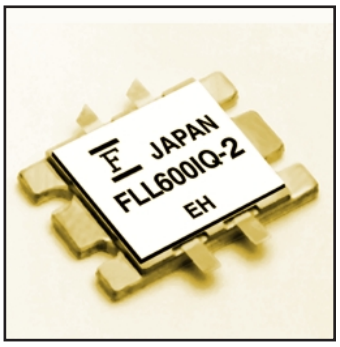
FEATURES

- Push-Pull Configuration
- High Power Output: 60W (Typ.)
- High PAE: 43% (Typ.)
- Broad Frequency Range: 800 to 2000 MHz.
- Suitable for class AB operation.



DESCRIPTION

The FLL600IQ-2 is a 60 Watt GaAs FET that employs a push-pull design which offers ease of matching, greater consistency and a broader bandwidth for high power L-band amplifiers. This product is targeted to reduce the size and complexity of highly linear, high power base station transmitting amplifiers. This new product is uniquely suited for use in PCS/PCN base station amplifiers as it offers high gain, long term reliability and ease of use.

APPLICATIONS

- Solid State Power Amplifier.
- PCS/PCN Communication Systems.

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature Ta=25°C)

Parameter	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	125	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		+175	°C

Fujitsu 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 78 and -32 mA respectively with gate resistance of 25Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

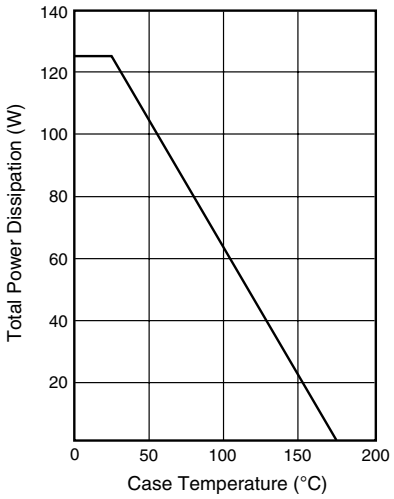
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	24	32	A
Transconductance	gm	V_{DS} = 5V, I_{DS} = 14.4A	-	12	-	S
Pinch-Off Voltage	V_p	V_{DS} = 5V, I_{DS} = 1.44A	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS} = -1.44mA	-5	-	-	V
Output Power at 1 dB G.C.P.	P_{1dB}	V_{DS} = 12V f=1.96GHz I_{DS} = 4.0A	47.0	48.0	-	dBm
Power Gain at 1 dB G.C.P.	G_{1dB}		9.5	10.5	-	dB
Drain Current	I_{DSR}		-	11.0	15.0	A
Power-Added Efficiency	η_{add}		-	43	-	%
Thermal Resistance	R_{th}	Channel to Case	-	0.8	1.2	°C/W

