



# FLM0910-15F

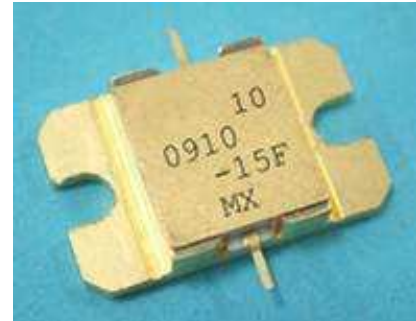
## X-Band Internally Matched FET

### FEATURES

- High Output Power: P1dB=42.0dBm(Typ.)
- High Gain: G1dB=7.5dB(Typ.)
- High PAE:  $\eta_{add}$ =32%(Typ.)
- Broad Band: 9.5 to10.5GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed Package

### DESCRIPTION

The FLM0910-15F 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 Tc=25deg.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>	57.7	W
Storage Temperature	T <sub>stg</sub>	-65 to +175	deg.C
Channel Temperature	T <sub>ch</sub>	175	deg.C

### RECOMMENDED OPERATING CONDITION (Case Temperature Tc=25deg.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> =50 ohm	≤16.7	mA
Reverse Gate Current	I <sub>GR</sub>	R <sub>G</sub> =50 ohm	≥-3.62	mA

### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25deg.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	-	7.2	10.8	A
Trans conductance	g <sub>m</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =3.5A	-	4500	-	mS
Pinch-off Voltage	V <sub>p</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =300mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> =-300uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DS</sub> =10V	41.0	42.0	-	dBm
Power Gain at 1dB G.C.P.	G <sub>1dB</sub>	I <sub>DS</sub> =0.5I <sub>DSS</sub> (typ.)	6.5	7.5	-	dB
Drain Current	I <sub>DSR</sub>	f= 9.5 ~ 10.5 GHz	-	4.0	5.0	A
Power-added Efficiency	η <sub>add</sub>	Z <sub>S</sub> =Z <sub>L</sub> =50 ohm	-	32	-	%
Gain Flatness	ΔG		-	-	1.2	dB
Thermal Resistance	R <sub>th</sub>	Channel to Case	-	2.3	2.6	deg.C/W
Channel Temperature Rise	ΔT <sub>ch</sub>	10V x I <sub>DSR</sub> X R <sub>th</sub>	-	-	100	deg.C

### CASE STYLE : IB

G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

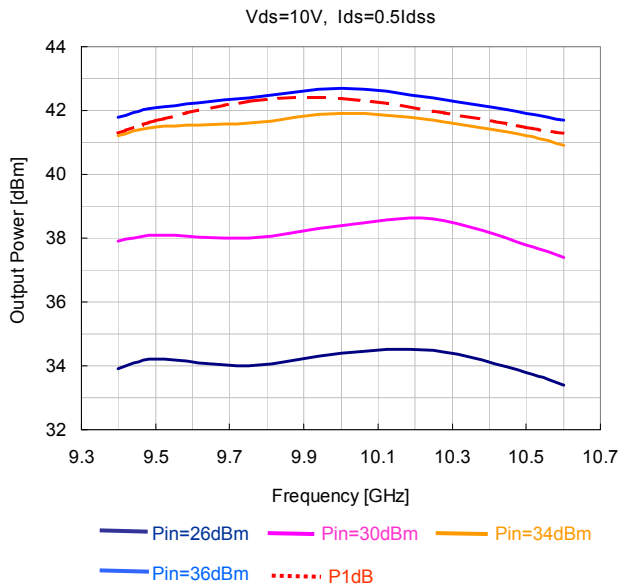
ESD	Class 3A	4000V to 8000V
Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kohm)		
RoHS COMPLIANCE	Yes	



