



FLM8596-15F

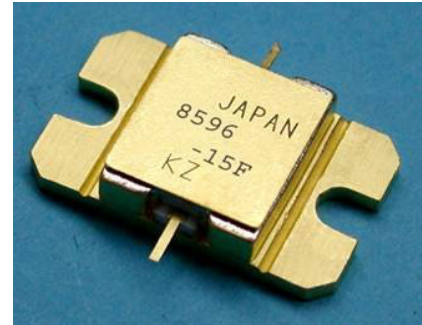
X-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB}=42.0dBm(Typ.)
- High Gain: G_{1dB}=7.5dB(Typ.)
- High PAE: η_{add}=32%(Typ.)
- Broad Band: 8.5 to 9.6GHz
- Impedance Matched Z_{in}/Z_{out} = 50ohm
- Hermetically Sealed Package

DESCRIPTION

The FLM8596-15F 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 RATINGS (Case Temperature T_c=25deg.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=25deg.C)

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

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

Item	Symbol	Test Conditions	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 _{DS} =3.5A	-	4500	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =300mA	-0.5	-1.5	-3.0	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	41.0	42.0	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}	f=8.5 to 9.6 GHz I _{DS} =0.5I _{DSS} Z _S =Z _L =50ohm	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	deg.C/W
Channel Temperature Rise	ΔT _{ch}	10V x I _{DSR} x R _{th}	-	-	100	deg.C

CASE STYLE: IB

G.C.P.:Gain Compression Point

ESD	Class 3A	4000V to 8000V
Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5kohm)		
RoHS Compliance	Yes	

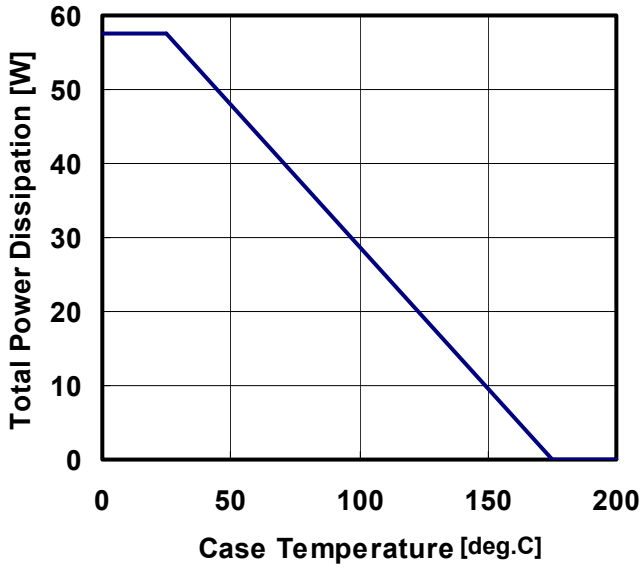




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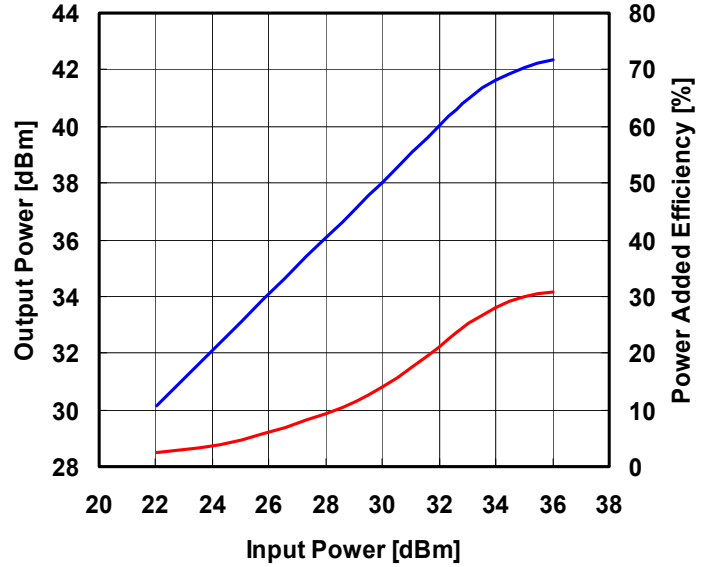
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POWER DERATING CURVE



