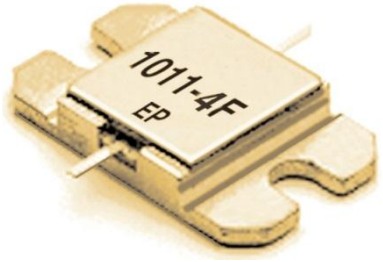
FLM1011-4F

X, Ku-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 36.0dBm (Typ.)
- High Gain: G_{1dB} = 7.0dB (Typ.)
- High PAE: η_{add} = 29% (Typ.)
- Low IM_3 = -46dBc@Po = 25.5dBm
- Broad Band: 10.7 to 11.7GHz
- Impedance Matched Zin/Zout = 50ohm
- Hermetically Sealed



DESCRIPTION

The FLM1011-4F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.
SEDI's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Case Temperature Tc=25deg.C)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	T_c = 25deg.C	25	W
Storage Temperature	T_{stg}		-65 to +175	deg.C
Channel Temperature	T_{ch}		175	deg.C

SEDI recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 16.0 and -2.2 mA respectively with gate resistance of 100ohm.

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS}=5V, V_{GS}=0V	-	1700	2600	mA
Transconductance	g_m	V_{DS}=5V, I_{DS}=1100mA	-	1700	-	mS
Pinch-off Voltage	V_p	V_{DS}=5V, I_{DS}=85mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS}=-85uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS}=10V, I_{DS}=0.65 I_{DSS} (Typ.), f=10.7 to 11.7 GHz, Z_S=Z_L=50ohm	35.5	36.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.0	7.0	-	dB
Drain Current	I_{dsr}		-	1100	1300	mA
Power-added Efficiency	η_{add}		-	29	-	%
Gain Flatness	ΔG		-	-	1.2	dB
3rd Order Intermodulation Distortion	IM_3	f = 11.7 GHz, Δf = 10 MHz 2-Tone Test Pout = 25.5dBm S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	5.0	6.0	deg.C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	80	deg.C

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

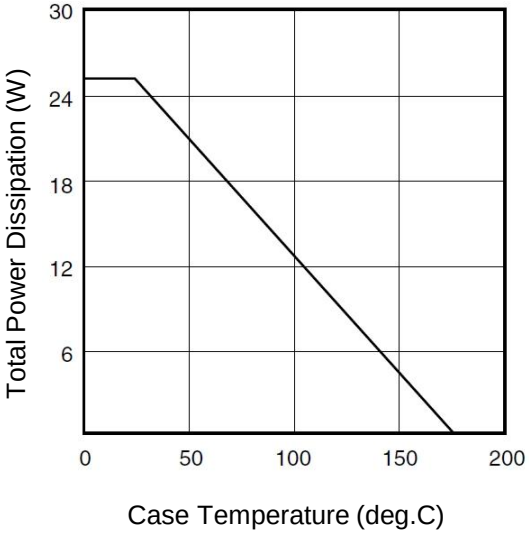
CASE STYLE	IA

ESD	Class 3A	4000V to 8000V

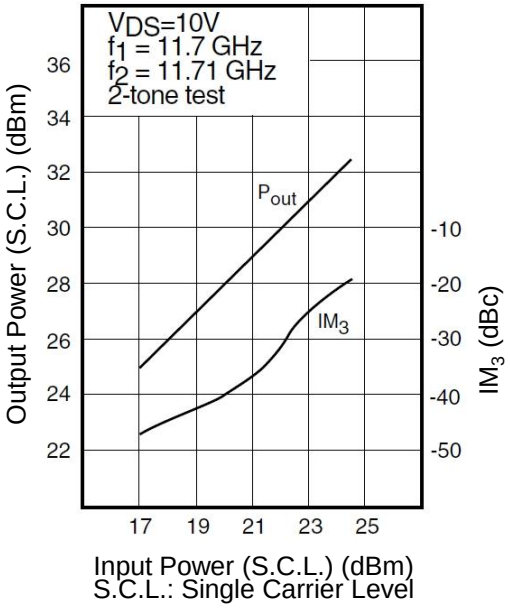
Note : Based on JEDEC JESD22-A114 (C=100pF, R=1.5kohm)