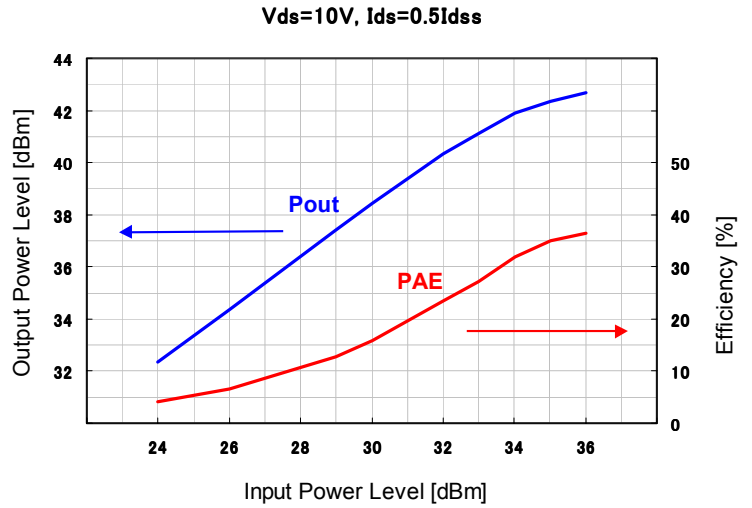
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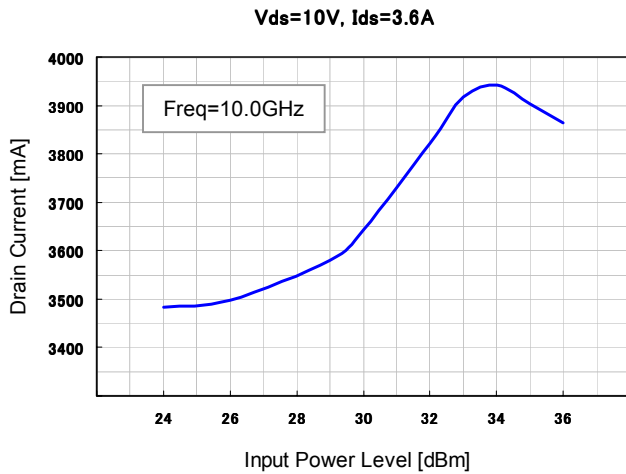
### OUTPUT POWER v.s. FREQUENCY



