

FLL310IQ-3A

High Voltage - High Power GaAs FET

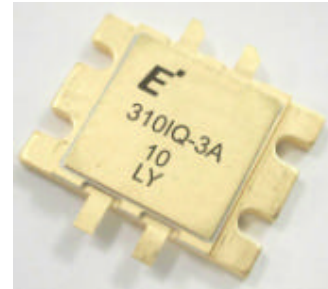
FEATURES

- Push-Pull Configuration
- High Power Output:30W
- Excellent Linearity
- Suitable for class A and class AB operation.
- High PAE:40%

DESCRIPTION

The FLL310IQ-3A is a 30 Watt GaAs FET that employ a push-pull design which offers excellent linearity, ease of matching, and greater consistency in covering the frequency band of 2.5 to 2.7GHz.

This new product is ideally suited for use in MMDS design requirements as it offers high gain, long term reliability and ease of use.



EUD stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (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 _{Tot}	107	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 =25W	<54.4	mA
Reverse Gate Current	I _{GR}	R _G =25W	>-17.4	mA
Operating channel temperature	T _{ch}		145	°C

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	1200	1600	mA
Transconductance	g _m	V _{DS} =5V, I _{DS} =7.2A	-	6000	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =720mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-720uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V f=2.7GHz I _{DS} (DC)=7.0A	44.0	45.0	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		8.0	9.0	-	dB
Drain Current	I _{DSR}		-	7.0	8	A
Power-added Efficiency	h _{add}	Note1	-	40.0	-	%
3rd Order Intermodulation Distortion	IM3	f=2.7GHz, f=5MHz 2-Tone test P _{out} =37.0dBm S.C.L.	-	-40.0	-	dBc
Thermal Resistance	R _{th}	Channel to Case	-	1.0	1.4	°C/W
Channel Temperature Rise	T _{ch}	Note2	-	-	100.0	°C

Note1: Tested in EUD Test Fixture containing external matching.

Note2: T_{ch}=10V x I_{DSR} x R_{th}

CASE STYLE: IQ

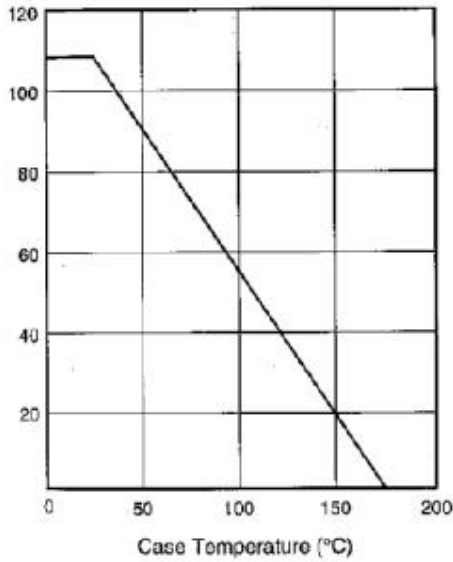
ESD	Class III	2000 V~
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Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5kΩ)

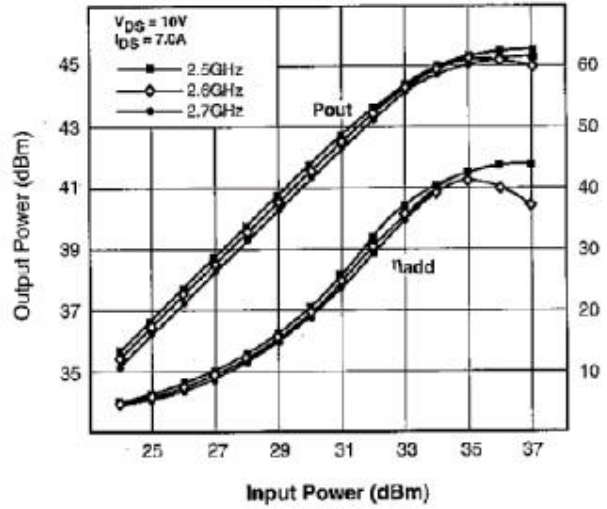
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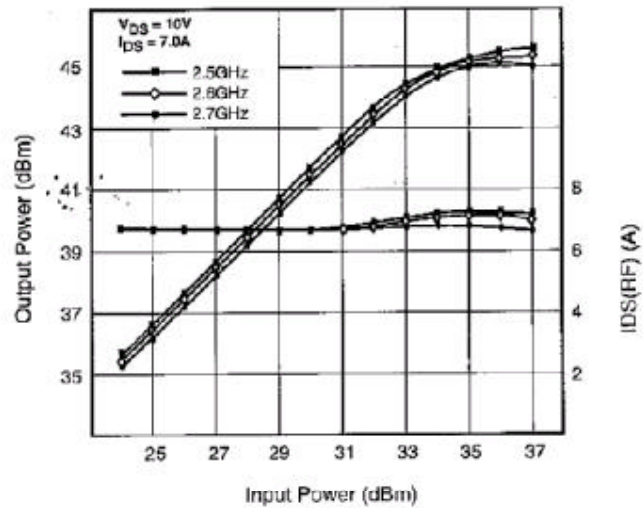
POWER DERATING CURVE



