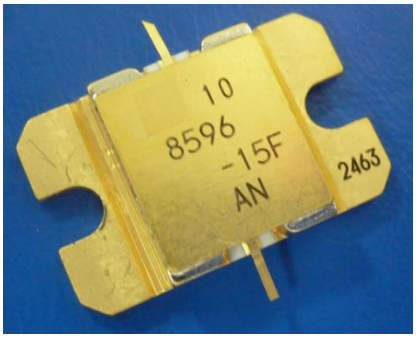
■ Features

- High Output Power: P1dB=42.0dBm(Typ.)
- High Gain: G1dB=7.5dB(Typ.)
- High Power Added Efficiency: PAE=32%(Typ.)
- Broad Band: 8.5 to 9.6GHz
- Impedance Matched Zin/Zout = 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 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

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}=3.5A	-	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 f=8.5 to 9.6 GHz I_{DS}=3.6A (typ.) Z_S=Z_L=50ohm	41.0	42.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.5	7.5	-	dB
Drain Current	I_{DSR}		-	4.0	5.0	A
Power-added Efficiency	PAE		-	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}	(V_{DS} x I_{DSR} – Pout + Pin) x R_{th}	-	-	100	deg.C

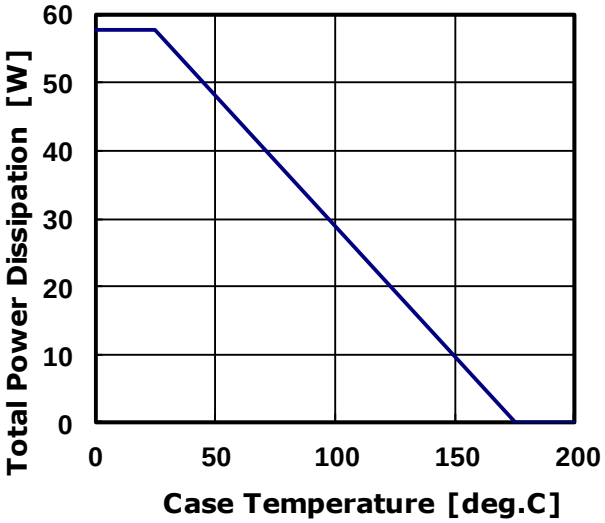
G.C.P. : Gain Compression Point

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

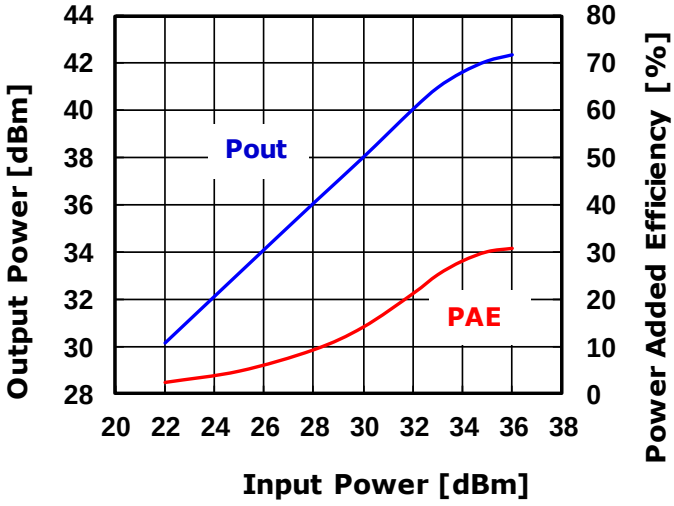
Note : Based on ANSI/ESDA/JEDEC JS-001-2012(C=100pF, R=1.5kohm)

