

### FEATURES

- High Output Power:  $P_{1dB}=46.5\text{dBm(Typ.)}$
- High Gain:  $G_{1dB}=8.5\text{dB(Typ.)}$
- High PAE:  $\eta_{add}=36\%\text{(Typ.)}$
- Broad Band: 5.3 to 5.9GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- 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 50ohm system.

### ABSOLUTE MAXIMUM RATINGS (Case Temperature $T_c=25\text{deg.C}$ )

Item	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	15	V
Gate-Source Voltage	$V_{GS}$	-5	V
Total Power Dissipation	$P_T$	150	W
Storage Temperature	$T_{stg}$	-65 to +175	deg.C
Channel Temperature	$T_{ch}$	175	deg.C

### RECOMMENDED OPERATING CONDITION (Case Temperature $T_c=25\text{deg.C}$ )

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	$V_{DS}$		$\leq 12$	V
Forward Gate Current	$I_{GF}$	$R_G=13\text{ohm}$	$\leq 107.2$	mA
Reverse Gate Current	$I_{GR}$	$R_G=13\text{ohm}$	$\geq -23.2$	mA

### ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25\text{deg.C}$ )

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	$V_p$	$V_{DS}=5V, I_{DS}=960\text{mA}$	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-960\mu A$	-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.	$G_{1dB}$	$I_{DS}(\text{DC})=8.0A$ (typ.)	7.5	8.5	-	dB
Drain Current	$I_{dsr}$	$f= 5.3 \text{ to } 5.9 \text{ GHz}$	-	8.5	10.0	A
Power-Added Efficiency	$\eta_{add}$	$Z_s=Z_L=50 \text{ ohm}$	-	36	-	%
Gain Flatness	$\Delta G$		-	-	1.4	dB
Thermal Resistance	$R_{th}$	Channel to Case	-	0.8	1.0	deg.C/W
Channel Temperature Rise	$\Delta T_{ch}$	$12V \times I_{DS}(\text{DC}) \times R_{th}$	-	-	100	deg.C

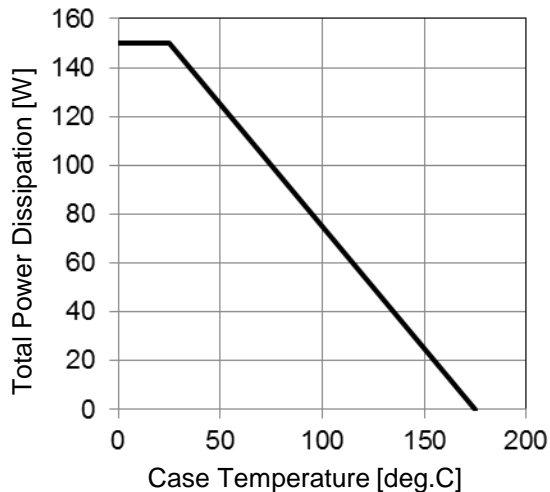
G.C.P.: Gain Compression Point

CASE STYLE	IK
ESD	Class 3A
	4000V to 8000V

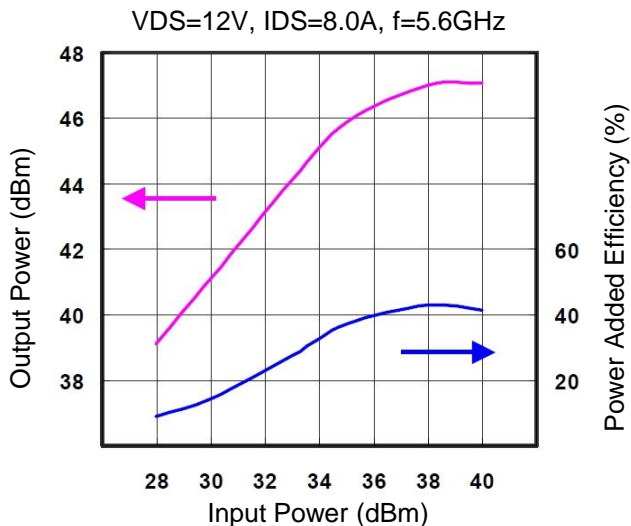
Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)

