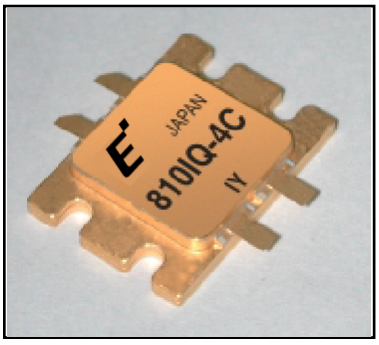
FLL810IQ-4C

L-Band High Power GaAs FET

FEATURES

- Push-Pull Configuration
- High Power Output: 80W
- High PAE: 45%.
- Excellent Linearity
- Suitable for class AB operation.
- Hermetically Sealed Package



DESCRIPTION

The FLL810IQ-4C is an 80 Watt GaAs FET that employs a push-pull design which offers excellent linearity, ease of matching, and greater consistency in covering the frequency band of 3.5 to 3.7 GHz. This new product is uniquely suited for use in WLL applications as it offers high gain, long term reliability and ease of use.

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature Ta=25°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	Tc = 25°C	136	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		+175	°C

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

1. The drain-source operating voltage (V_{DS}) should not exceed 12 volts.
2. The forward and reverse gate currents should not exceed 176 and -51.8 mA respectively with gate resistance of 5Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

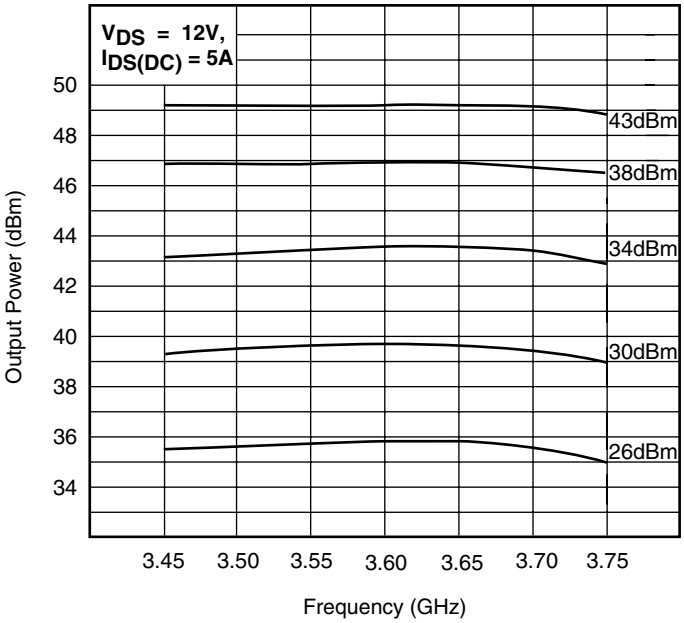
ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	8	-	A
Pinch-Off Voltage	V_p	V_{DS} = 5V, I_{DS} = 220mA	-0.1	-0.3	-0.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS} = -2.2mA	-5	-	-	V
Output Power	P_{out}	V_{DS} = 12V f = 3.6 GHz I_{DS} = 5.0A Pin = 43.0dBm	48.0	49.0	-	dBm
Linear Gain (Note 1)	GL		8.5	9.5	-	dB
Power-Added Efficiency	η_{add}		-	45	-	%
Drain Current	I_{DSR}		-	11.5	15.0	A
Thermal Resistance	R_{th}	Channel to Case	-	0.8	1.1	°C/W

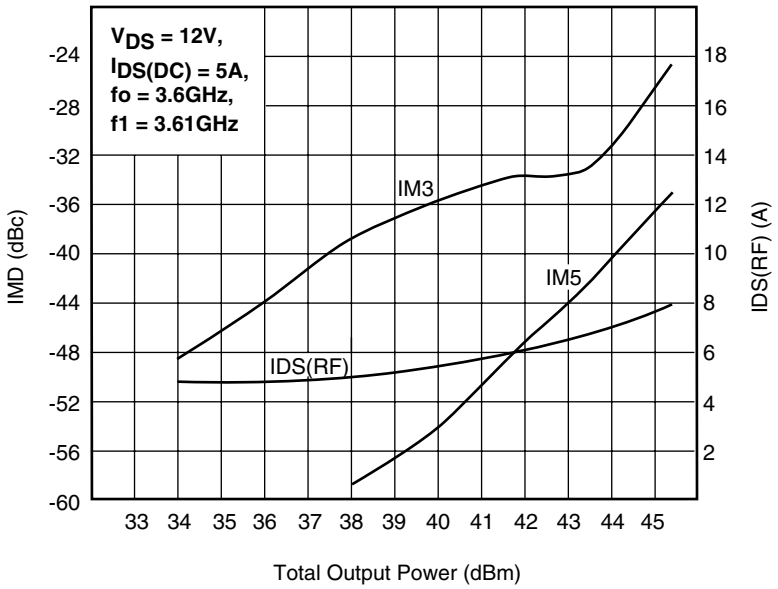
CASE STYLE: IQ

Note 1: The condition for GL is the same as Pout except Pin = 28.0dBm.

