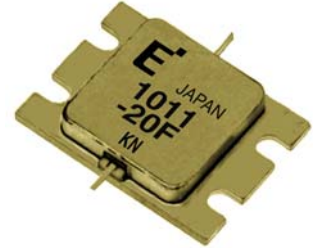


FLM1011-20F

X,Ku-Band Internally Matched FET

FEATURES

- High Output Power: P1dB=43.0dBm(Typ.)
- High Gain: G1dB=7.0dB(Typ.)
- High PAE: $\eta_{add}=27\%$ (Typ.)
- Broad Band: 10.7 ~ 11.7GHz
- Impedance Matched Zin/Zout = 50 Ω
- Hermetically Sealed Package



DESCRIPTION

The FLM1011-20F 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 Tc=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	93.7	W
Storage Temperature	T _{stg}	-65 to +175	°C
Channel Temperature	T _{ch}	175	°C

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

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V _{DS}		≤10	V
Forward Gate Current	I _{GF}	R _G =25 Ω	≤64	mA
Reverse Gate Current	I _{GR}	R _G =25 Ω	≥-11.2	mA

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	10.8	16.2	A
Transconductance	g _m	V _{DS} =5V, I _{DS} =6480mA	-	10	-	S
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =600mA	-0.5	-1.5	-3.0	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-600 μ A	-5.0	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V f=10.7 - 11.7 GHz I _{DS} =0.60I _{DSS} (typ) Z _s =Z _L =50 Ω	42	43	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		6.0	7.0	-	dB
Drain Current	I _{dsr}		-	6.0	7.2	A
Power-added Efficiency	η_{add}		-	27	-	%
Gain Flatness	Δ G		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM ₃	f= 11.7 GHz Δ f=10MHz, 2-tone Test P _{out} =31.0dBm (S.C.L.)	-42.0	-45.0	-	dBc
Thermal Resistance	R _{th}	Channel to Case	-	1.4	1.6	°C/W
Channel Temperature Rise	Δ T _{ch}	10V x I _{dsr} X R _{th}	-	-	100	°C