RoHS Compliance	Yes
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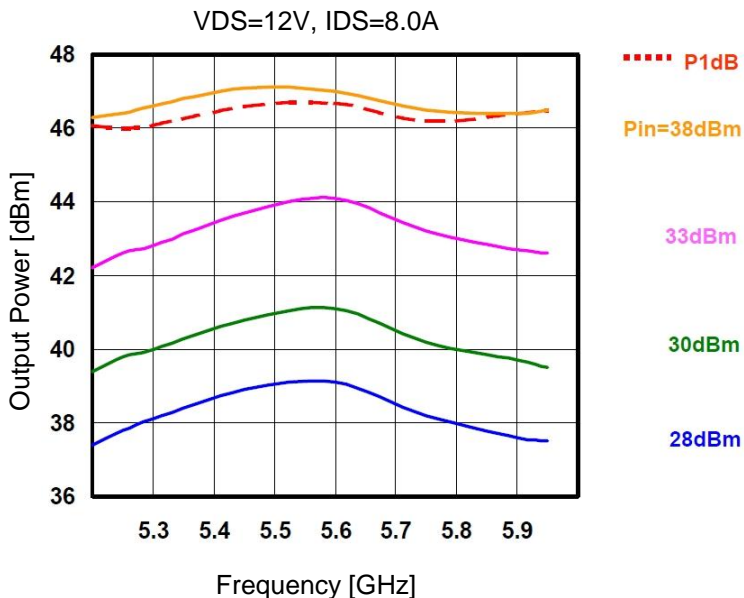
**POWER DERATING CURVE**



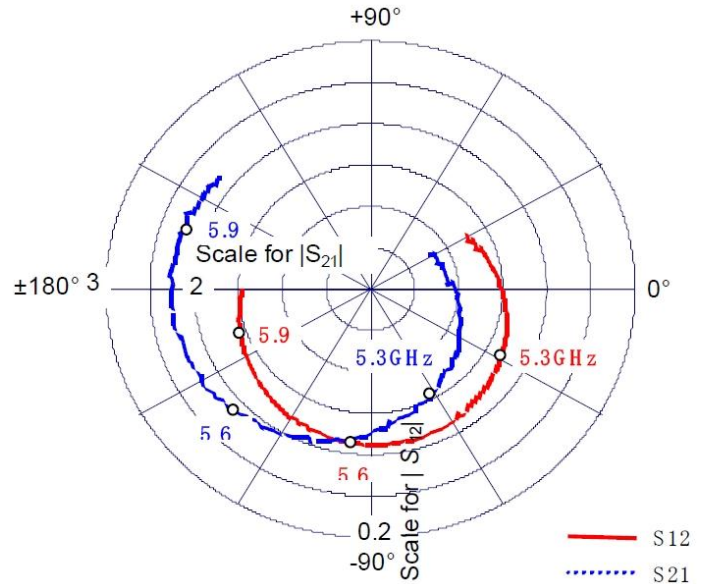
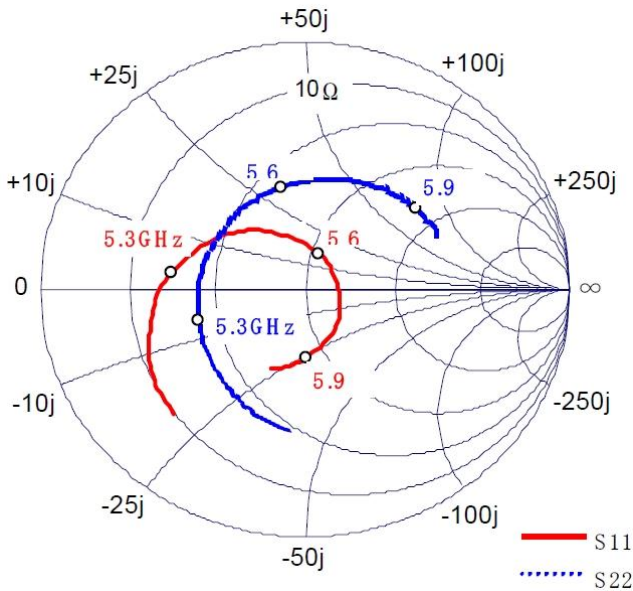
**OUTPUT POWER & POWER ADDED EFFICIENCY vs INPUT POWER**