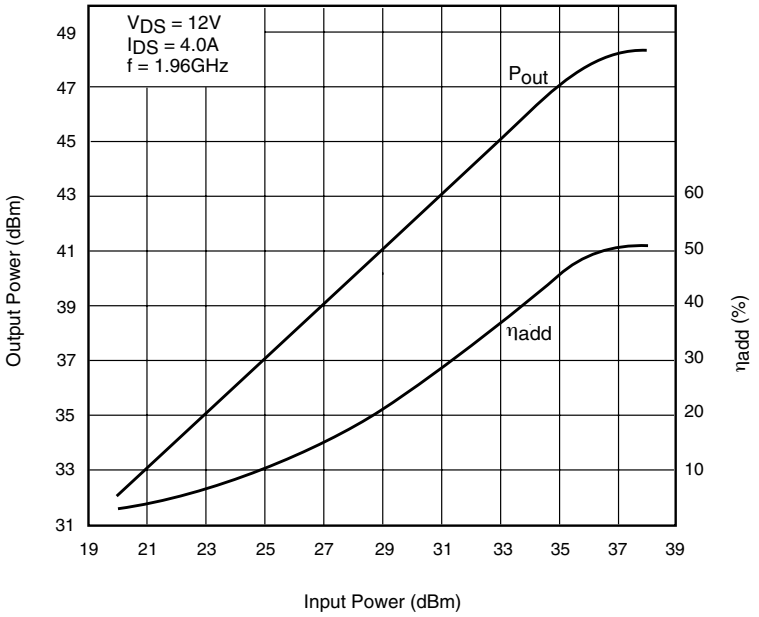
CASE STYLE: IQ

G.C.P.: Gain Compression Point

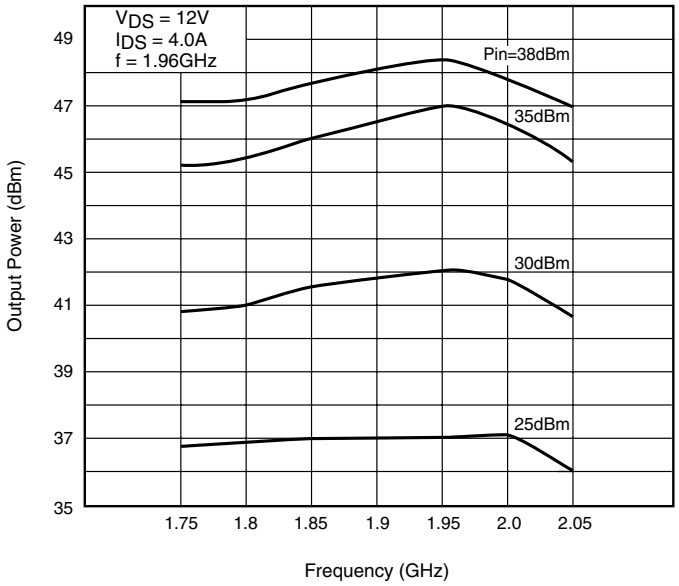
POWER DERATING CURVE



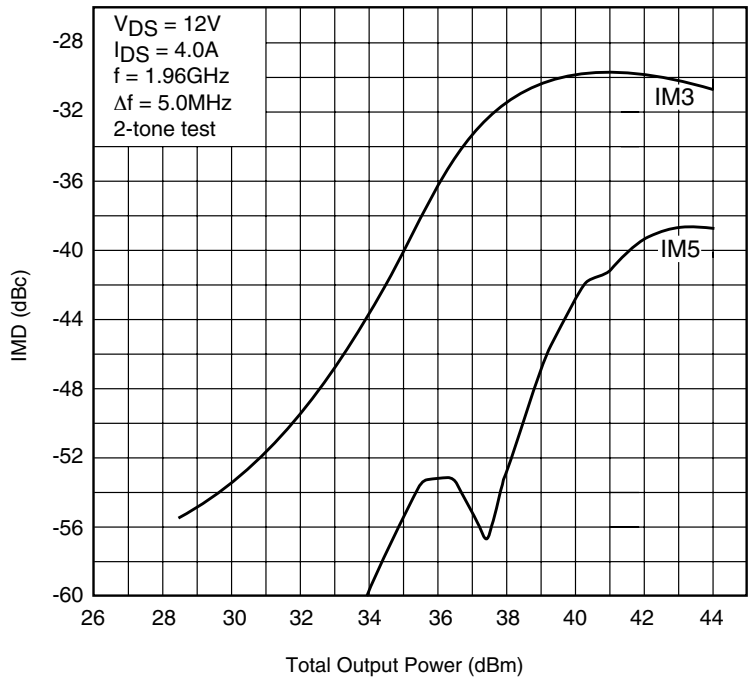
OUTPUT POWER & η_{add} vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. IMD



S-PARAMETERS

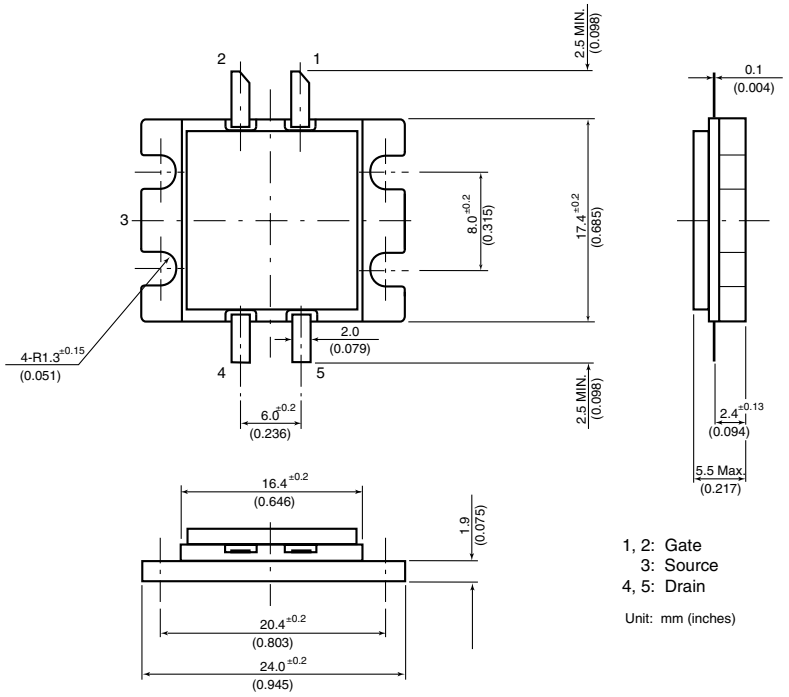
V_{DS} = 12V, I_{DS} = 2A

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1000	.952	169.0	.808	32.9	.004	-15.0	.893	178.0
1100	.934	166.3	.865	24.6	.006	-38.5	.903	177.9
1200	.911	163.3	.958	14.8	.006	-33.2	.905	177.9
1300	.872	159.4	1.098	3.0	.006	-44.6	.910	177.5
1400	.797	155.4	1.287	-12.2	.009	-73.9	.918	177.0
1500	.688	153.0	1.516	-32.7	.011	-81.3	.936	176.2
1600	.560	159.1	1.661	-58.7	.013	-111.7	.947	174.7
1700	.864	173.4	1.612	-86.1	.014	-138.7	.949	172.1
1800	.672	177.9	1.398	-110.1	.013	-164.6	.929	170.0
1900	.766	174.9	1.185	-128.8	.012	174.4	.913	168.9
2000	.822	170.1	1.021	-143.3	.011	162.0	.902	168.5
2100	.854	163.9	.906	-155.7	.011	149.4	.885	167.7
2200	.867	157.6	.832	-167.2	.010	134.5	.871	166.7
2300	.875	150.2	.800	-178.0	.012	119.7	.864	166.5
2400	.868	141.0	.792	170.4	.012	111.9	.846	165.5
2500	.865	132.9	.811	160.1	.012	103.1	.831	162.8
2600	.842	117.4	.867	145.8	.015	89.8	.812	162.0
2700	.807	93.4	.947	126.5	.020	65.6	.785	160.9
2800	.732	50.7	.997	101.3	.021	30.1	.770	160.5
2900	.561	-43.5	.814	59.2	.021	-26.3	.739	158.7
3000	.486	134.7	.450	100.9	.005	160.1	.712	158.4

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"
Metal-Ceramic Hermetic Package



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- **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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