CASE STYLE: IK

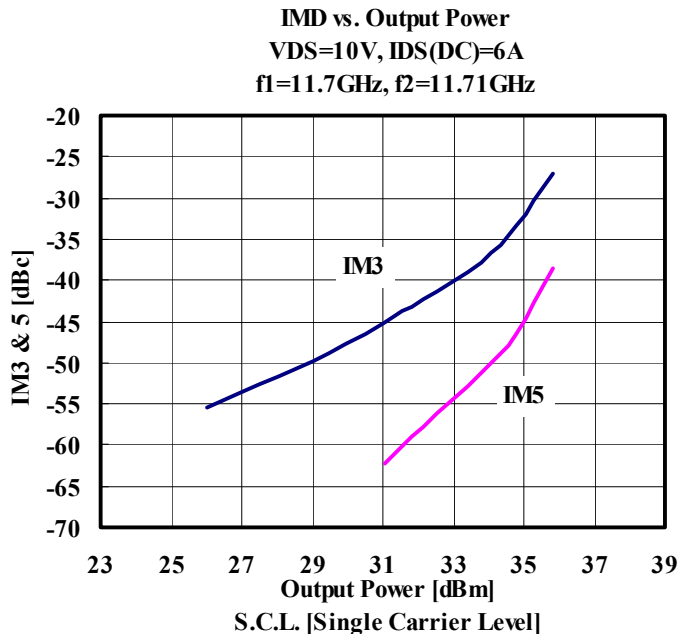
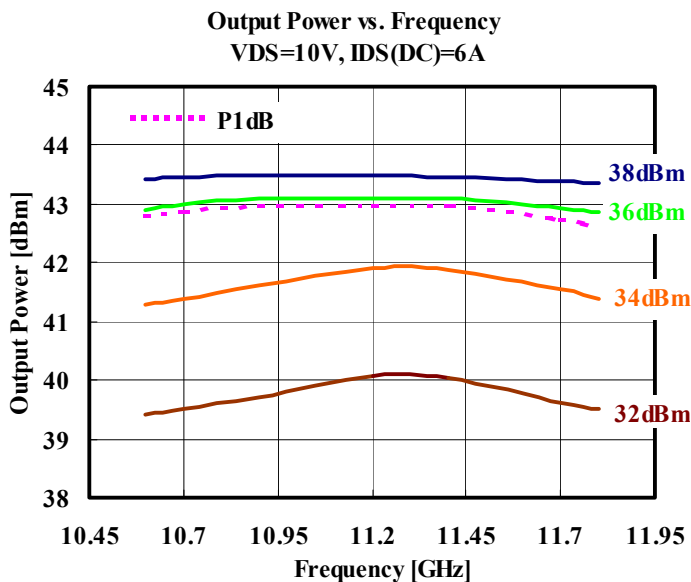
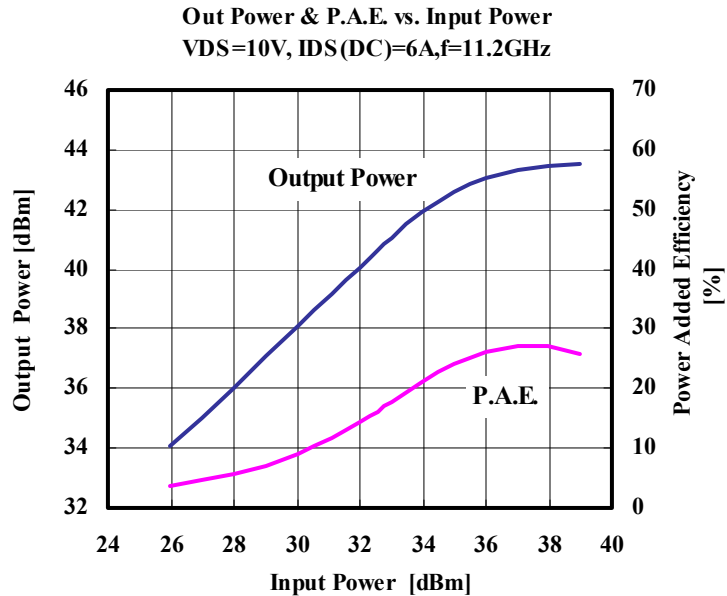
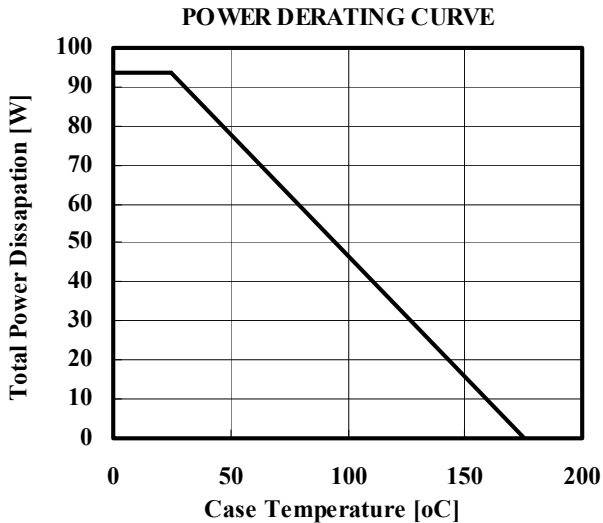
G.C.P.:Gain Compression Point, S.C.L.:Single Carrier Level