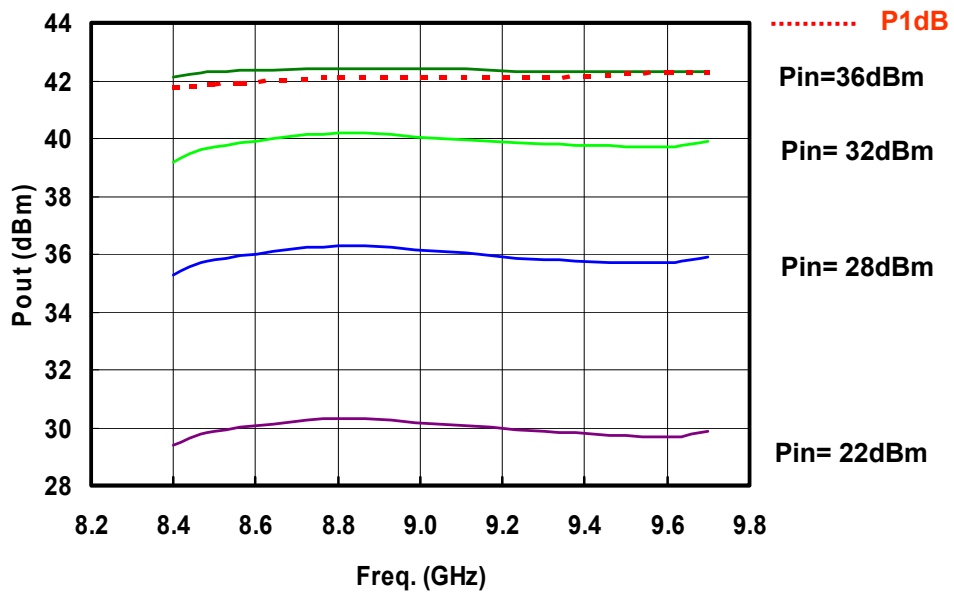
OUTPUT POWER & POWER ADDED EFFICIENCY vs. INPUT POWER

V_{ds}=10v, I_{ds}=0.5I_{dss} f=9.05GHz

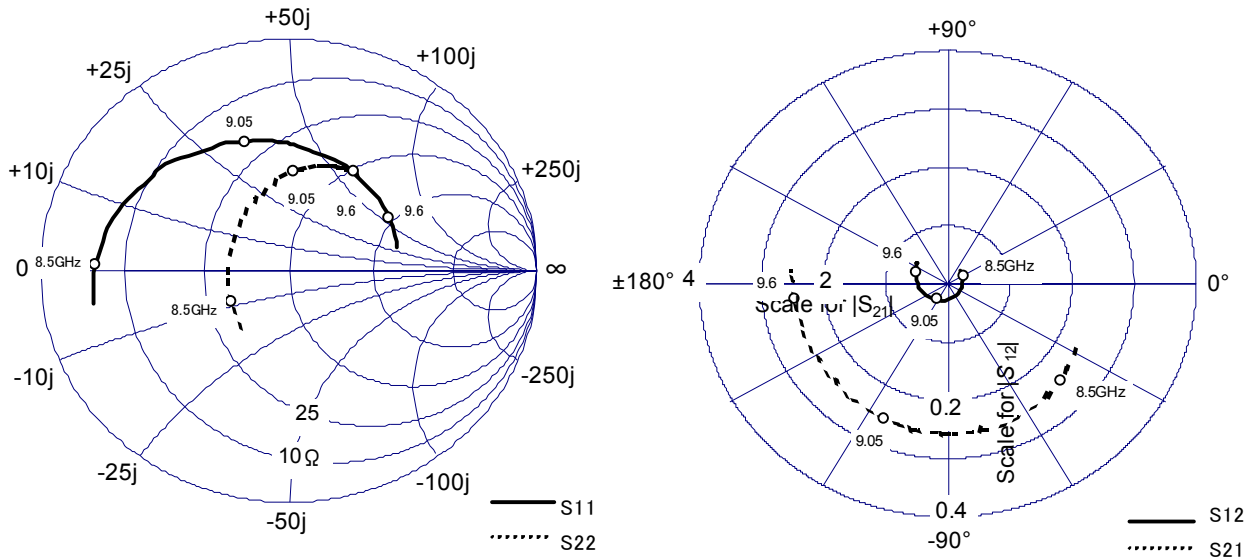


OUTPUT POWER vs. FREQUENCY

V_{ds}=10v, I_{ds}=0.5I_{dss}



■ S-PARAMETER



VDS=10.0V , IDS=0.5Idss

Freq. GHz	S11		S21		S12		S22	
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
8.4	0.795	-169.9	2.386	-29.6	0.031	47.6	0.318	-127.4
8.5	0.777	178.3	2.459	-42.2	0.029	29.9	0.268	-149.3
8.6	0.753	165.8	2.524	-55.9	0.024	5.6	0.244	-177.6
8.7	0.718	154.1	2.582	-69.0	0.024	-28.6	0.257	151.5
8.8	0.682	140.5	2.583	-81.7	0.024	-55.5	0.298	126.6
8.9	0.639	128.7	2.562	-94.6	0.027	-85.8	0.354	107.8
9.0	0.612	114.7	2.544	-106.6	0.031	-108.8	0.402	93.8
