

# FLM0910-25F

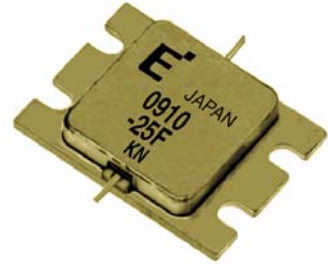
## X-Band Internally Matched FET

### FEATURES

- High Output Power: P1dB=44dBm(Typ.)
- High Gain: G1dB=7.0dB(Typ.)
- High PAE:  $\eta_{add}$ =30%(Typ.)
- Broad Band: 9.5~10.5GHz
- Impedance Matched Zin/Zout = 50  $\Omega$
- Hermetically Sealed Package

### DESCRIPTION

The FLM0910-25F 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>	93.7	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>		≤10	V
Forward Gate Current	I <sub>GF</sub>	R <sub>G</sub> =25 $\Omega$	≤64	mA
Reverse Gate Current	I <sub>GR</sub>	R <sub>G</sub> =25 $\Omega$	≥-11.2	mA

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

Item	Symbol	Test Conditions	Limit			Unit	
			Min.	Typ.	Max.		
Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V	-	10.8	16.2	A	
Transconductance	g <sub>m</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =6.48A	-	10	-	S	
Pinch-off Voltage	V <sub>p</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =600mA	-0.5	-1.5	-3.0	V	
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> =-600uA	-5.0	-	-	V	
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DS</sub> =10V f=9.5 - 10.5 GHz I <sub>DS</sub> =0.6I <sub>DSS</sub> Z <sub>S</sub> =Z <sub>L</sub> =50 $\Omega$	43.0	44.0	-	dBm	
Power Gain at 1dB G.C.P.	G <sub>1dB</sub>		6.0	7.0	-	dB	
Drain Current	I <sub>DSr</sub>		-	6.5	7.2	A	
Power-added Efficiency	$\eta_{add}$		-	30	-	%	
Gain Flatness	$\Delta G$		-	-	1.2	dB	
Thermal Resistance	R <sub>th</sub>		Channel to Case	-	1.4	1.6	°C/W
Channel Temperature Rise	$\Delta T_{ch}$		10V X I <sub>DSr</sub> 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  $\Omega$ )

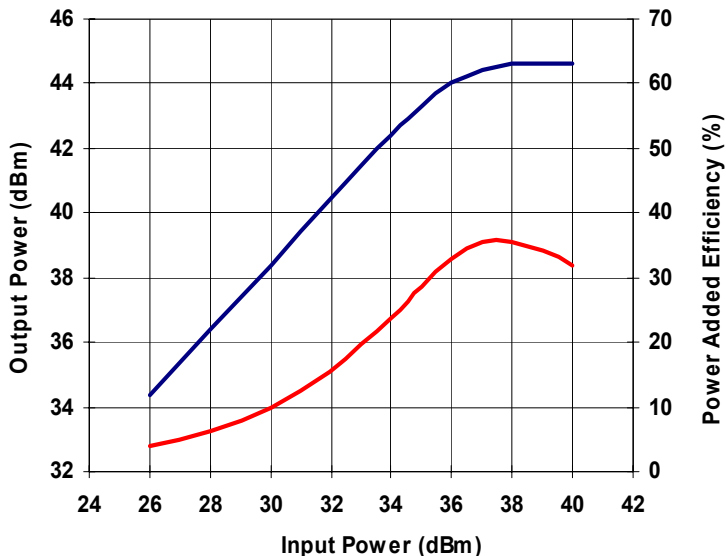
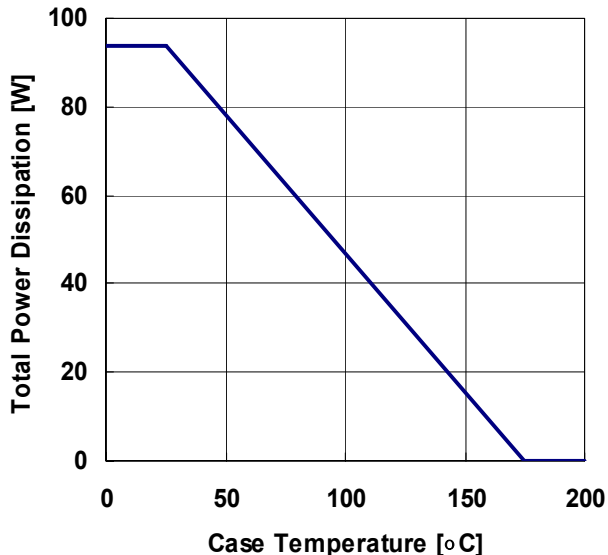
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## X-Band Internally Matched FET

