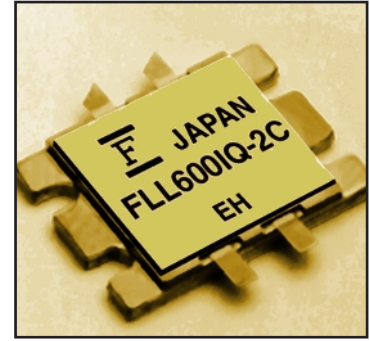


FLL600IQ-2C

L-Band High Power GaAs FET

FEATURES

- Push-Pull Configuration
- High Power Output: 60W (Typ.)
- High PAE: 51% (Typ.)
- Broad Frequency Range: 2100 to 2200 MHz.
- Suitable for class AB operation.



DESCRIPTION

The FLL600IQ-2C is a 60 Watt GaAs FET that employs a push-pull design that 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 W-CDMA and IMT 2000 base station amplifiers as it offers high gain, long term reliability and ease of use.

APPLICATIONS

- Solid State Base-Station Power Amplifier.
- W-CDMA and IMT 2000 Communication Systems.

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_c = 25^\circ\text{C}$	125	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ\text{C}$
Channel Temperature	T_{ch}		+175	$^\circ\text{C}$

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 117 and -35.4 mA respectively with gate resistance of 10 Ω .
3. The operating channel temperature (T_{ch}) should not exceed 145 $^\circ\text{C}$.

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25^\circ\text{C}$)

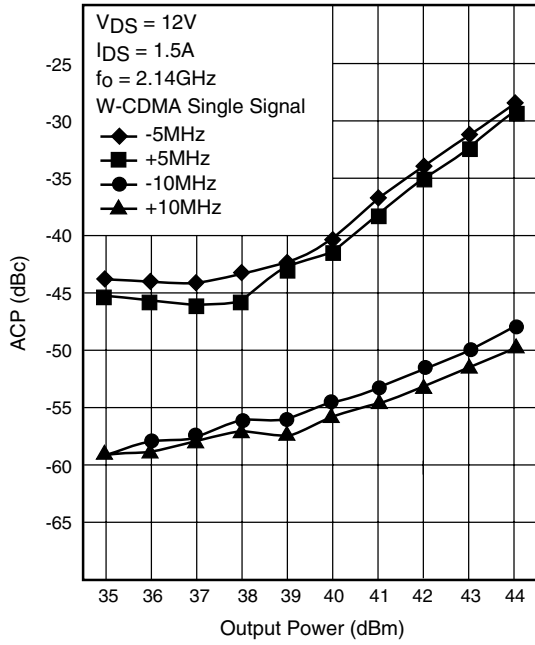
Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	6	-	A
Pinch-Off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 151\text{mA}$	-0.1	-0.3	-0.5	V
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS} = -1.51\text{mA}$	-5	-	-	V
Output Power	P_{out}	$V_{DS} = 12V$ $f = 2.17\text{ GHz}$	47.0	48.0	-	dBm
Linear Gain	GL		11.0	12.0	-	dB
Drain Current	I_{DSR}		-	9	13	A
Power-Added Efficiency	η_{add}	$I_{DS} = 1.5A$ $P_{in} = 39\text{dBm}$	-	51	-	%
Thermal Resistance	R_{th}	Channel to Case	-	0.8	1.2	$^\circ\text{C/W}$

