

FLM0910-15F

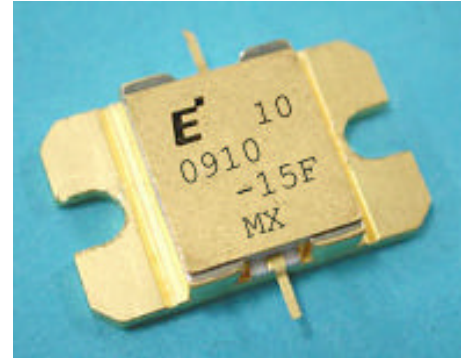
X-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB}=42.0dBm(Typ.)
- High Gain: G_{1dB}=7.5dB(Typ.)
- High PAE: η_{add} =32%(Typ.)
- Broad Band: 9.5~10.5GHz
- Impedance Matched Z_{in}/Z_{out} = 50 Ω
- 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 50 Ω system.



ABSOLUTE MAXIMUM RATINGS (Case Temperature T_c=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	57.7	W
Storage Temperature	T _{stg}	-65 to +175	°C
Channel Temperature	T _{ch}	175	°C

RECOMMENDED OPERATING CONDITION (Case Temperature T_c=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V _{DS}		10	V
Forward Gate Current	I _{GF}	R _G =50 ohm	16.7	mA
Reverse Gate Current	I _{GR}	R _G =50 ohm	-3.62	mA

ELECTRICAL CHARACTERISTICS (Case Temperature T_c=25°C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	7.2	10.8	A
Trans conductance	g _m	V _{DS} =5V, I _D =3.5A	-	4500	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _D =300mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-300uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V I _D =0.5I _{DSS} (typ.) f= 9.5 ~ 10.5 GHz Z _S =Z _L =50 ohm	41.0	42.0	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		6.5	7.5	-	dB
Drain Current	I _{DSR}		-	4.0	5.0	A
Power-added Efficiency	η_{add}		-	32	-	%
Gain Flatness	ΔG		-	-	1.2	dB
Thermal Resistance	R _{th}	Channel to Case	-	2.3	2.6	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I _{DSR} X R _{th}	-	-	100	°C

CASE STYLE : IB

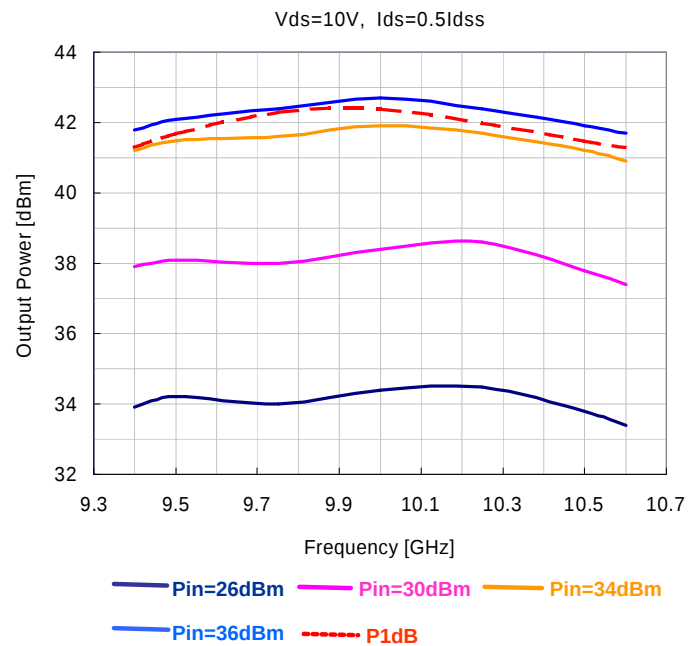
G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

