

# FLM5359-45F

## C-Band Internally Matched FET

### FEATURES

- High Output Power: P1dB=46.5dBm(Typ.)
- High Gain: G1dB=8.5dB(Typ.)
- High PAE:  $\eta_{add}$ =36%(Typ.)
- Broad Band: 5.3~5.9GHz
- Impedance Matched Zin/Zout = 50 $\Omega$
- 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 $\Omega$  system.

### ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25°C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	15	V
Gate-Source Voltage	V <sub>GS</sub>	-5	V
Total Power Dissipation	P <sub>T</sub>	115.4	W
Storage Temperature	T <sub>stg</sub>	-65 to +175	°C
Channel Temperature	T <sub>ch</sub>	175	°C

### RECOMMENDED OPERATING CONDITION (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V <sub>DS</sub>		≤12	V
Forward Gate Current	I <sub>GF</sub>	R <sub>G</sub> =13 ohm	≤107.2	mA
Reverse Gate Current	I <sub>GR</sub>	R <sub>G</sub> =13 ohm	≥-23.2	mA

### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V	-	16.0	-	A
Transconductance	g <sub>m</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =8.0A	-	8000	-	mS
Pinch-off Voltage	V <sub>p</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =960mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> =-960uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DS</sub> =12V	46.0	46.5	-	dBm
Power Gain at 1dB G.C.P.	G <sub>1dB</sub>	I <sub>DS</sub> (DC)=8.0A (typ.)	7.5	8.5	-	dB
Drain Current	I <sub>DSR</sub>	f= 5.3 ~ 5.9 GHz	-	8.5	10.0	A
Power-added Efficiency	$\eta_{add}$	Z <sub>S</sub> =Z <sub>L</sub> =50 ohm	-	36	-	%
Gain Flatness	$\Delta G$		-	-	1.4	dB
Thermal Resistance	R <sub>th</sub>	Channel to Case	-	0.8	1.0	°C/W
Channel Temperature Rise	$\Delta T_{ch}$	12V x I <sub>DS</sub> (DC) X R <sub>th</sub>	-	-	100	°C

### CASE STYLE : IK

G.C.P.: Gain Compression Point

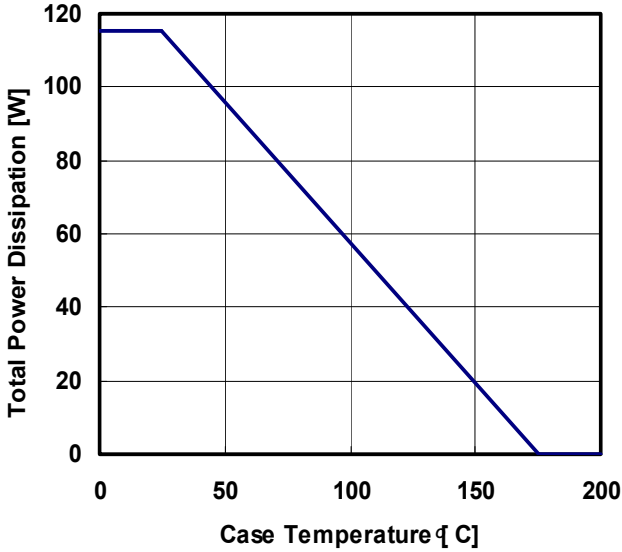
ESD	Class III	2000V ~
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Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5k $\Omega$ )

# FLM5359-45F

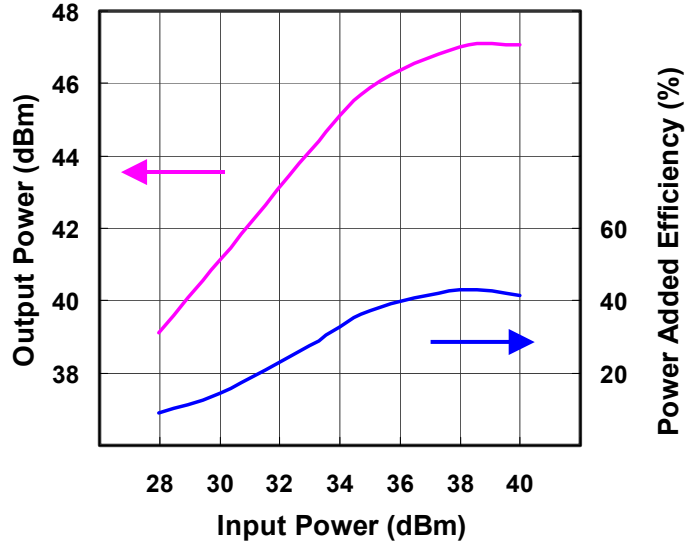
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POWER DERATING CURVE