CASE STYLE: IU

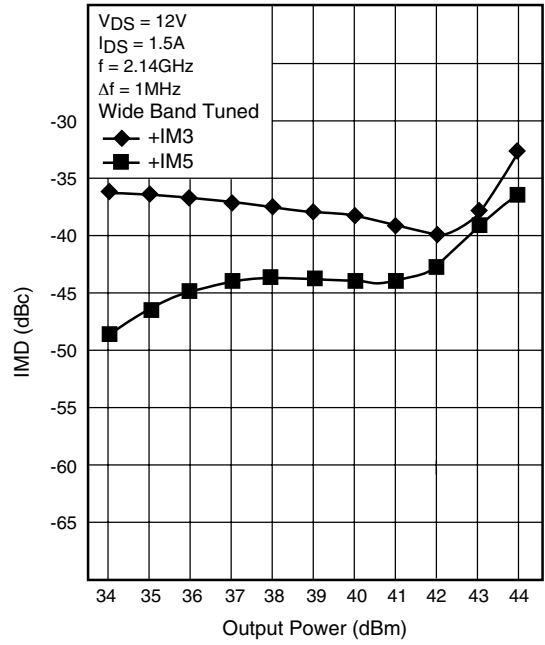
FLL600IQ-2C

L-Band High Power GaAs FET

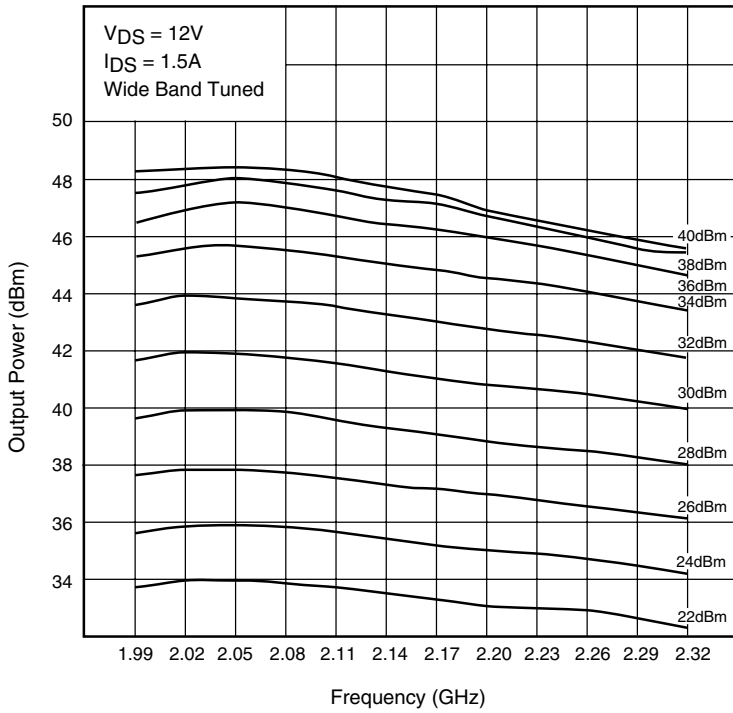
ACP vs. OUTPUT POWER



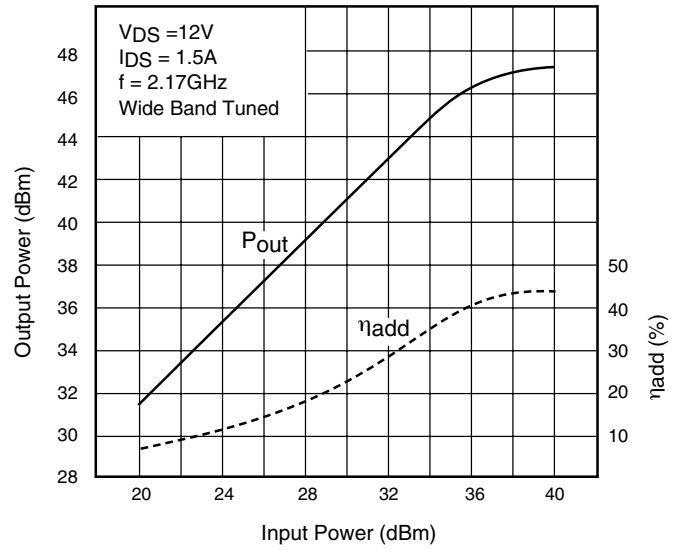
IMD vs. OUTPUT POWER



OUTPUT POWER vs. FREQUENCY



OUTPUT POWER & η_{add} vs. INPUT POWER



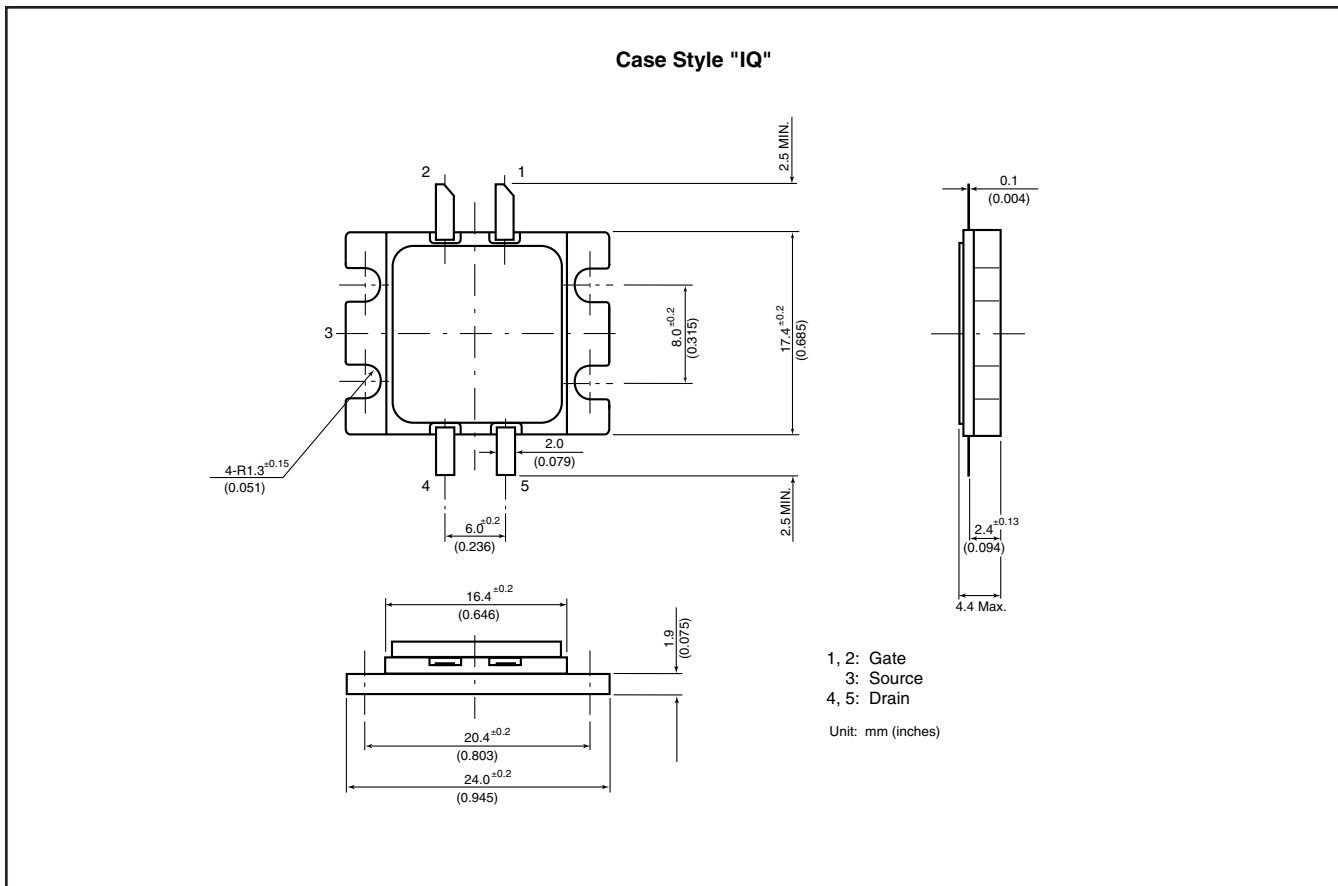
S-PARAMETERS

$V_{DS} = 12V, I_{DS} = 750mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1000	.923	168.0	.798	51.9	.009	50.4	.853	175.2
1100	.916	166.5	.811	46.7	.010	46.2	.845	174.8
1200	.897	164.7	.844	40.3	.012	46.0	.841	175.0
1300	.880	163.1	.879	33.0	.014	43.1	.835	175.1
1400	.856	161.4	.933	25.3	.014	41.4	.828	175.4
1500	.828	159.9	1.006	16.3	.018	32.5	.828	176.0
1600	.794	158.3	1.102	6.5	.017	28.8	.833	176.4
1700	.751	157.3	1.198	-4.8	.020	17.0	.847	176.7
