

FLM5359-45F

C-Band Internally Matched FET

FEATURES

- High Output Power: P1dB=46.5dBm(Typ.)
- High Gain: G1dB=8.5dB(Typ.)
- High PAE: η_{add} =36%(Typ.)
- Broad Band: 5.3~5.9GHz
- Impedance Matched Zin/Zout = 50 Ω
- 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 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	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 _{DSS} =8.0A	-	8000	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DSS} =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	46.0	46.5	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}	I _{DSS} (DC)=8.0A (typ.)	7.5	8.5	-	dB
Drain Current	I _{DSR}	f= 5.3 ~ 5.9 GHz	-	8.5	10.0	A
Power-added Efficiency	η _{add}	Z _s =Z _L =50 ohm	-	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 _{DSS} (DC) X R _{th}	-	-	100	°C

CASE STYLE : IK

G.C.P.: Gain Compression Point

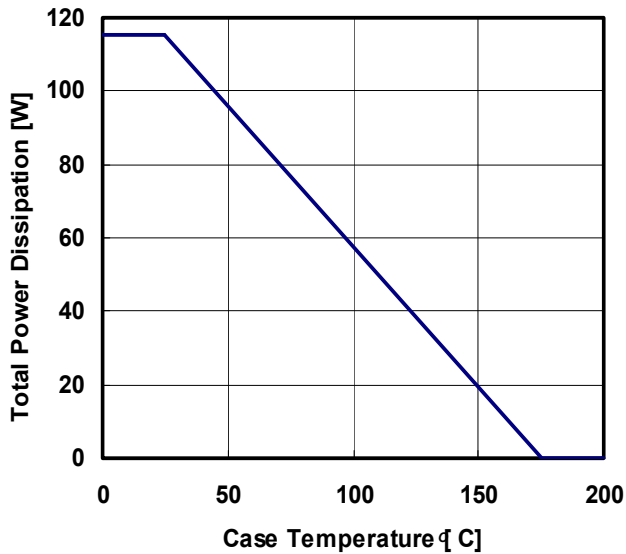
ESD	Class III	2000V ~
-----	-----------	---------