### OUTPUT POWER & POWER ADDED EFFICIENCY vs. INPUT POWER

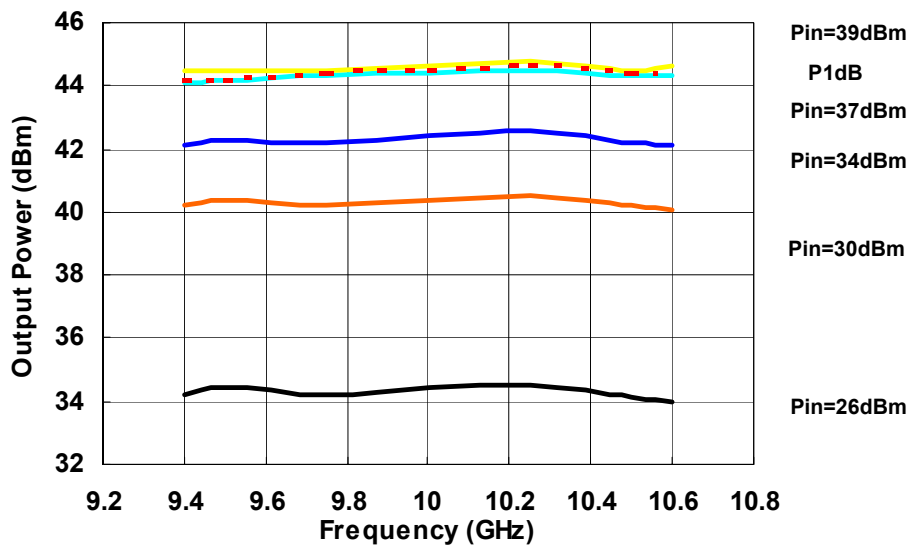
VDS=10V, IDS(DC)=0.60IDS, f=10.0GHz

### POWER DERATING CURVE



### OUTPUT POWER vs. FREQUENCY

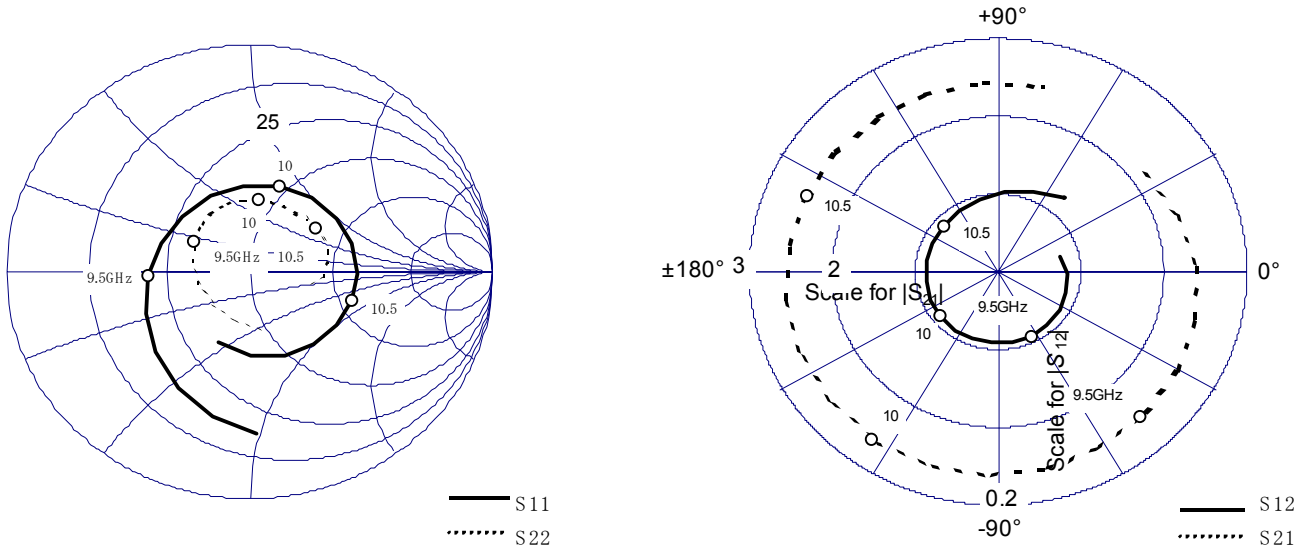
VDS=10V, IDS(DC)=0.60IDS



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## X-Band Internally Matched FET

