

■ Features

- High Output Power: P1dB=42.0dBm(Typ.)
- High Gain: G1dB=7.0dB(Typ.)
- High Power Added Efficiency: PAE=31%(Typ.)
- Broad Band: 10.7 to 11.7GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed Package

■ Description

The FLM1011-15F 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 RATING (Case Temperature T_c=25 deg.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	deg.C
Channel Temperature	T _{ch}	175	deg.C

RECOMMENDED OPERATING CONDITION (Case Temperature T_c=25 deg.C)

Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	V _{DS}		<=10	V
Forward Gate Current	I _{GF}	Rg=50ohm	<=16.7	mA
Reverse Gate Current	I _{GR}	Rg=50ohm	>=-3.62	mA

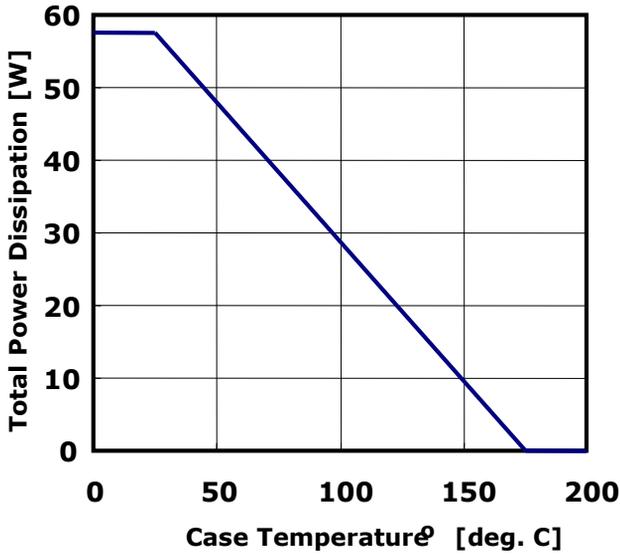
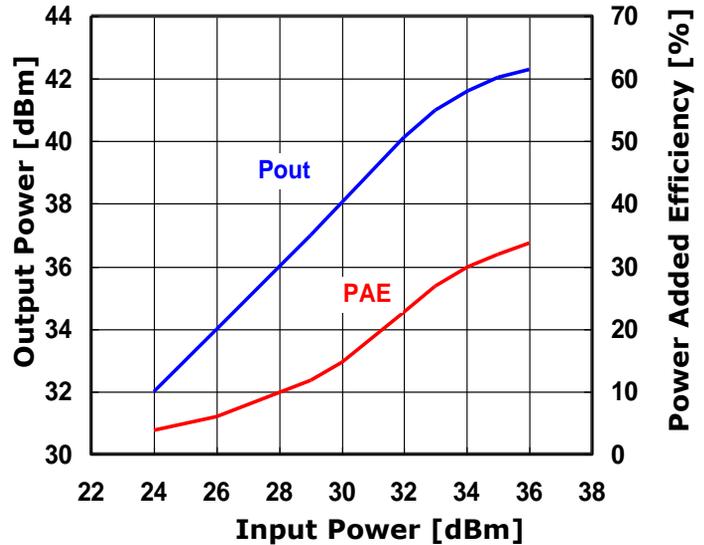
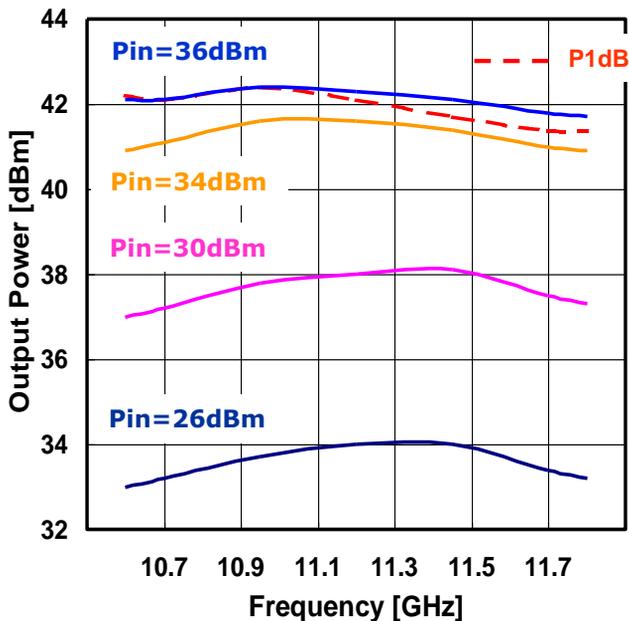
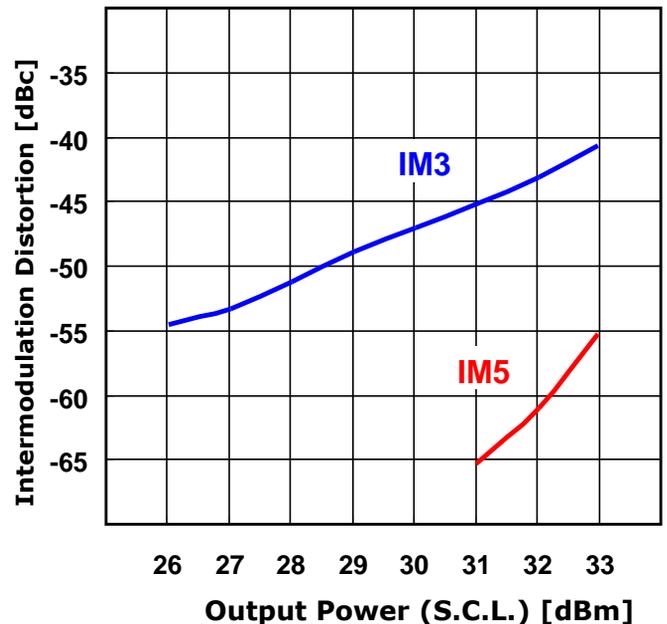
ELECTRICAL CHARACTERISTICS (Case Temperature T_c=25 deg.C)