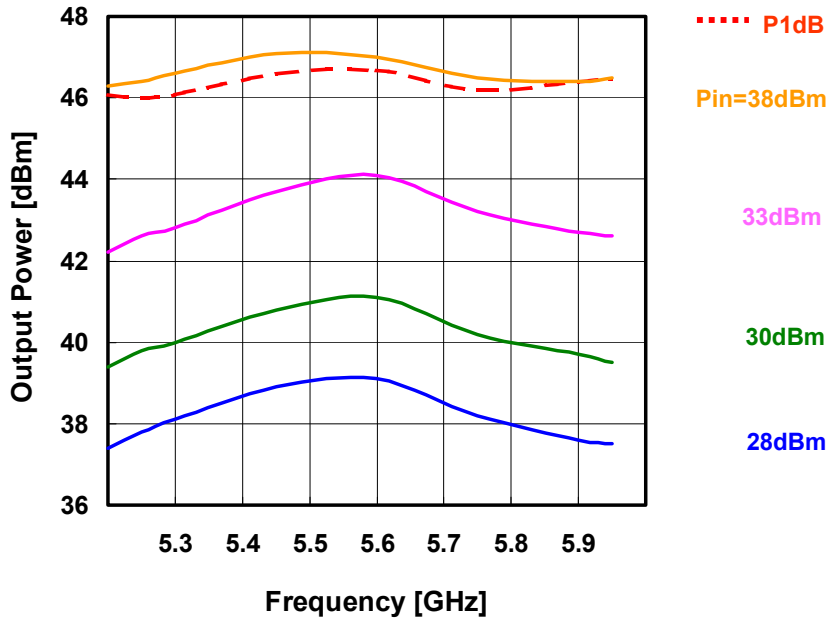
OUTPUT POWER & POWER ADDED EFFICIENCY vs INPUT POWER

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



OUTPUT POWER vs FREQUENCY

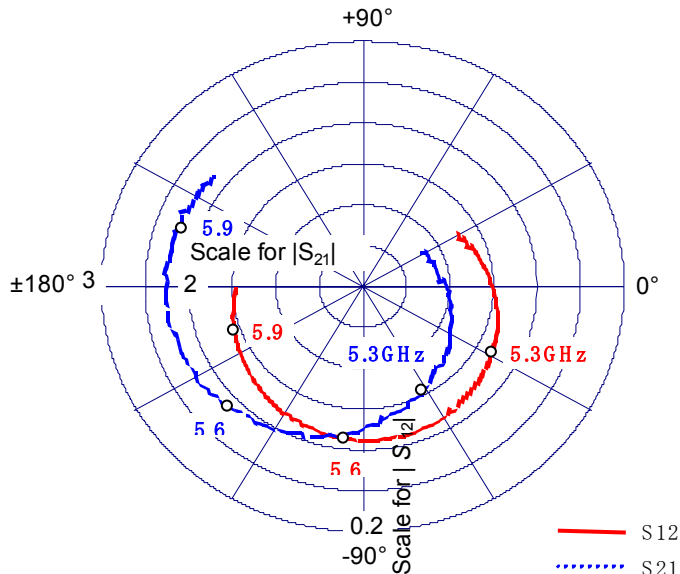
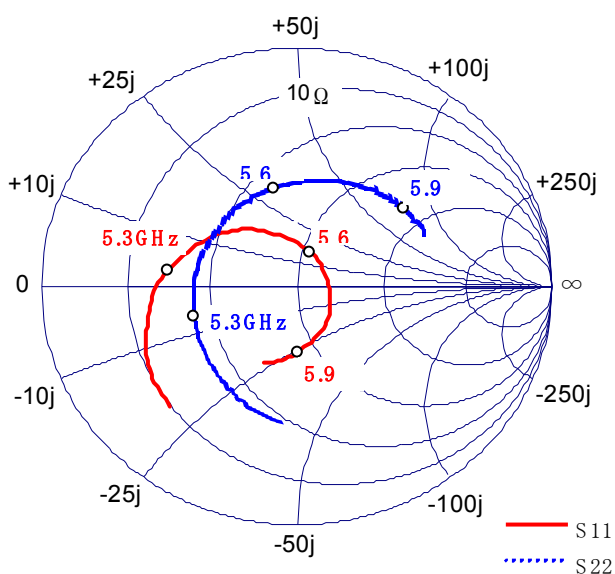
VDS=12V, IDS=8.0A