**OUTPUT POWER vs FREQUENCY**



### S-PARAMETER

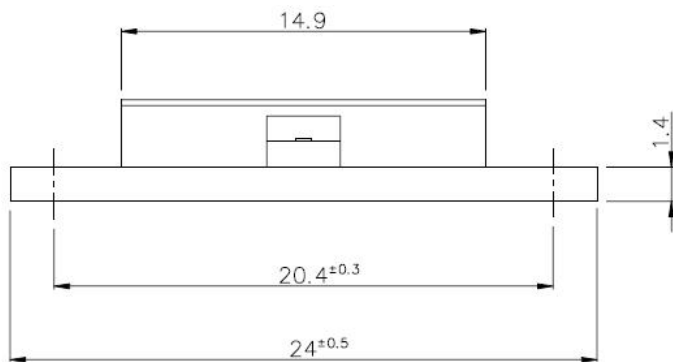
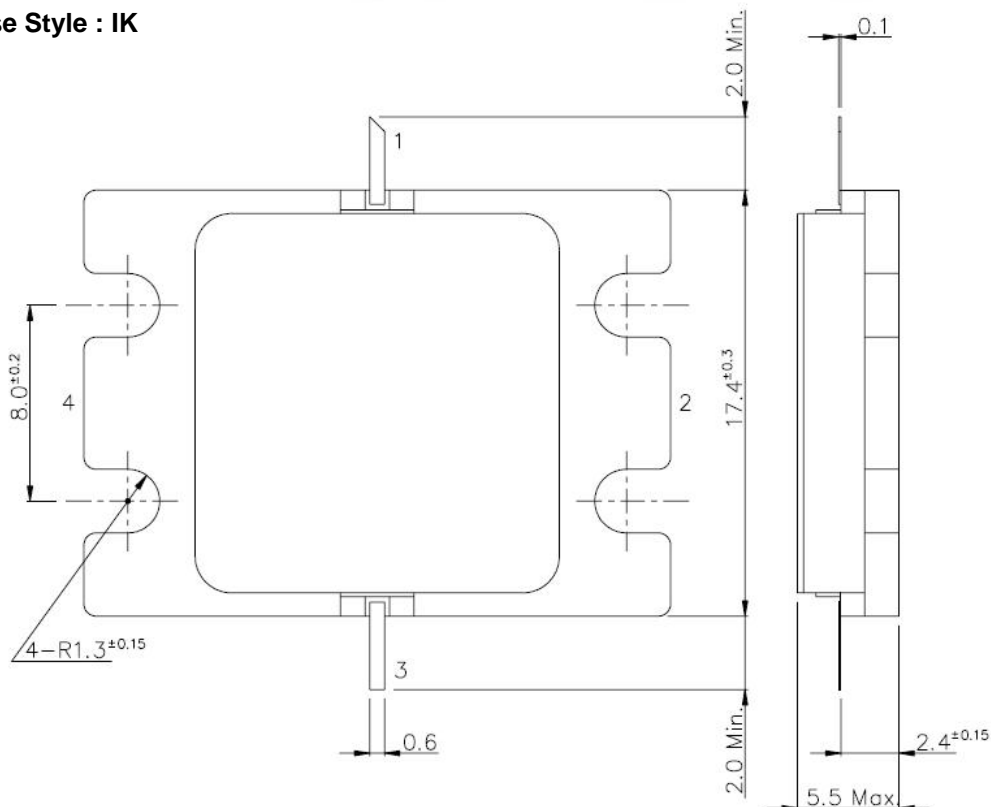


**VDS=12V, IDS=7.0A**

Freq. [GHz]	S11		S21		S12		S2	
	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



# **FLM5359-45F**

***C-Band Internally Matched FET***

**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.