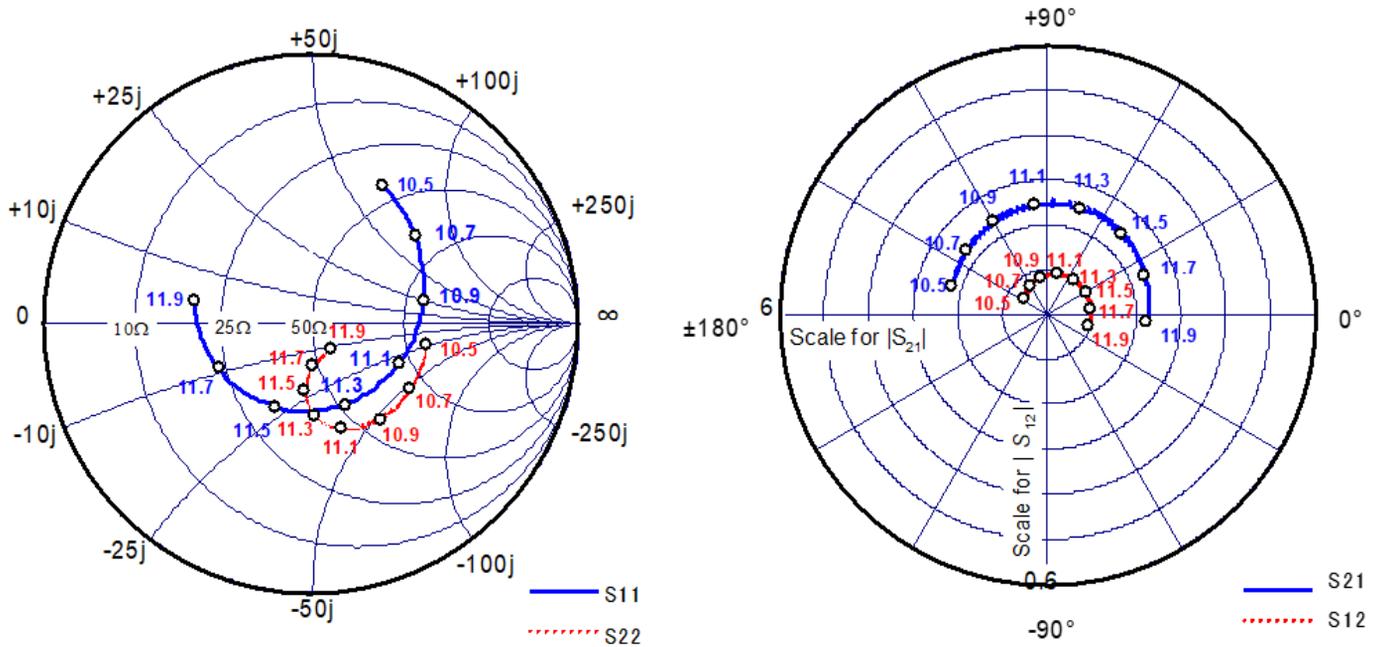
Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	7.0	10.5	A
Trans Conductance	g _m	V _{DS} =5V, I _{DS} =4.55A	-	4500	-	mS
Pinch-off Voltage	V _P	V _{DS} =5V, I _{DS} =300mA	-0.5	-1.5	-3	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-300μA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V I _{DS} =3.6A (typ.)	41.0	42.0	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		6.0	7.0	-	dB
Drain Current	I _{DSR}	f= 10.7 to 11.7 GHz	-	4.0	5.0	A
Power-added Efficiency	PAE	Z _S =Z _L =50 ohm	-	31	-	%
Gain Flatness	ΔG		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM ₃	f=11.7 GHz Δf=10MHz, 2-tone Test Pout=30.0dBm (S.C.L.)	-42	-45	-	dBc
Thermal Resistance	R _{th}	Channel to Case	-	2.3	2.6	deg.C/W
Channel Temperature Rise	ΔT _{ch}	(V _{DS} × I _{DSR} - Pout + Pin) × R _{th}	-	-	100	deg.C