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

FLM5359-45F

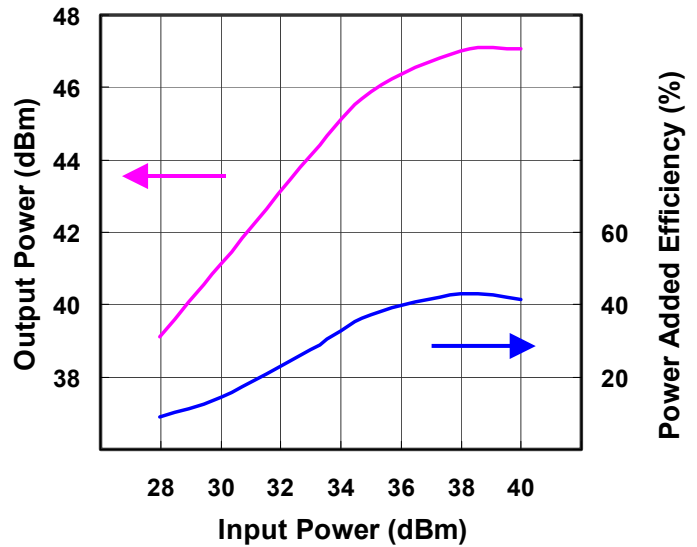
C-Band Internally Matched FET

POWER DERATING CURVE



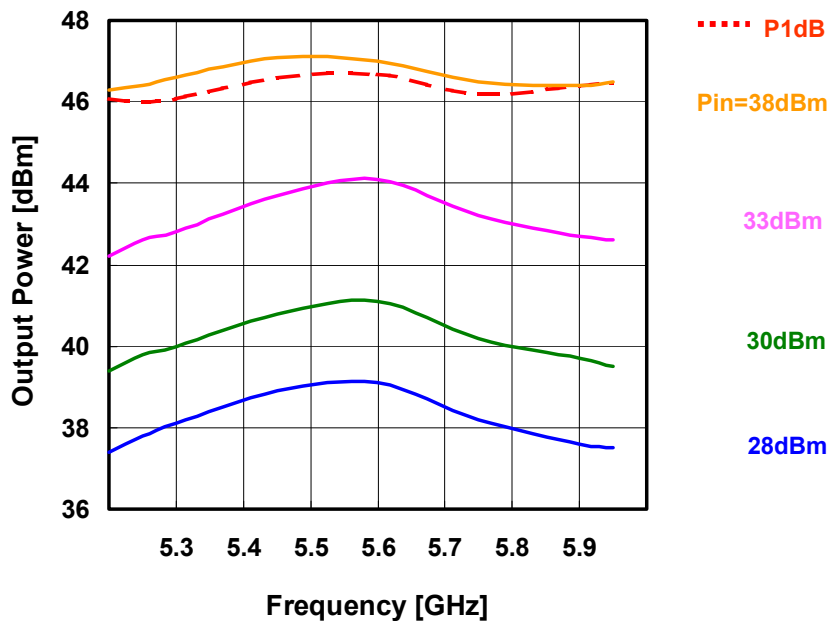
OUTPUT POWER & POWER ADDED EFFICIENCY vs INPUT POWER

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



OUTPUT POWER vs FREQUENCY

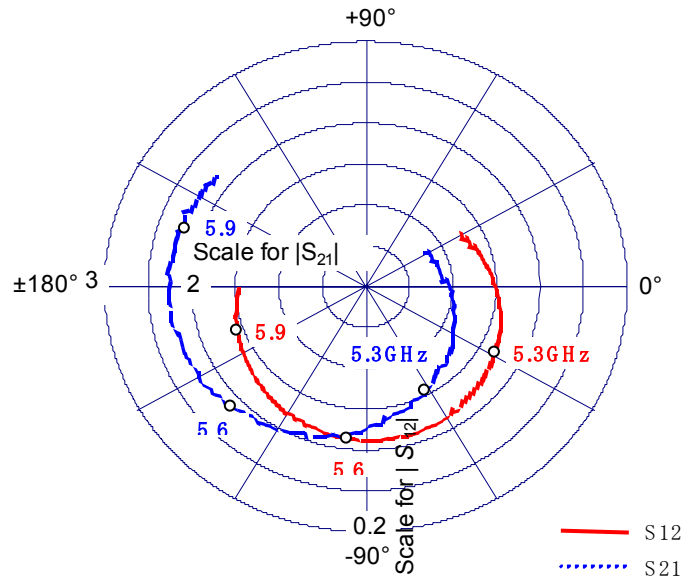
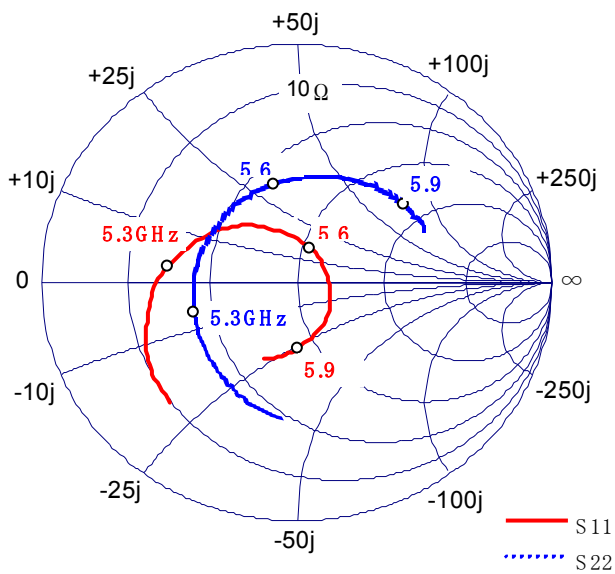
VDS=12V, IDS=8.0A



FLM5359-45F

C-Band Internally Matched FET

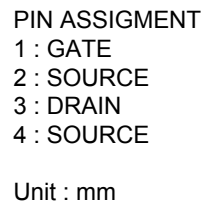
S-PARAMETER



VDS=12V, IDS=7.0A

Freq. [GHz]	S11		S21		S12		S22	
	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

Case Style : IK



FLM5359-45F

C-Band Internally Matched FET

For further information please contact :

Eudyna Devices USA Inc.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
TEL: (408) 232-9500
FAX: (408) 428-9111
www.us.eudyna.com

Eudyna Devices Europe Ltd.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

Eudyna Devices Asia Pte. Ltd.

Hong Kong Branch
Rm.1101,Ocean Centre, 5 Canton Road
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

Eudyna Devices Inc.

1000 Kamisukiahara, showa-cho
Nakakomagun, Yamanashi
409-3883, Japan
(Kokubo Industrial Park)
TEL +81-55-275-4411
FAX +81-55-275-9461

Sales Division

1, Kanai-cho, Sakae-ku
Yokohama,244-0845,Japan
TEL +81-45-853-8156
FAX +81-45-853-8170

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.

Eudyna Devices Inc. reserves the right to change products and specifications without notice. The information does not convey any license under rights of Eudyna Devices Inc. or others.

© 2004 Eudyna Devices USA Inc.

Printed in U.S.A.