9.1	0.569	101.1	2.530	-118.4	0.035	-132.1	0.439	83.6
9.2	0.545	87.9	2.503	-129.6	0.039	-149.9	0.467	75.2
9.3	0.514	73.5	2.473	-141.1	0.044	-164.7	0.481	69.1
9.4	0.499	60.2	2.470	-151.8	0.048	-178.2	0.494	64.4
9.5	0.477	44.5	2.464	-162.7	0.051	168.8	0.500	60.7
9.6	0.461	29.5	2.485	-174.2	0.054	158.0	0.499	58.2
9.7	0.445	12.7	2.526	174.5	0.061	145.6	0.496	55.9

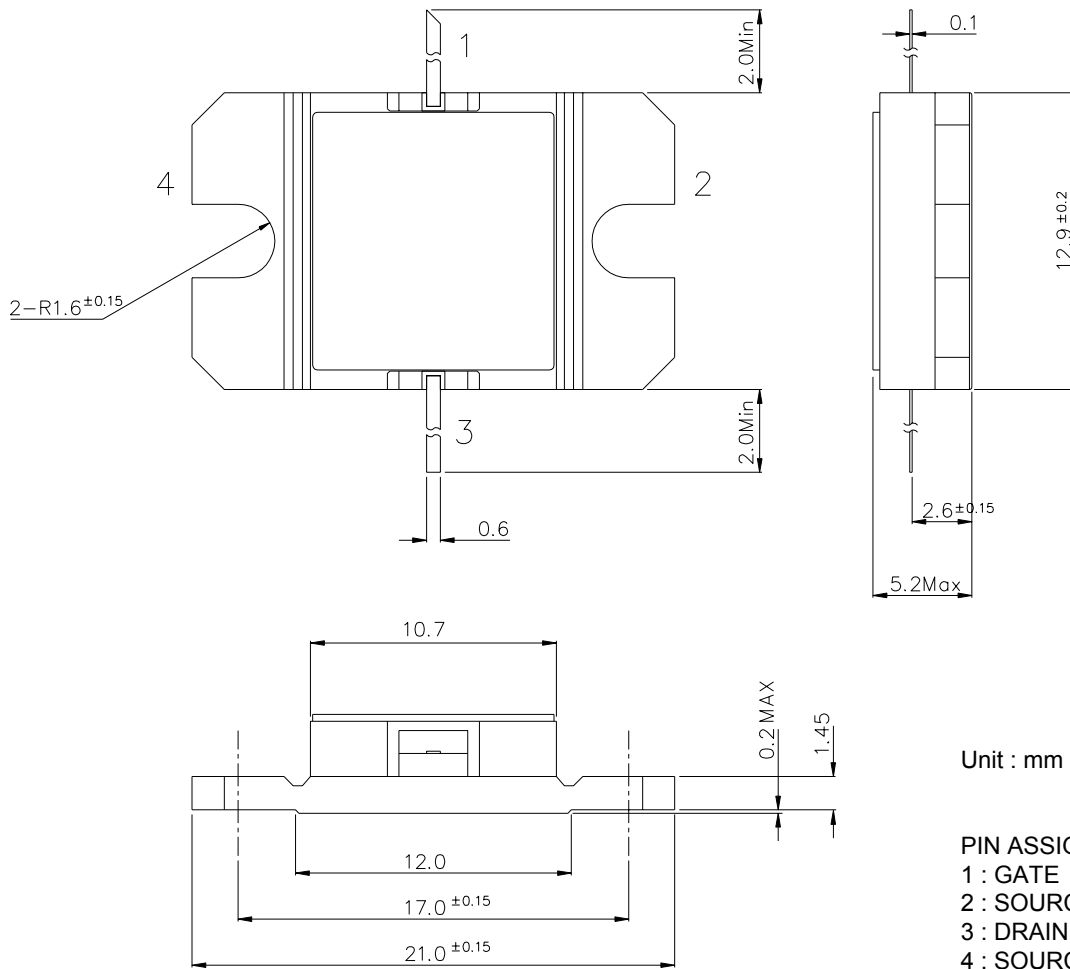


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Package Out Line

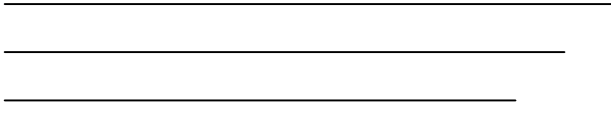
CASE STYLE: IB



Unit : mm

PIN ASSIGNMENT

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



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For further information please contact:

<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.