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

CASE STYLE	IB
RoHS Compliance	YES
ESD	Class 3A
	4000V to 8000V

Note : Based on ANSI/ESDA/JEDEC JS-001-2012(C=100pF, R=1.5kohm)

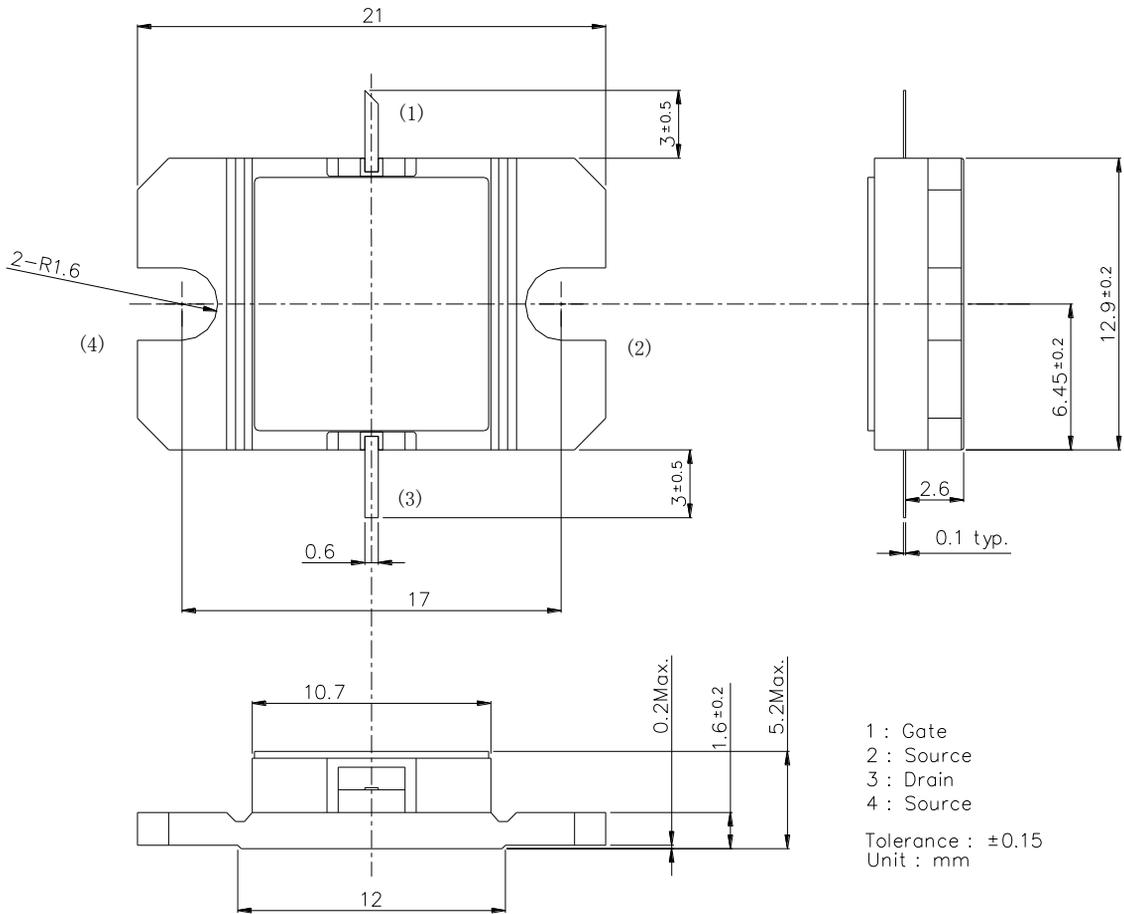
● RF Characteristics
Power Derating Curve