ESD	Class III	2000V ~
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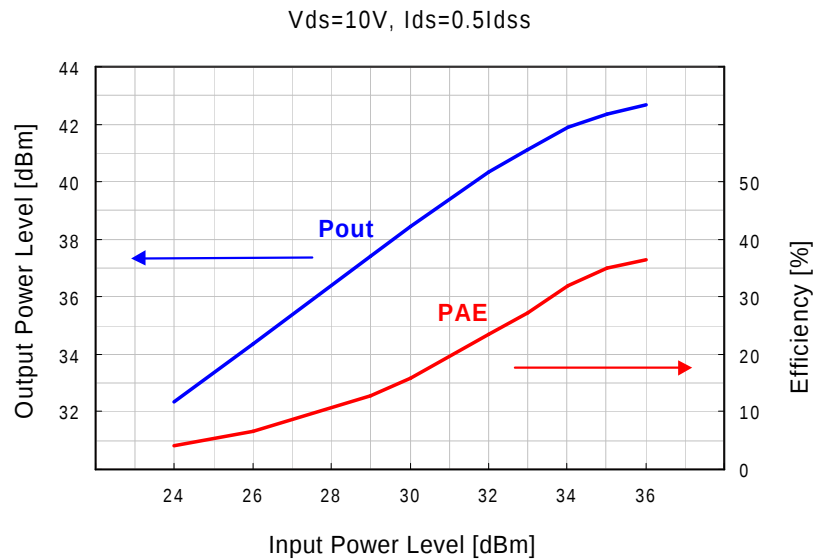
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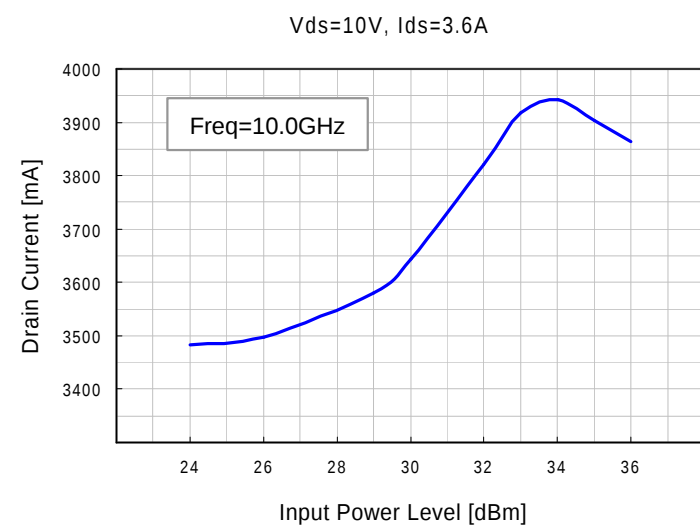
OUTPUT POWER v.s. FREQUENCY



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



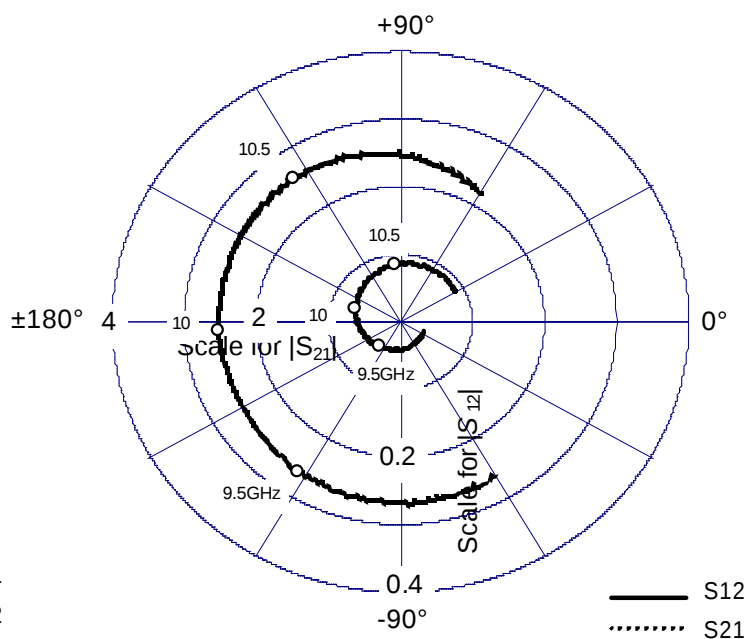
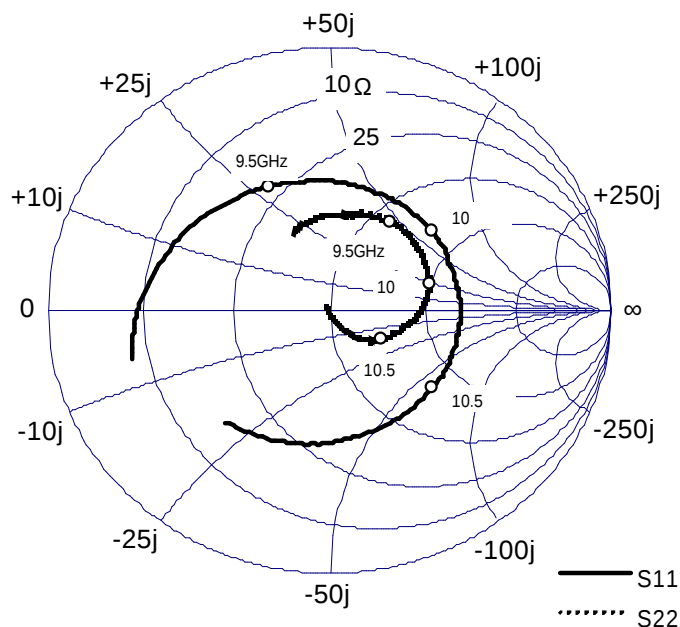
DRAIN CURRENT v.s. INPUT POWER



