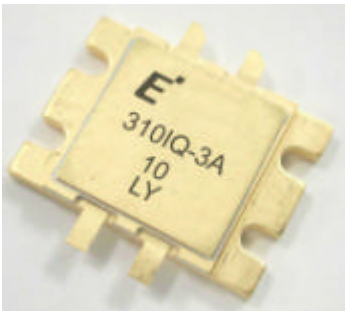
FLL310IQ-3A

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	PTot	107	W
Storage Temperature	Tstg	-65 to +175	°C
Channel Temperature	Tch	175	°C

RECOMMENDED OPERATING CONDITION (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	VDS		10	V
Forward Gate Current	IGF	RG=25Ω	<54.4	mA
Reverse Gate Current	IGR	RG=25Ω	>-17.4	mA
Operating channel temperature	Tch		145	°C

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	IDSS	VDS=5V,VGS=0V	-	1200	1600	mA
Transconductance	gm	VDS=5V,IDS=7.2A	-	6000	-	mS
Pinch-off Voltage	Vp	VDS=5V,IDS=720mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	VGSO	IGS=-720uA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P1dB	VDS=10V f=2.7GHz IDS(DC)=7.0A Note1	44.0	45.0	-	dBm
Power Gain at 1dB G.C.P.	G1dB		8.0	9.0	-	dB
Drain Current	IDSR		-	7.0	8	A
Power-added Efficiency	ηadd		-	40.0	-	%
3rd Order Intermoduation Distortion	IM3	f=2.7GHz,Δf=5MHz 2-Tone test Pout=37.0dBm S.C.L.	-	-40.0	-	dBc
Thermal Resistance	Rth	Channel to Case	-	1.0	1.4	oC/W
Channel Temperature Rise	ΔTch	Note2	-	-	100.0	°C

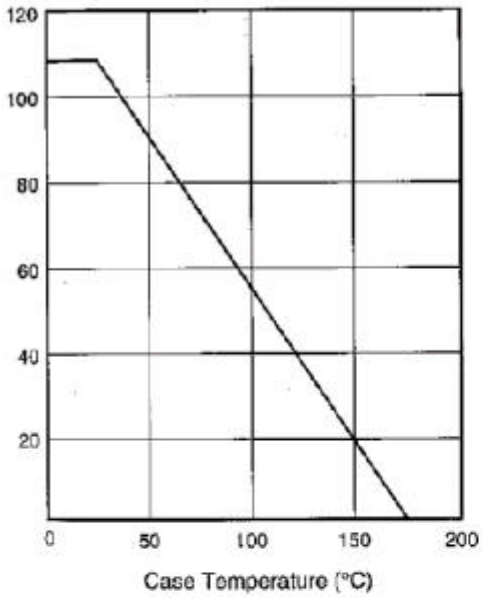
Note1: Tested in EUD Test Fixture containing external matching.
Note2: ΔTch=10V x IDSR x Rth

CASE STYLE: IQ

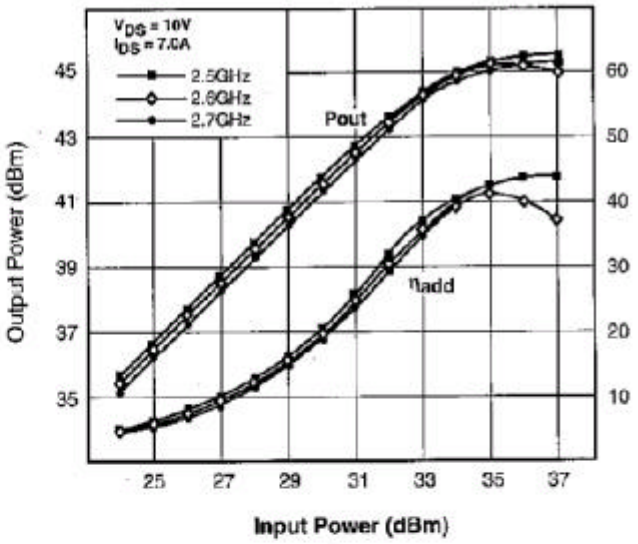
ESD	Class III	2000 V~

Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5kΩ)