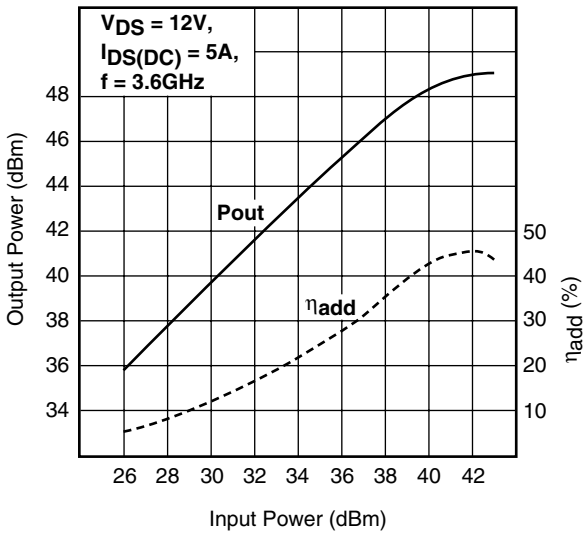
OUTPUT POWER vs. FREQUENCY



IMD & IDS(RF) vs. TOTAL OUTPUT POWER



OUTPUT POWER & η_{add} vs. INPUT POWER



S-PARAMETERS

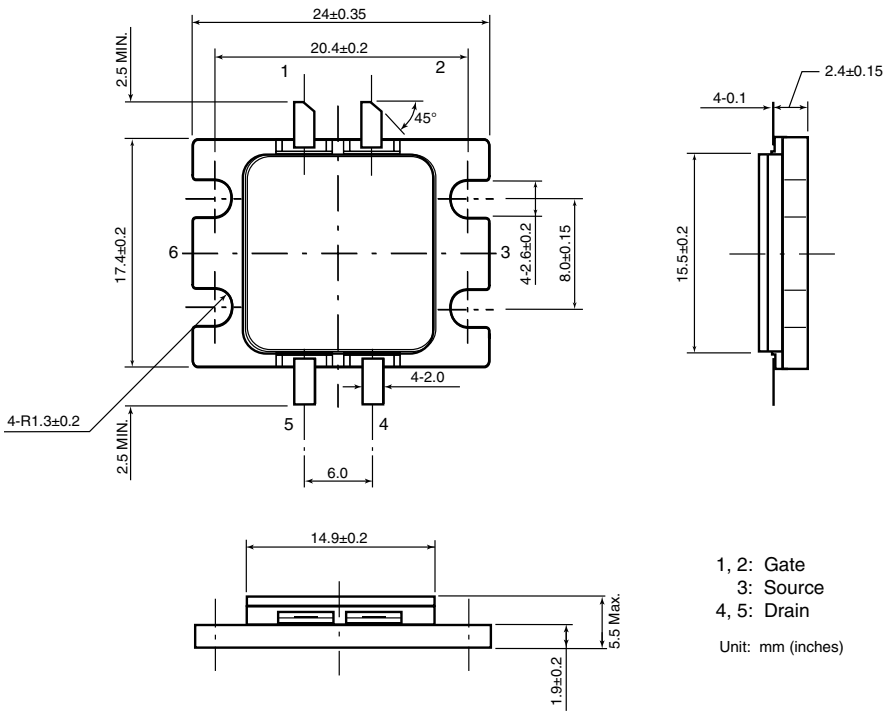
V_{DS} = 12V, I_{DS} = 2500mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2500	.499	-103.9	1.973	-113.4	.017	-111.7	.796	152.9
2600	.617	-120.1	1.880	-125.9	.017	-134.2	.773	151.8
2700	.703	-131.7	1.735	-142.2	.016	-149.9	.752	150.1
2800	.761	-141.4	1.784	-153.8	.016	-167.5	.729	149.5
2900	.793	-148.6	1.689	-163.9	.017	-176.4	.714	148.0
3000	.801	-155.5	1.803	-178.8	.017	161.0	.678	146.2
3100	.783	-162.8	1.949	171.0	.019	136.6	.656	143.9
3200	.747	-169.1	2.087	154.5	.021	119.4	.604	140.8
3300	.644	-176.8	2.398	136.9	.024	94.7	.566	138.8
3400	.492	178.6	2.627	116.1	.031	80.3	.506	137.6
3500	.315	-166.2	2.798	88.0	.036	48.3	.468	143.3
3600	.397	-130.1	2.612	59.6	.034	15.7	.504	148.1
3700	.603	-128.8	2.173	33.1	.031	-8.8	.558	145.3
3800	.743	-135.6	1.814	13.3	.024	-33.0	.580	136.4
3900	.825	-143.0	1.493	-5.2	.022	-47.8	.559	125.9
4000	.878	-148.0	1.222	-20.4	.019	-59.2	.535	113.4
4100	.910	-152.6	.999	-34.6	.019	-67.0	.483	97.7
4200	.937	-156.1	.849	-46.9	.017	-76.4	.418	78.8
4300	.949	-159.8	.735	-55.8	.018	-86.6	.376	53.9
4400	.953	-162.7	.681	-67.5	.018	-96.7	.343	18.9
4500	.956	-165.1	.666	-82.1	.020	-107.9	.386	-17.4

Note: This S-Parameter data shows measurements performed on a single-ended push-pull FET. These parameters should be used to determine the calculated Push-Pull S-Parameter amplifier designs.

Download S-Parameters, click here

Case Style "IQ"



1, 2: Gate
3: Source
4, 5: Drain

Unit: mm (inches)