RoHS Compliance	Yes

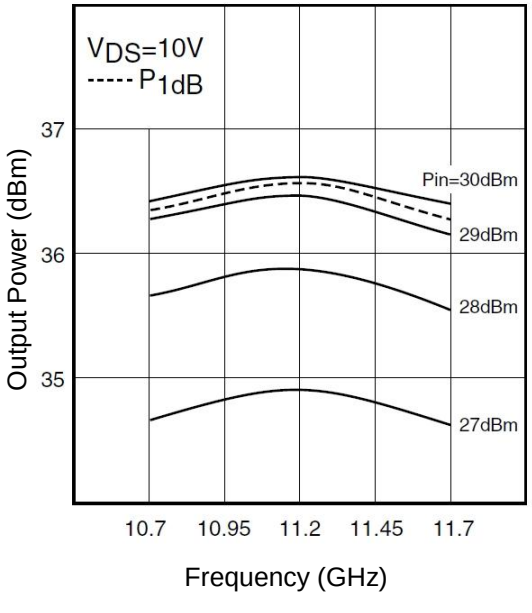
POWER DERATING CURVE



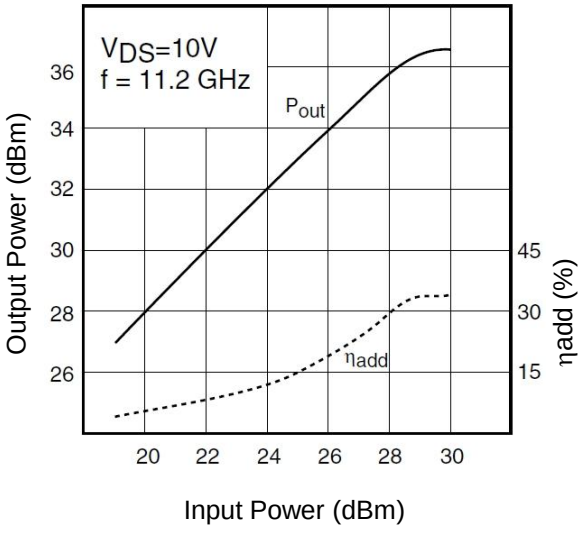
OUTPUT POWER & IM_3 vs. INPUT POWER

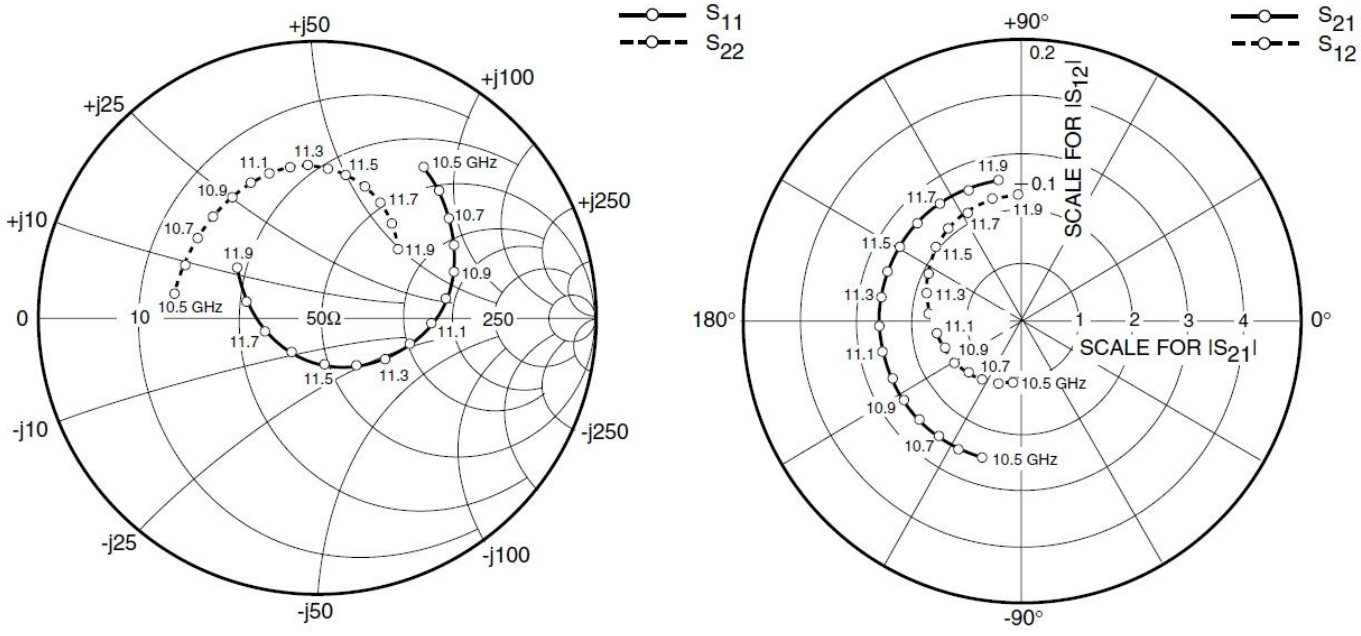


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



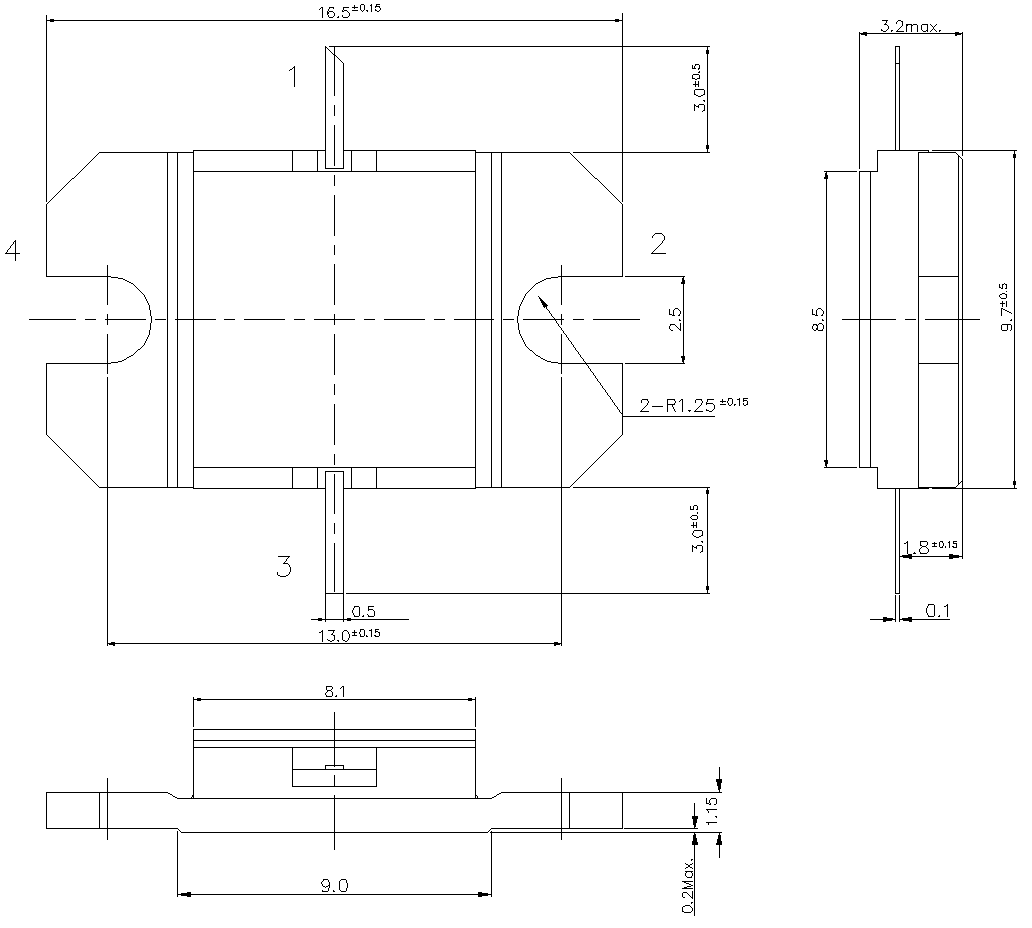


S-PARAMETERS

V_{DS} = 10V, I_{DS} = 1100mA

FREQUENCY	S11		S21		S12		S22	
(MHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10500	0.666	55.1	2.512	-107.2	0.044	-99.7	0.523	170.5
10600	0.637	46.8	2.515	-116.8	0.047	-111.7	0.517	158.3
10700	0.601	37.9	2.523	-126.9	0.051	-123.6	0.519	146.4
10800	0.561	28.5	2.532	-137.1	0.054	-136.9	0.523	135.4
10900	0.514	19.2	2.544	-147.1	0.059	-149.1	0.533	125.4
11000	0.463	8.9	2.553	-157.3	0.059	-161.3	0.544	116.2
11100	0.406	-2.4	2.562	-167.9	0.063	-172.7	0.548	108.1
11200	0.345	-15.5	2.570	-178.3	0.069	175.9	0.553	100.4
11300	0.281	-31.3	2.576	170.8	0.071	164.8	0.552	93.2
11400	0.217	-51.9	2.576	159.8	0.075	152.3	0.544	85.7
11500	0.167	-82.6	2.570	148.5	0.082	140.7	0.528	78.2
11600	0.154	-126.2	2.562	137.1	0.084	129.7	0.506	70.2
11700	0.195	-165.7	2.547	125.1	0.087	117.1	0.473	61.1
11800	0.265	166.8	2.526	112.7	0.090	104.3	0.431	51.2
11900	0.343	147.1	2.518	100.3	0.090	91.7	0.384	40.4

■ **Package Outline**
Case Style : IA



Pin Assignment
1 : Gate
2 : Source
3 : Drain
4 : Source

Unit : mm

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.