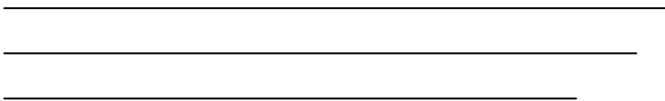
OUTPUT POWER & η_{add} vs. INPUT POWER



OUTPUT POWER vs. INPUT POWER

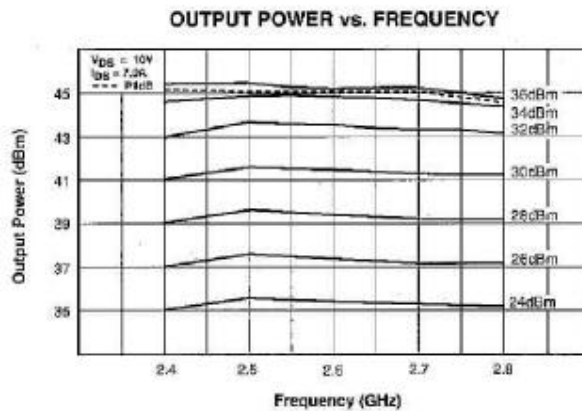
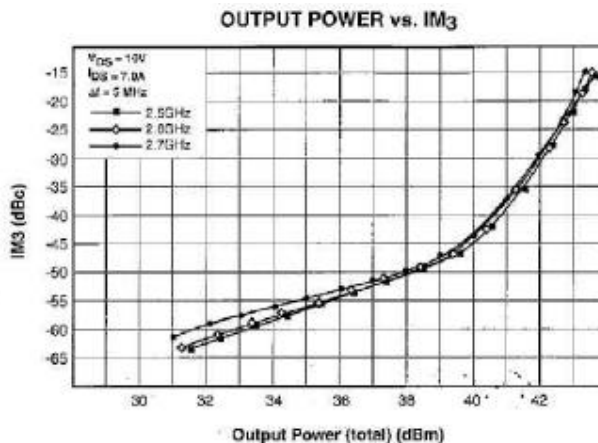


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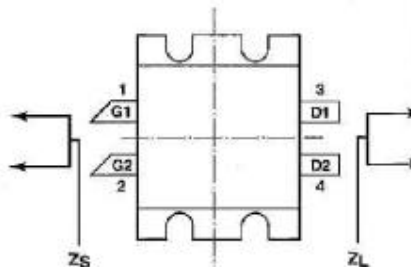
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OPTIMUM Z_S & Z_L IMPEDANCE

Frequency MHz	Z _S Ω		Z _L Ω	
	R	jX	R	jX
2500	22.3	-13.9	14.1	-16.9
2600	20.6	-15.6	13.3	-17.5
2700	19.1	-16.2	12.1	-17.9

Note 1, V_{DS} = 10V, I_{DS} = 7.0A
 2. This chart shows optimum gate-to-gate Z_S and drain-to-drain Z_L to achieve typical power, gain and IM₃ performance.



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CAUTION

Fujitsu Compound Semiconductor 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.