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## C-Band Internally Matched FET

### S-PARAMETER



VDS=12V, IDS=7.0A

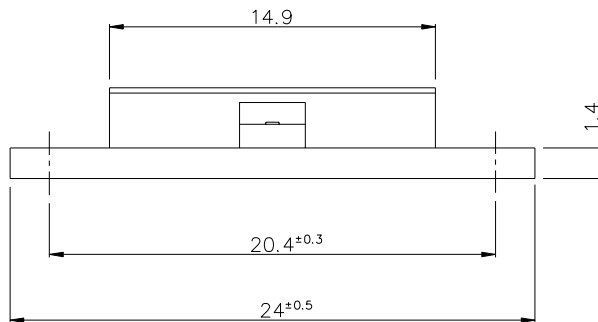
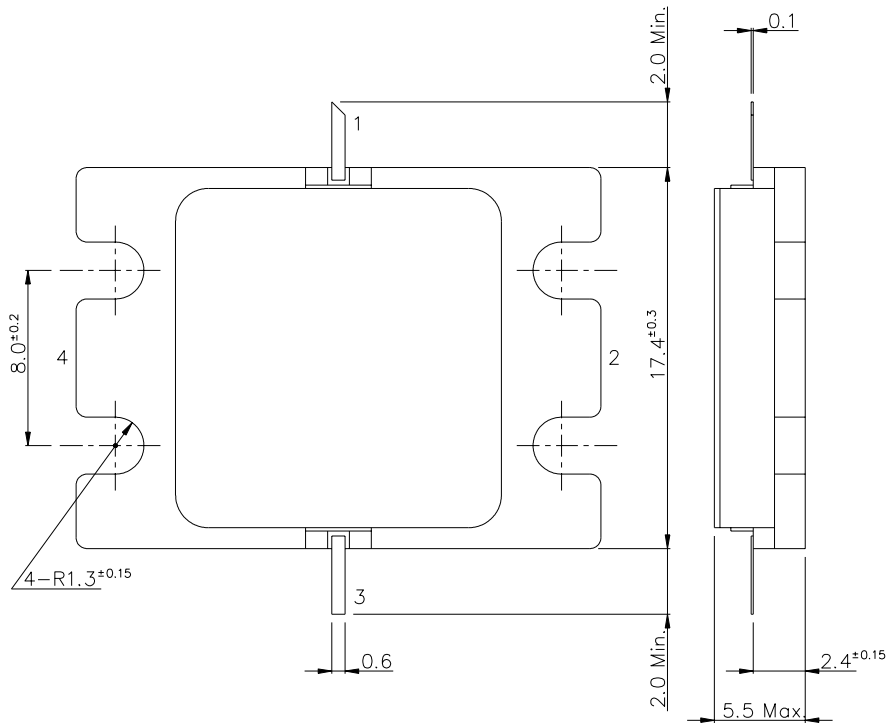
Freq. [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.1	0.668	-150.7	2.792	11.2	0.031	-1.5	0.528	-114.3
5.2	0.595	-168.2	3.083	-7.4	0.039	-31.3	0.470	-136.0
5.3	0.510	172.3	3.380	-28.3	0.048	-61.7	0.420	-162.5
5.4	0.391	148.1	3.652	-50.3	0.057	-86.5	0.395	166.1
5.5	0.268	119.3	3.773	-73.4	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

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## ■ Package Out Line

Case Style : IK



### PIN ASSIGNMENT

- 1 : GATE
- 2 : SOURCE
- 3 : DRAIN
- 4 : SOURCE

Unit : mm

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