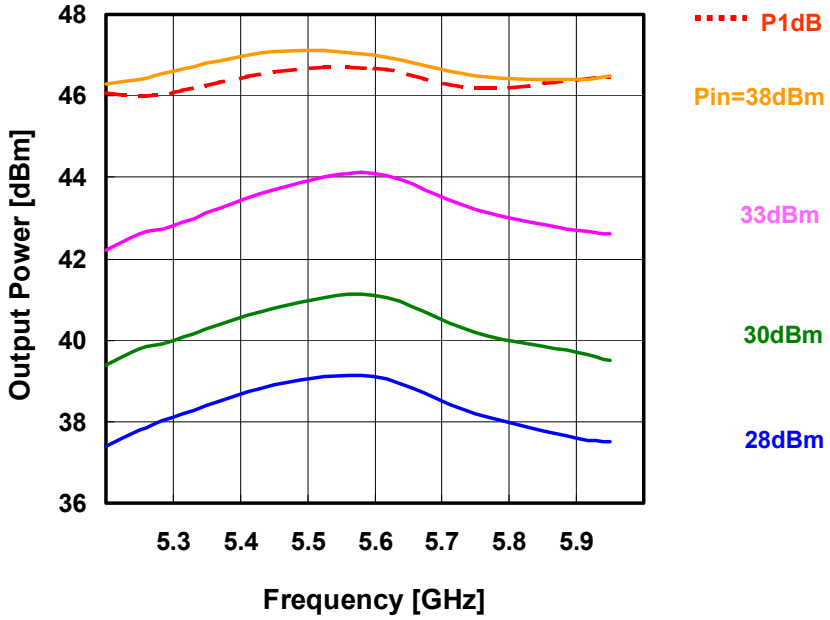
OUTPUT POWER & POWER ADDED EFFICIENCY
vs INPUT POWER

VDS=12V, IDS=8.0A, f=5.6GHz

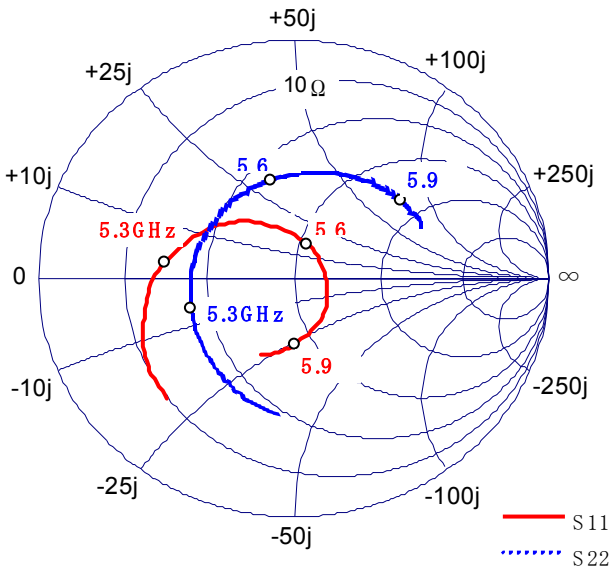


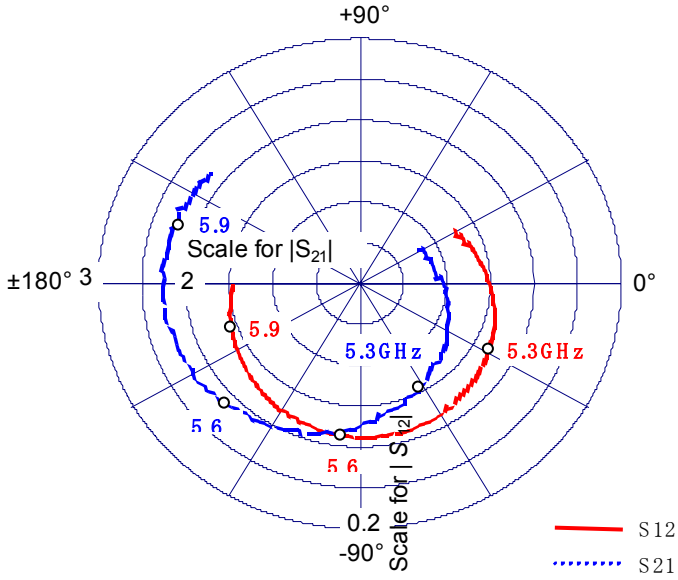
OUTPUT POWER vs FREQUENCY

VDS=12V, IDS=8.0A



■ S-PARAMETER



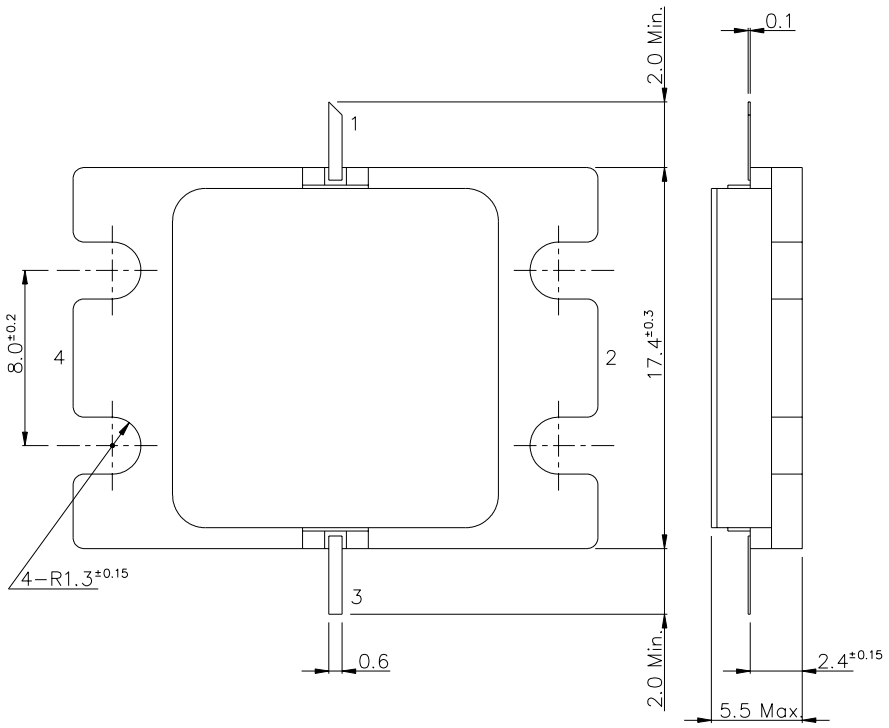


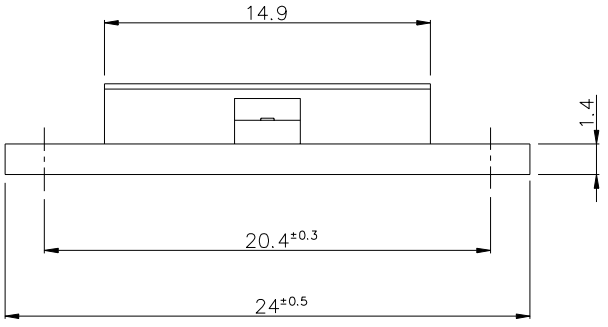
VDS=12V, IDS=7.0A

Freq.	S11		S21		S12		S22	
[GHz]	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.1	0.668	−150.7	2.792	11.2	0.031	−1.5	0.528	−114.3
5.2	0.595	−168.2	3.083	−7.4	0.039	−31.3	0.470	−136.0
5.3	0.510	172.3	3.380	−28.3	0.048	−61.7	0.420	−162.5
5.4	0.391	148.1	3.652	−50.3	0.057	−86.5	0.395	166.1
5.5	0.268	119.3	3.773	−73.4	0.065	−112.3	0.397	132.7
5.6	0.154	71.6	3.740	−96.7	0.071	−136.4	0.422	102.2
5.7	0.126	−2.5	3.593	−119.0	0.074	−158.3	0.461	75.6
5.8	0.194	−55.4	3.372	−140.0	0.076	−179.5	0.500	54.6
5.9	0.274	−88.6	3.149	−159.9	0.073	160.9	0.529	38.1
6.0	0.346	−112.3	2.900	−178.7	0.073	141.5	0.546	23.9
6.1	0.421	−134.5	2.686	162.8	0.070	124.6	0.543	12.0

■ Package Out Line

Case Style : IK





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

Unit : mm

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CAUTION

Eudyna Devices Inc. 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.