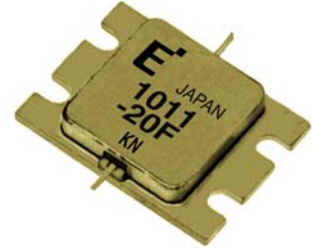


FLM1011-20F

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

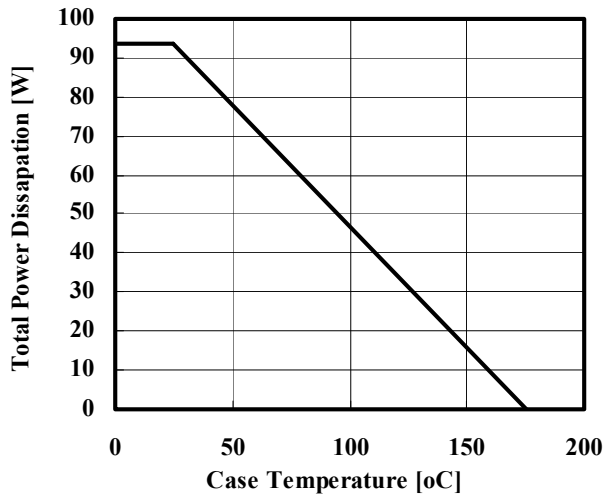
ESD	Class III	2000V ~
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Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5kW)

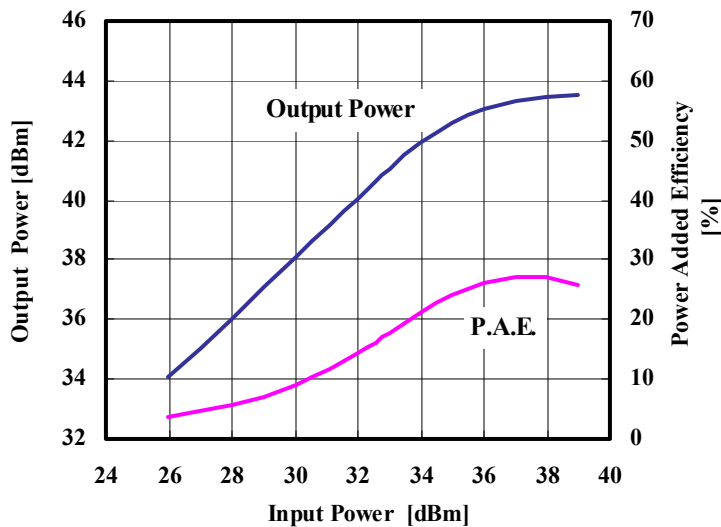
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X-Band Internally Matched FET