● RF Characteristics

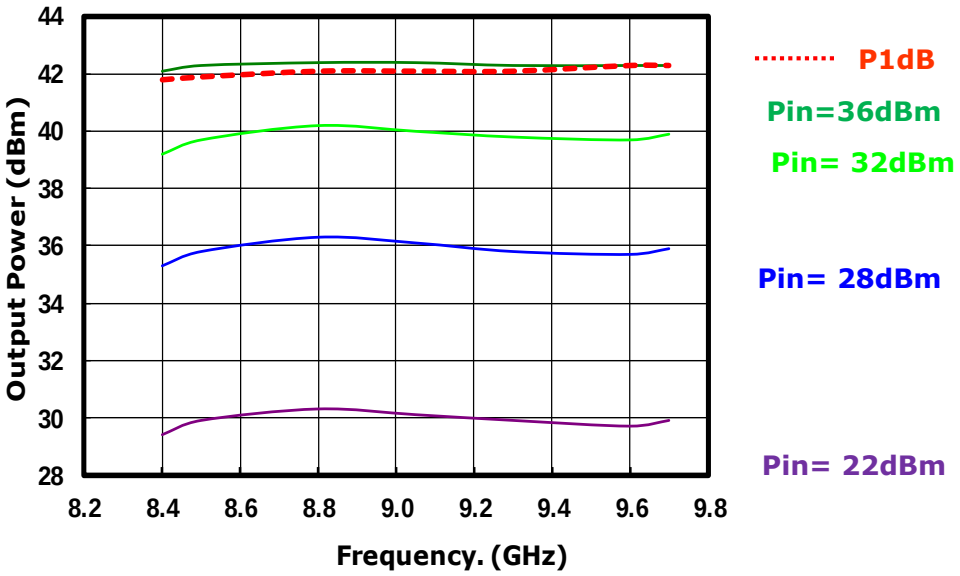
Power Derating Curve



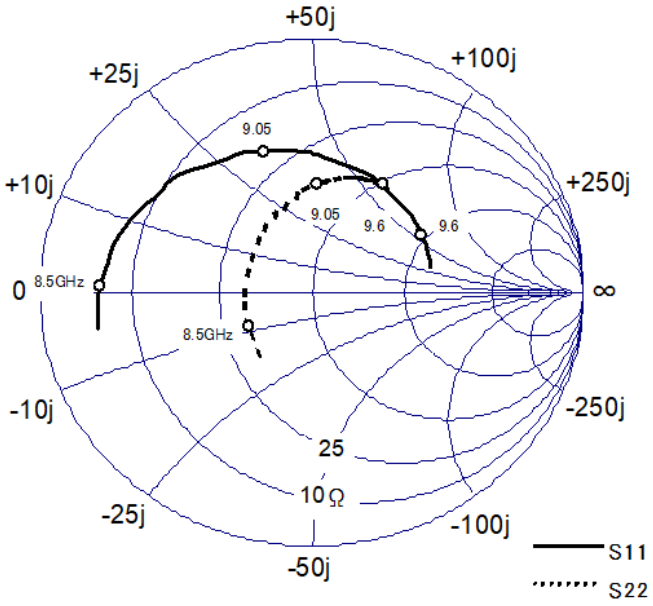
OUTPUT POWER & POWER ADDED EFFICIENCY vs. INPUT POWER
V_{DS}=10V, I_{DS}=3.6A , f=9.05GHz