OUTPUT POWER & POWER ADDED EFFICIENCY vs. INPUT POWER
 $V_{DS}=10V, I_{DS}=3.6A, f=11.2GHz$

OUTPUT POWER vs FREQUENCY
 $V_{DS}=10V, I_{DS}=3.6A$

IMD vs OUTPUT POWER (S.C.L.)
 $V_{DS}=10V, I_{DS}=3.6A$
 $f1=11.70GHz, f2=11.71GHz, 2\text{-tone test}$


● S-Parameter


$V_{DS}=10V, I_{DS}=0.5I_{DSS}$

Freq. (GHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10.5	0.580	62.4	2.199	163.7	0.061	143.2	0.438	-10.3
10.6	0.543	51.5	2.241	152.6	0.067	131.7	0.439	-21.9
10.7	0.505	39.9	2.289	142.1	0.072	121.5	0.442	-33.2
10.8	0.465	26.8	2.328	131.0	0.078	109.7	0.446	-44.2
10.9	0.428	11.9	2.380	119.8	0.084	98.9	0.440	-54.3
11.0	0.389	-5.2	2.419	108.3	0.089	87.5	0.426	-64.2
11.1	0.359	-23.9	2.453	96.2	0.092	75.7	0.406	-73.5
11.2	0.334	-45.5	2.476	84.4	0.095	64.1	0.378	-81.8
11.3	0.325	-67.6	2.472	72.1	0.097	51.7	0.342	-88.4
11.4	0.325	-90.9	2.466	59.6	0.099	40.7	0.298	-93.3
11.5	0.338	-113.1	2.446	47.2	0.100	28.0	0.250	-95.3
11.6	0.359	-134.2	2.403	34.3	0.100	16.9	0.201	-95.0
11.7	0.383	-154.1	2.367	21.8	0.099	6.5	0.158	-88.3
11.8	0.415	-172.6	2.312	9.1	0.096	-4.4	0.128	-74.1
11.9	0.445	169.3	2.243	-4.3	0.095	-15.8	0.121	-52.5

● Package Out line
 Case Style : IB



For Safety, Observe the Following Procedures Environmental Management

- Do not put this product 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.
- Respect all applicable laws of the country when discarding this product.
This product must be disposed in accordance with methods specified by applicable hazardous waste procedures.

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