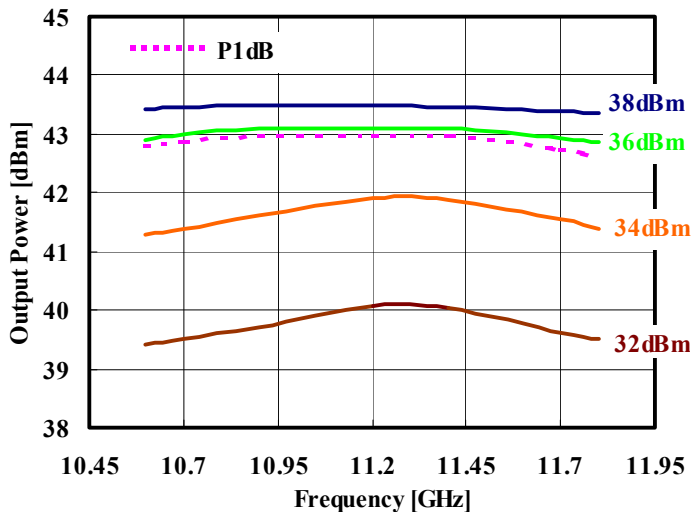
POWER DERATING CURVE



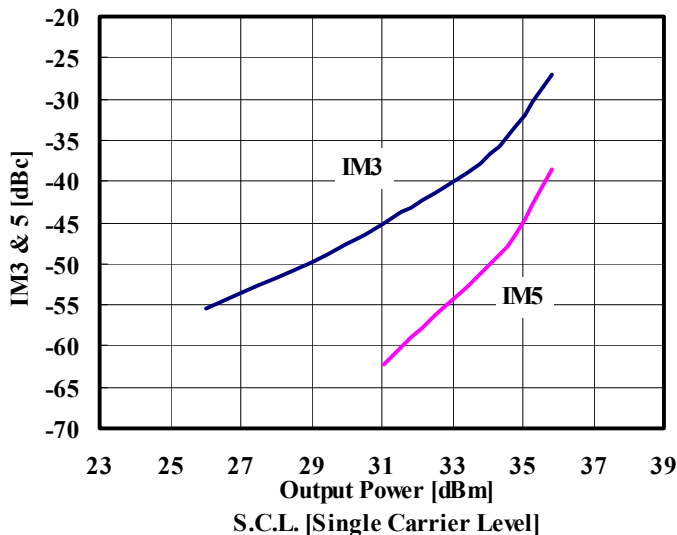
Out Power & P.A.E. vs. Input Power
VDS=10V, IDS(DC)=6A, f=11.2GHz



Output Power vs. Frequency
VDS=10V, IDS(DC)=6A



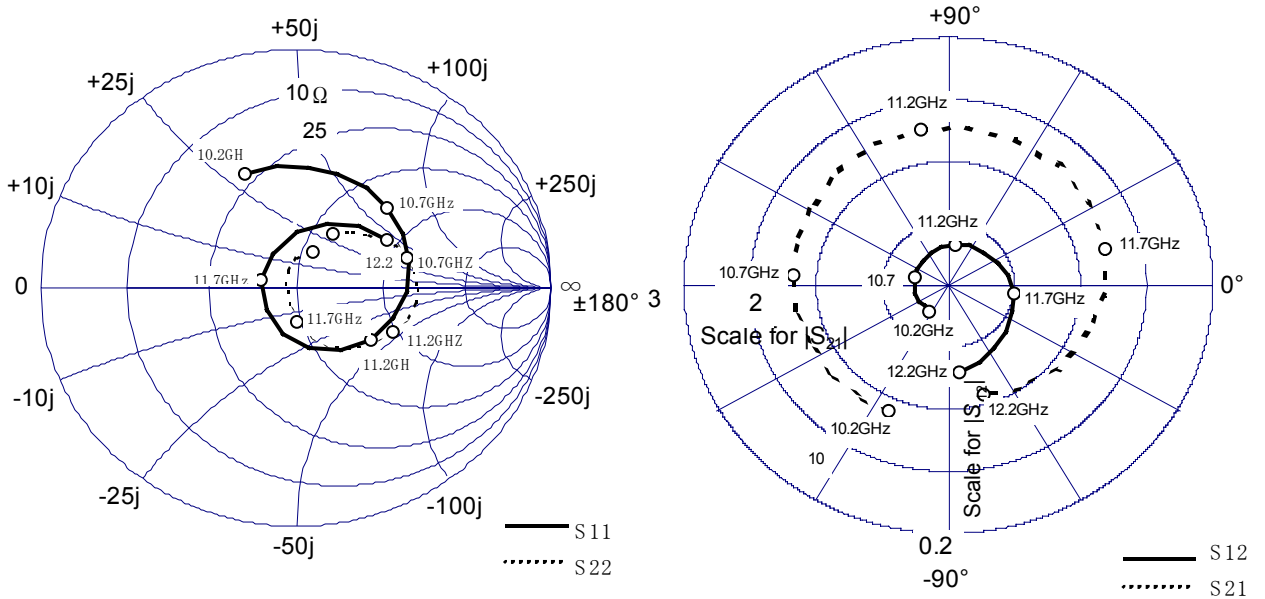
IMD vs. Output Power
VDS=10V, IDS(DC)=6A
f1=11.7GHz, f2=11.71GHz