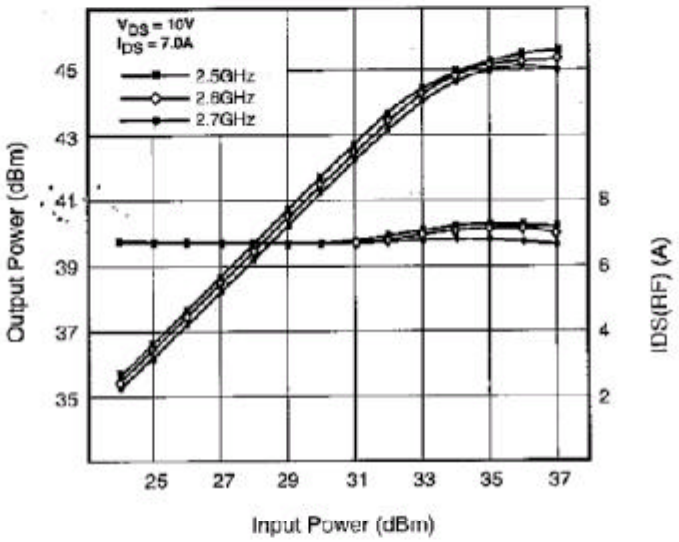
POWER DERATING CURVE



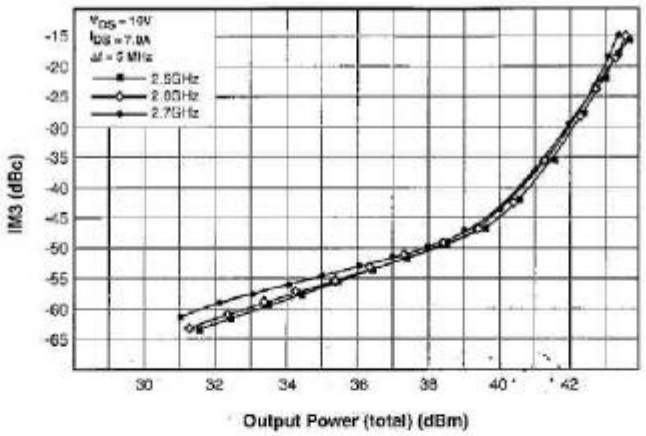
OUTPUT POWER & η_{add} vs. INPUT POWER



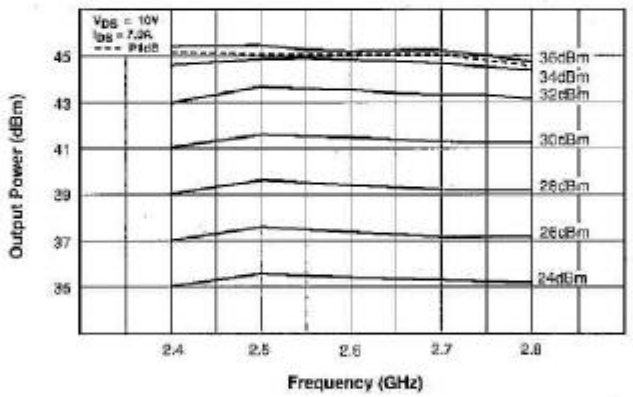
OUTPUT POWER vs. INPUT POWER



OUTPUT POWER vs. IM_3



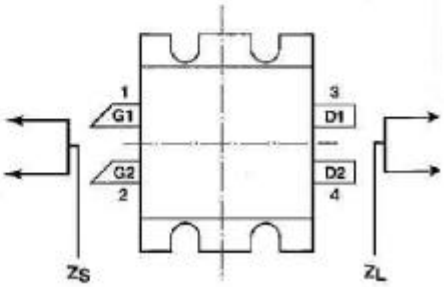
OUTPUT POWER vs. FREQUENCY



OPTIMUM Z_S & Z_L IMPEDANCE

Frequency MHz	$Z_S\ \Omega$		$Z_L\ \Omega$	
	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 IM_3 performance.



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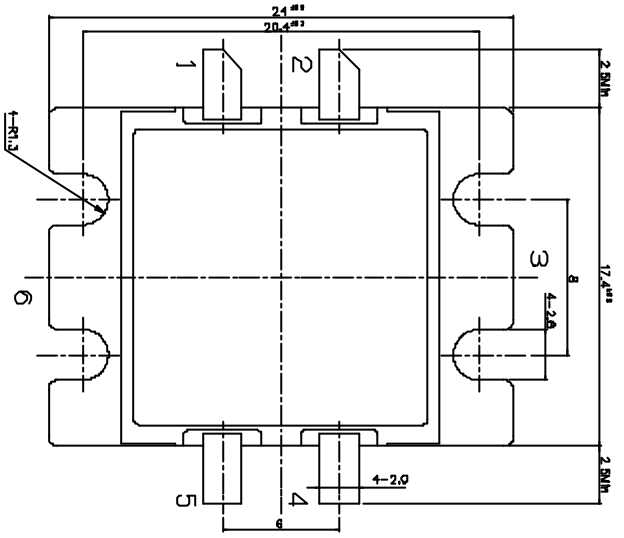
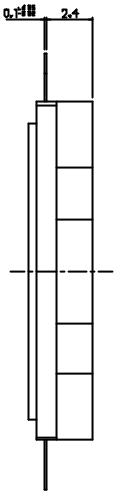
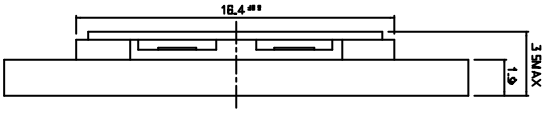
■ Package Out Line







PIN ASSIGMENT
1 : GATE
2 : GATE
3 : SOURCE
4 : DRAIN
5 : DRAIN
6 : SOURCE

Unit:mm

For further information please contact :

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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.

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