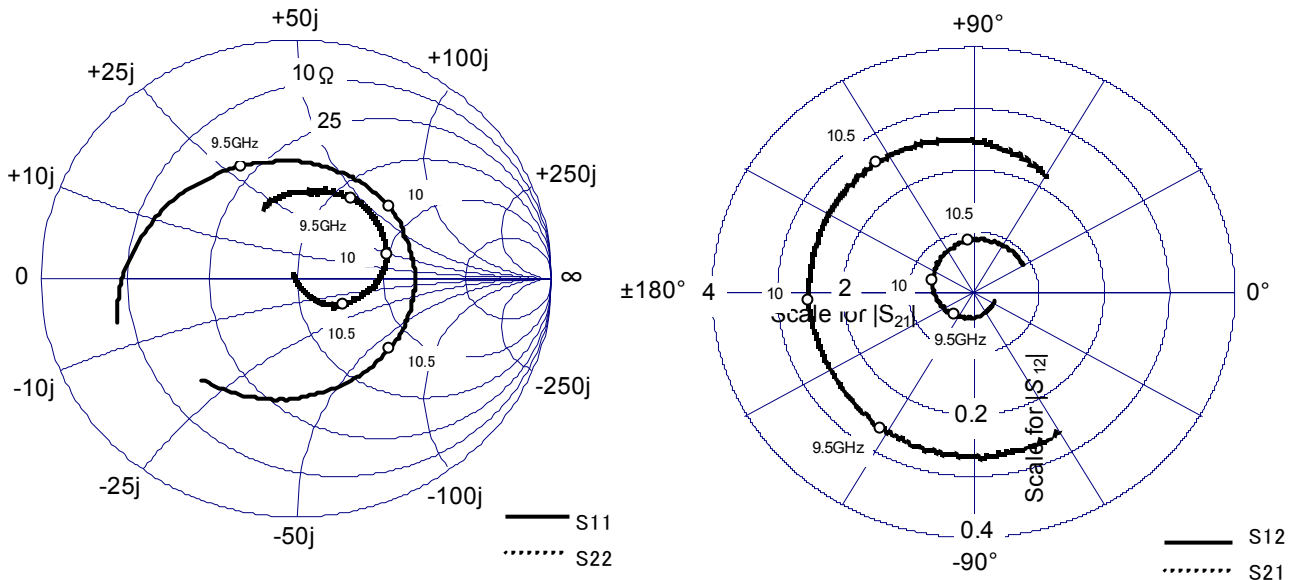
### OUTPUT POWER, POWER ADDED EFFICIENCY v.s. INPUT POWER



### DRAIN CURRENT v.s. INPUT POWER



### ■ S-PARAMETERS



$V_{DS}=10.0V$  ,  $I_{DS}=0.5I_{DSS}$

Freq. [GHz]	S11		S21		S12		S22	
	mag	ang	mag	ang	mag	ang	mag	ang
9.3	0.589	147.4	2.678	-98.7	0.041	-88.1	0.374	77.2
9.4	0.544	130.9	2.649	-111.1	0.043	-107.6	0.387	67.0
9.5	0.520	114.6	2.618	-122.5	0.046	-127.3	0.397	57.8
9.6	0.498	98.6	2.569	-134.0	0.049	-141.0	0.401	49.7
9.7	0.488	83.8	2.538	-144.9	0.054	-155.7	0.396	41.6
9.8	0.477	68.8	2.524	-155.2	0.059	-169.5	0.390	33.1
9.9	0.474	54.6	2.509	-165.9	0.061	177.5	0.380	24.6
10.0	0.471	39.4	2.524	-176.9	0.066	163.5	0.368	15.6
10.1	0.467	25.4	2.514	172.4	0.069	149.1	0.349	7.1
10.2	0.462	10.4	2.519	161.2	0.073	136.4	0.321	-1.2
10.3	0.463	-4.6	2.553	150.2	0.077	121.6	0.290	-10.1
10.4	0.468	-21.7	2.563	137.9	0.083	109.8	0.250	-20.5
10.5	0.469	-39.2	2.591	125.3	0.085	95.4	0.215	-30.7
10.6	0.478	-58.6	2.554	112.4	0.088	84.0	0.174	-40.2
10.7	0.488	-77.5	2.514	98.8	0.090	69.4	0.126	-48.5

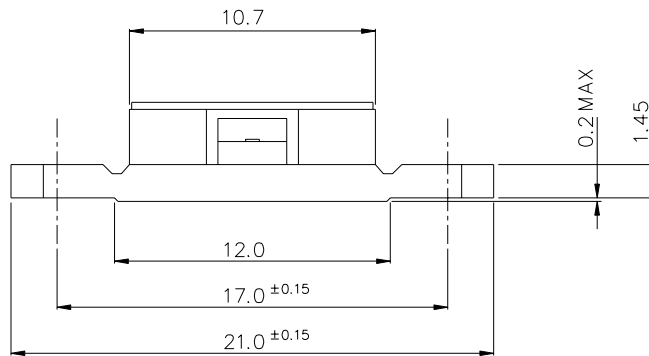
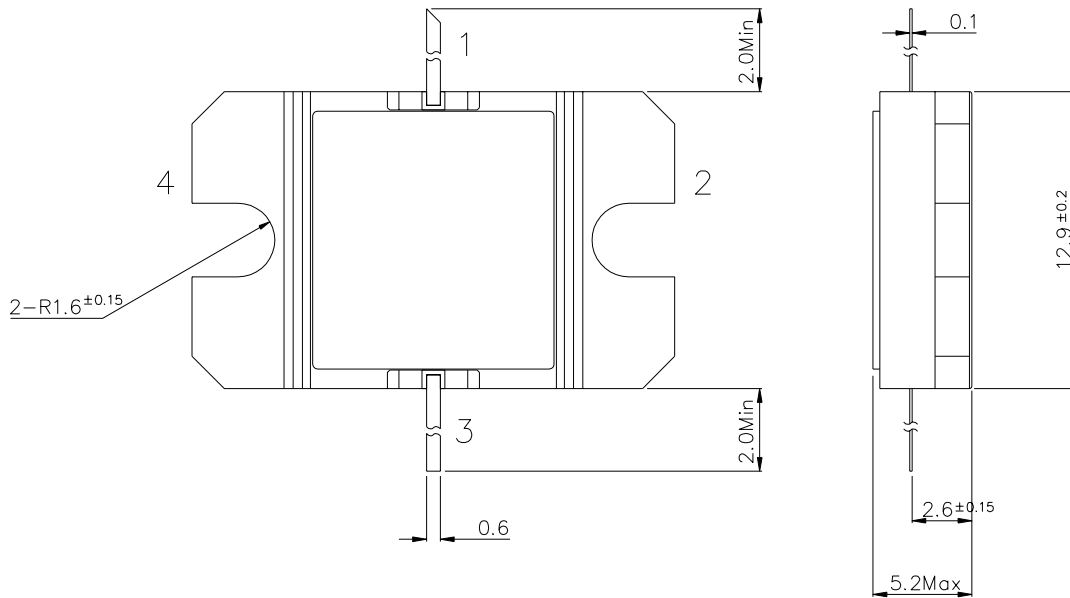


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■ Package Out Line

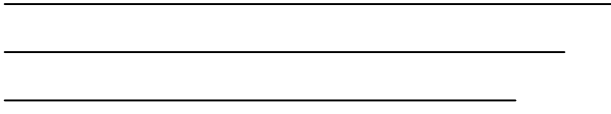
Case Style : IB



Unit : mm

PIN ASSIGNMENT

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



## **FLM0910-15F**

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**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.