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X-Band Internally Matched FET

■ S-PARAMETER



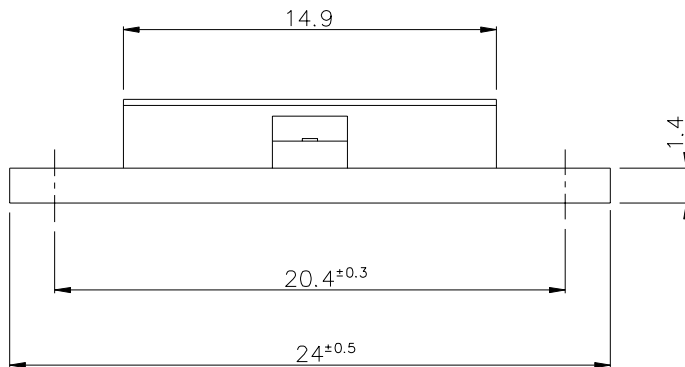
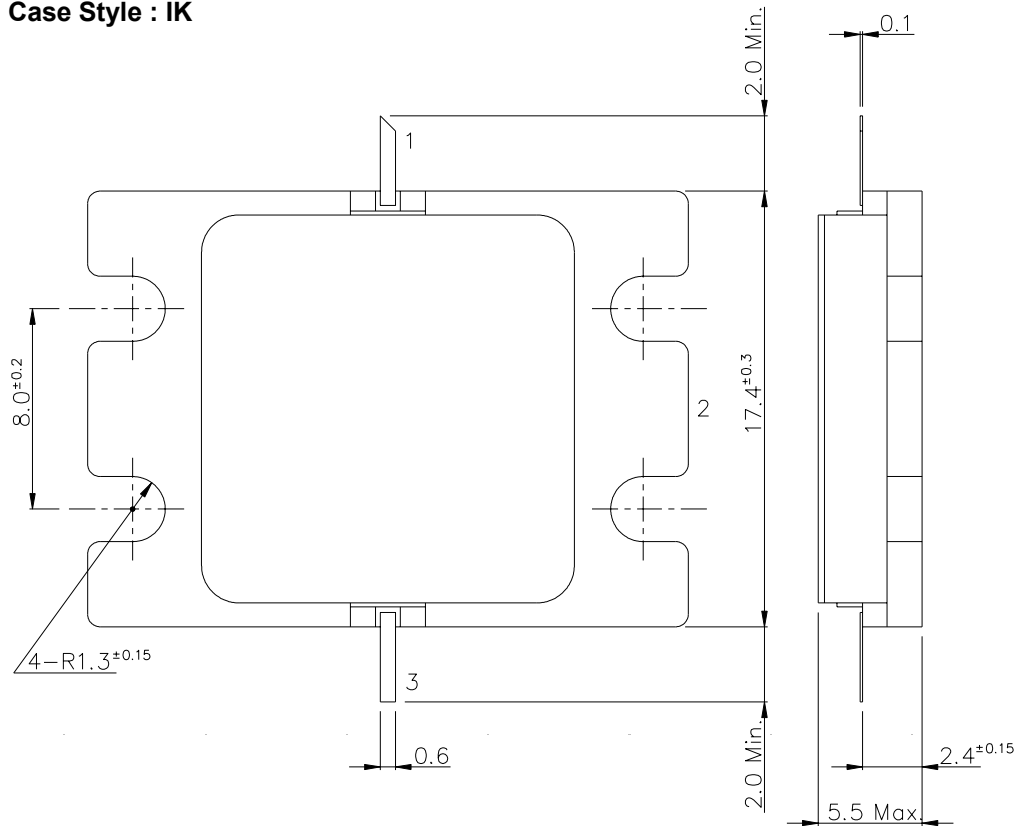
VDS=10V, IDS(DC)=6.0A

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

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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.

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