

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 _D =8.0A	-	8000	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _D =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 _D (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 _D (DC) X R _{th}	-	-	100	°C

CASE STYLE : IK

G.C.P.: Gain Compression Point

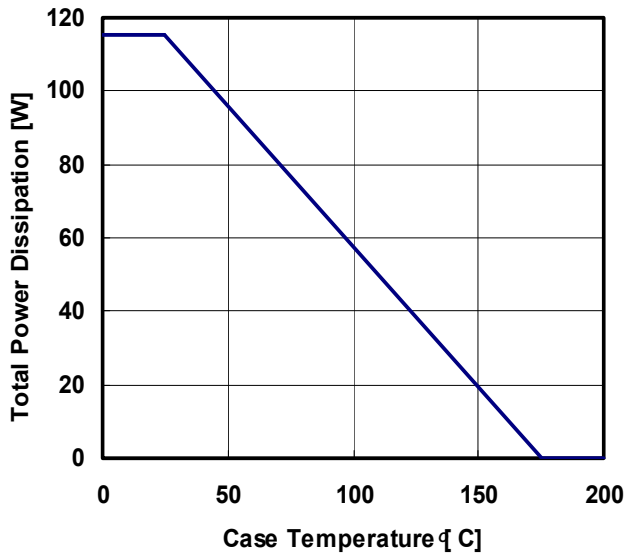
ESD	Class III	2000V ~
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Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5k Ω)

FLM5359-45F

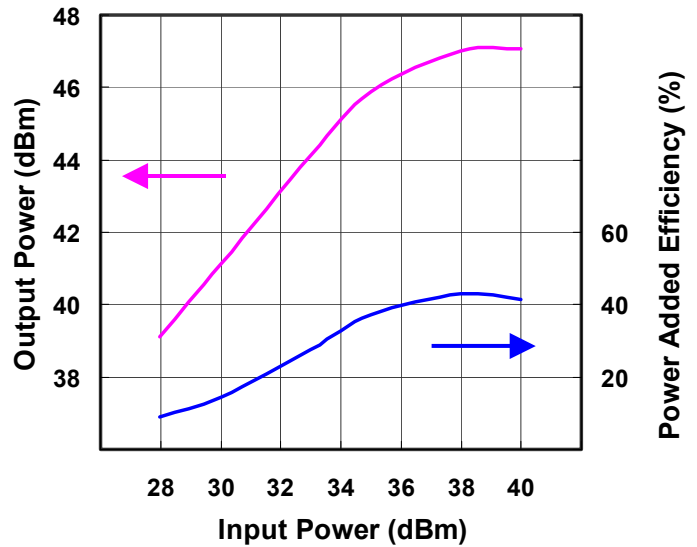
C-Band Internally Matched FET

POWER DERATING CURVE



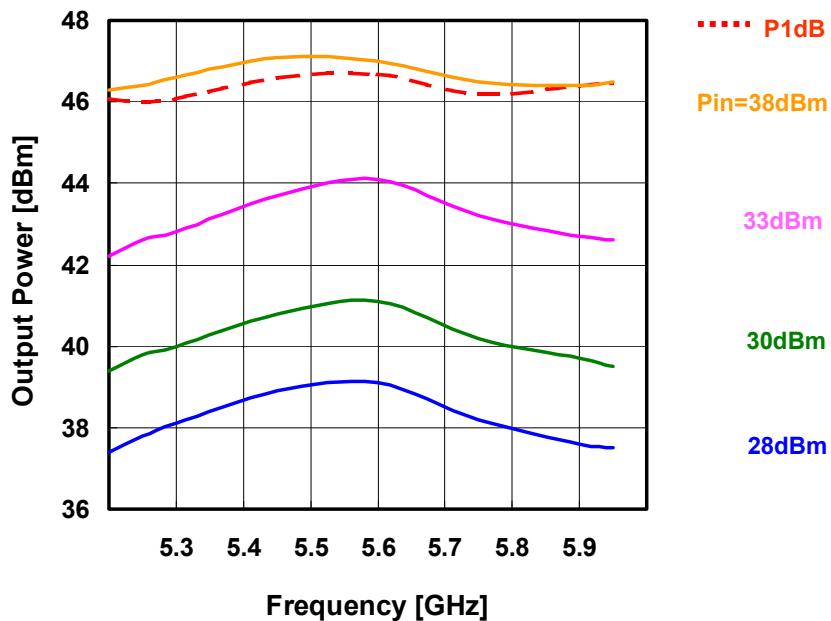
OUTPUT POWER & POWER ADDED EFFICIENCY vs INPUT POWER

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



OUTPUT POWER vs FREQUENCY

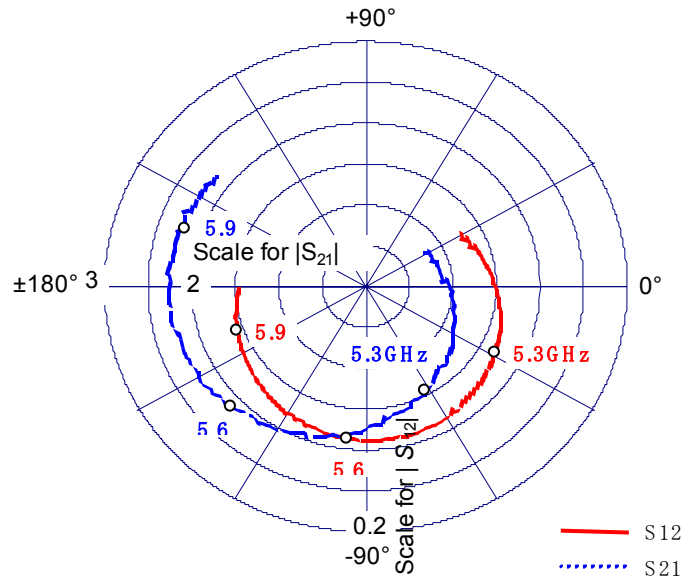
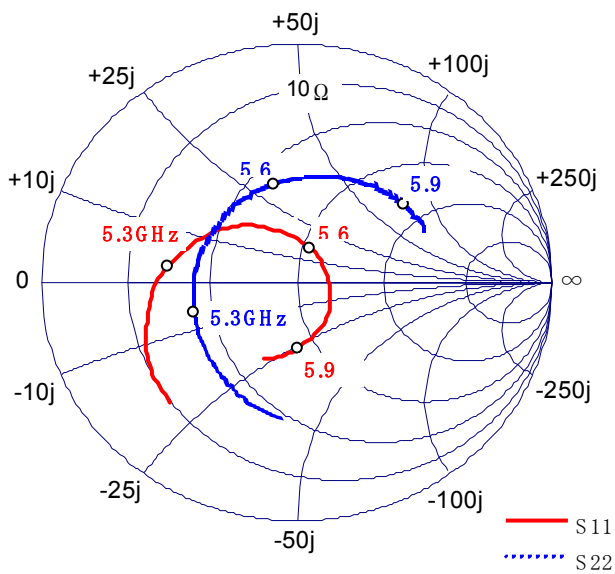
VDS=12V, IDS=8.0A



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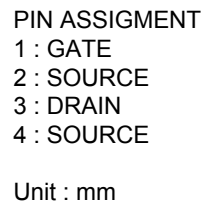
■ S-PARAMETER



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



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