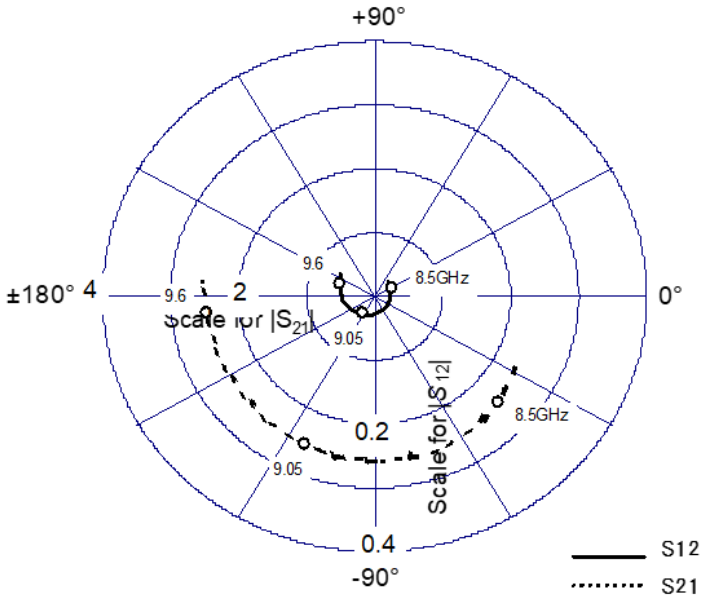


Output Power vs. Frequency
V_{DS}=10V, I_{DS}=3.6A



● S-Parameter

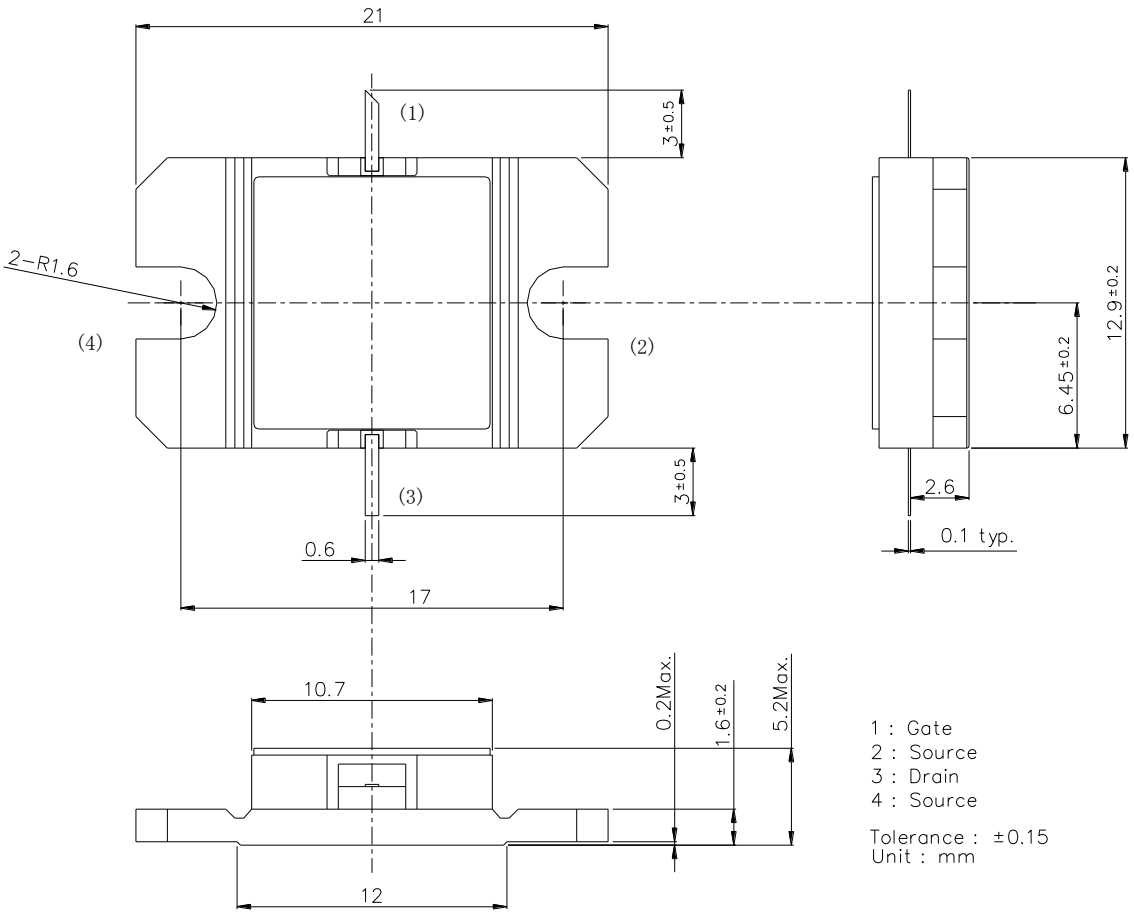




V_{DS}=10V , I_{DS}=0.5Idss

Freq.	S11		S21		S12		S22	
GHz	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

- **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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