### ■ S-PARAMETER



VDS=10V , IDS=0.6Idss

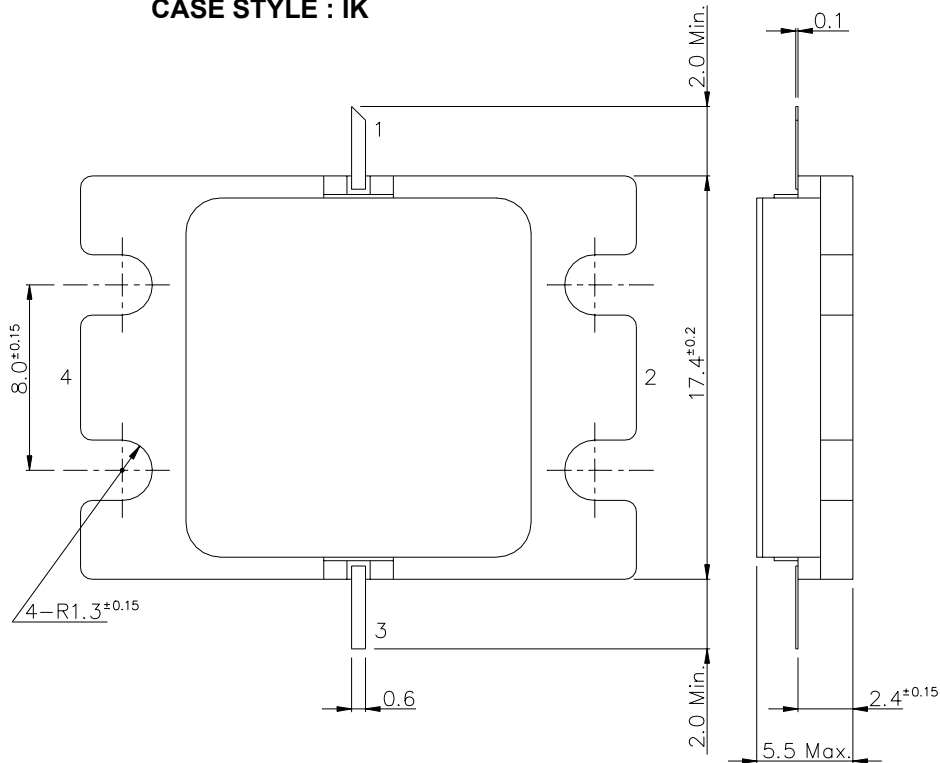
Freq [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
9	0.71	-88.02	2.15	35.09	0.05	15.25	0.26	-77.71
9.1	0.65	-103.53	2.29	18.28	0.06	-1.55	0.22	-107.05
9.2	0.59	-120.18	2.40	1.32	0.06	-17.77	0.21	-138.65
9.3	0.53	-138.00	2.47	-15.34	0.06	-34.01	0.22	-167.56
9.4	0.47	-156.97	2.51	-31.59	0.06	-49.64	0.24	168.82
9.5	0.42	-177.22	2.53	-47.33	0.06	-64.58	0.26	149.54
9.6	0.39	161.48	2.56	-62.74	0.06	-79.62	0.29	133.93
9.7	0.37	138.88	2.59	-78.13	0.06	-94.61	0.30	120.00
9.8	0.37	116.07	2.62	-93.65	0.06	-109.43	0.31	107.27
9.9	0.38	93.62	2.63	-109.43	0.06	-124.61	0.32	95.51
10	0.40	72.47	2.64	-125.14	0.06	-140.33	0.32	84.23
10.1	0.41	52.59	2.62	-140.95	0.06	-155.72	0.32	73.93
10.2	0.43	33.84	2.60	-156.81	0.06	-172.24	0.32	63.61
10.3	0.44	16.24	2.57	-172.15	0.06	171.03	0.32	54.33
10.4	0.44	-0.56	2.53	172.43	0.06	154.60	0.33	44.93
10.5	0.44	-17.05	2.50	156.88	0.06	137.92	0.33	35.26
10.6	0.43	-33.47	2.47	141.58	0.06	120.72	0.33	25.29
10.7	0.42	-50.45	2.44	126.23	0.06	103.61	0.33	15.68
10.8	0.40	-68.63	2.43	110.45	0.07	85.80	0.32	6.13
10.9	0.37	-89.03	2.43	94.22	0.07	68.12	0.30	-2.58
11	0.34	-113.11	2.42	77.32	0.08	50.38	0.27	-9.87

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## X-Band Internally Matched FET

### ■ Package Out Line

CASE STYLE : IK



Unit : mm

### PIN ASSIGMENT

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

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