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

FLM1011-20F

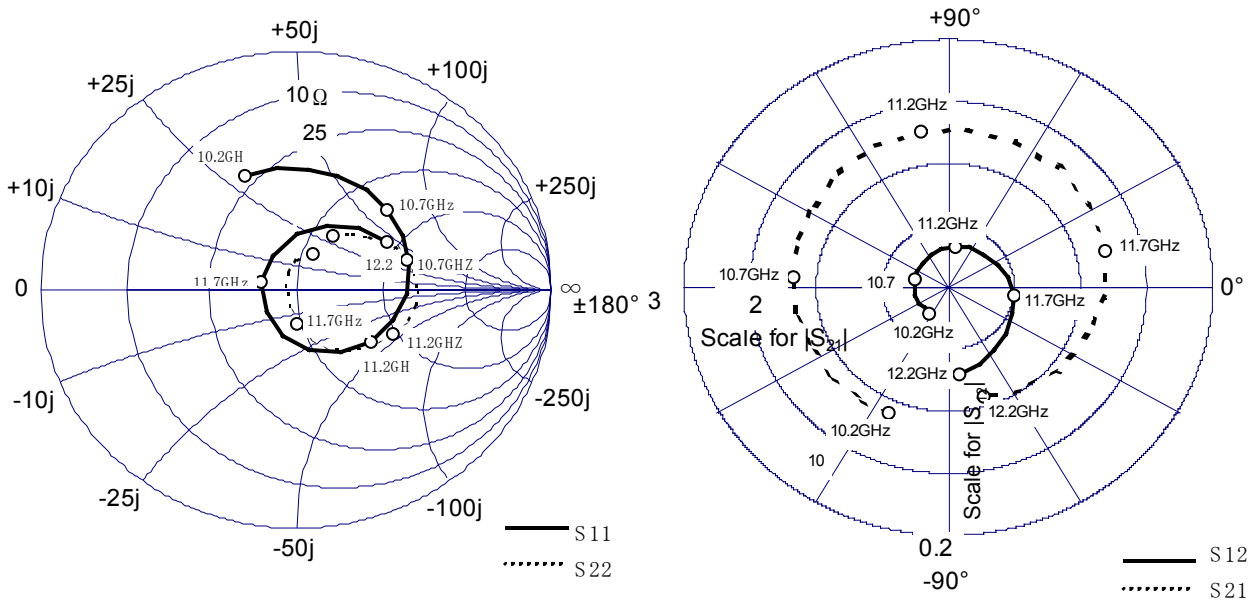
X-Band Internally Matched FET



FLM1011-20F

X-Band Internally Matched FET

■ S-PARAMETER



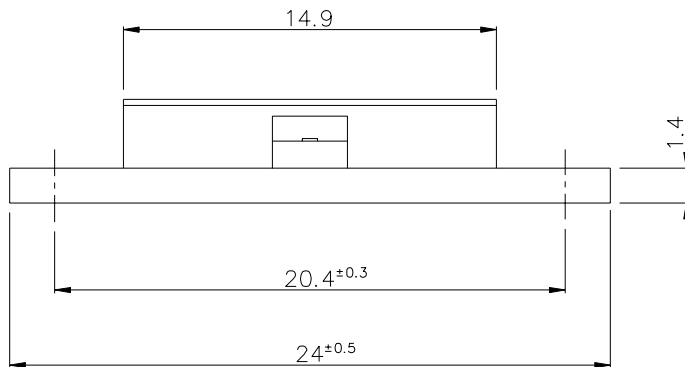
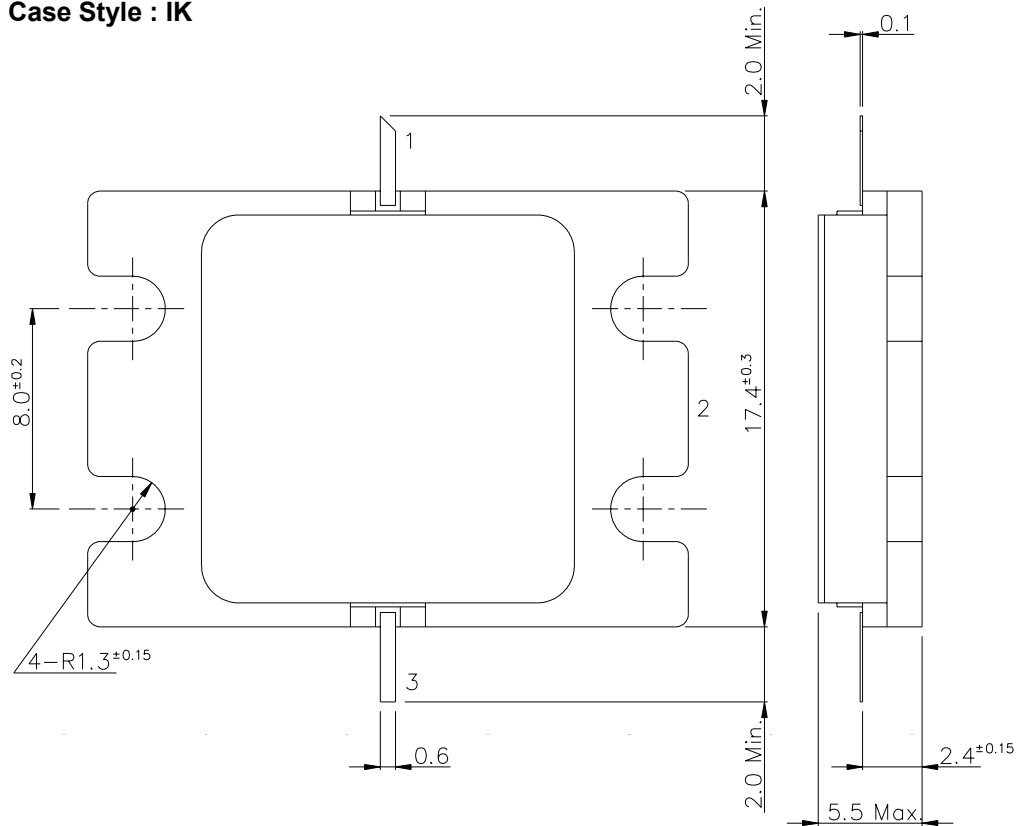
VDS=10V, IDS(DC)=6.0A