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■ S-PARAMETERS



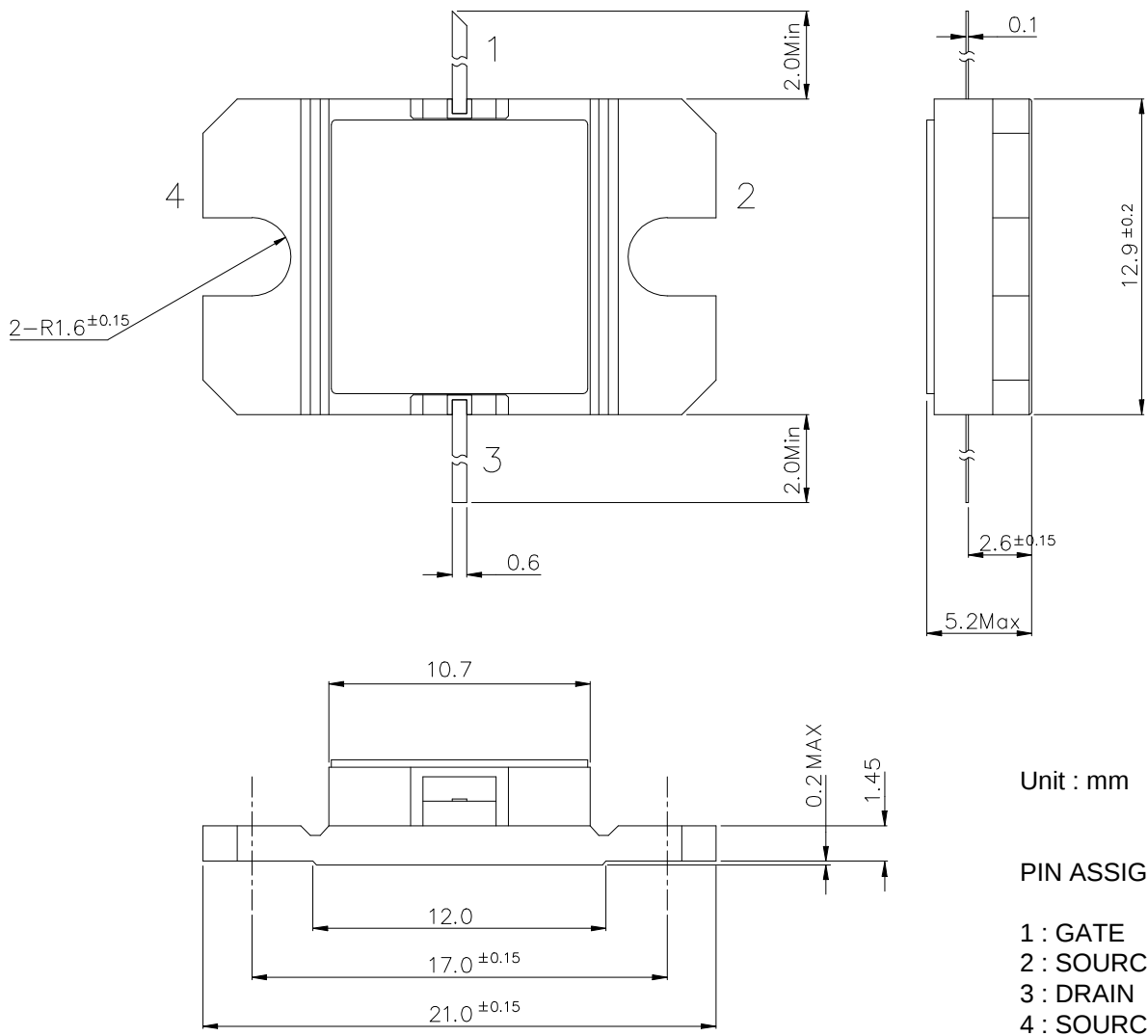
$V_{DS}=10.0V$, $I_{DS}=0.5I_{DSS}$

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

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For further information please contact :

Eudyna Devices USA Inc.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
Phone: (408) 232-9500
FAX: (408) 428-9111
www.fcsi.fujitsu.com

Eudyna Devices Europe Ltd.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
Phone: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

Eudyna Devices Asia Pte. Ltd. Hong Kong Branch

Rm.1906B, 19/F, Tower 6, China Hong Kong City,
33 Canton Road,
Tsim Sha Tsui, Kowloon,
Hong Kong
Tel: (852) 2377-0227
Fax: (852) 2377-3921

Eudyna Devices International s.r.l

Via Teglio 8/2-20158 Milano Italy
TEL:+39-02-8738-1695

Eudyna Devices Inc.

1000 Kamisukiahara, showa-cho, Nakakomagun, Yamanashi
409-3883, Japan
(Kokubo Industrial Park)
Tel +81-55-275-4411
Fax +81-55-275-9461

Sales Division

1, Kanai-cho, Sakae-ku, Yokohama, 244-0845, Japan
Tel +81-45-853-8156
Fax +81-45-853-8170

CAUTION

Eudyna Devices Compound Semiconductor Products contain **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.