Freq. [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10.2	0.521	112.49	2.228	-113.83	0.051	-125.01	0.267	57.91
10.3	0.516	98.68	2.263	-127.73	0.050	-136.72	0.316	47.11
10.4	0.508	84.31	2.281	-141.96	0.051	-150.92	0.366	37.85
10.5	0.503	70.95	2.301	-156.16	0.051	-165.30	0.408	30.57
10.6	0.500	56.68	2.334	-170.00	0.052	-178.71	0.436	23.88
10.7	0.489	43.24	2.356	175.80	0.053	165.80	0.449	16.49
10.8	0.479	28.27	2.406	161.30	0.054	150.63	0.459	8.08
10.9	0.456	13.87	2.450	146.67	0.055	133.33	0.469	-0.73
11	0.436	-2.48	2.488	131.08	0.058	116.65	0.469	-9.20
11.1	0.399	-18.79	2.519	115.49	0.062	99.59	0.457	-17.21
11.2	0.362	-36.36	2.542	99.63	0.065	80.88	0.421	-26.15
11.3	0.310	-55.88	2.560	83.45	0.072	63.06	0.377	-36.80
11.4	0.258	-77.82	2.566	66.63	0.076	45.29	0.328	-49.42
11.5	0.196	-105.52	2.556	49.29	0.084	26.43	0.277	-62.34
11.6	0.148	-141.44	2.518	31.92	0.091	9.71	0.218	-74.53
11.7	0.138	166.07	2.452	14.11	0.100	-7.99	0.143	-88.71
11.8	0.171	121.58	2.366	-3.80	0.105	-24.24	0.071	-115.34
11.9	0.236	89.39	2.251	-21.35	0.115	-40.28	0.047	162.88
12	0.296	65.33	2.117	-39.04	0.123	-55.69	0.083	113.81
12.1	0.358	46.14	1.983	-56.37	0.131	-69.11	0.122	87.31
12.2	0.407	29.27	1.843	-72.76	0.140	-82.75	0.167	66.62

FLM1011-20F

X-Band Internally Matched FET

■ Package Out Line
Case Style : IK



PIN ASSIGNMENT

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

Unit : mm

FLM1011-20F

X-Band Internally Matched FET

For further information please contact :

CAUTION

Eudyna Devices Inc. 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.

Eudyna Devices USA Inc.

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

Eudyna Devices Europe Ltd.

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

Eudyna Devices Asia Pte. Ltd.

Hong Kong Branch
Rm.1101, Ocean Centre, 5 Canton Road
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

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

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