1800	.710	156.9	1.301	-16.3	.022	11.9	.864	176.6
1900	.672	157.7	1.420	-30.4	.022	-2.9	.887	175.6
2000	.641	159.0	1.510	-44.9	.022	-15.0	.905	173.9
2100	.619	162.1	1.612	-60.8	.020	-26.2	.907	171.2
2200	.615	164.7	1.703	-74.8	.018	-42.8	.906	168.5
2300	.629	167.3	1.819	-90.9	.013	-66.7	.882	165.0
2400	.670	168.5	1.924	-107.0	.009	-90.6	.841	161.8
2500	.722	167.8	2.094	-123.3	.006	-149.2	.785	160.5
2600	.788	162.7	2.178	-143.8	.011	131.7	.703	160.4
2700	.852	153.7	2.227	-165.4	.018	101.8	.637	163.6
2800	.883	140.8	2.156	172.6	.030	80.0	.602	169.5
2900	.878	123.3	2.093	151.0	.039	54.9	.611	175.9
3000	.816	98.1	2.019	127.8	.057	37.0	.649	-179.3
3100	.671	60.6	1.899	101.7	.063	9.4	.716	-177.1
3200	.304	3.9	1.349	72.0	.060	-32.3	.800	-179.1
3300	.364	23.2	1.195	74.8	.035	-27.7	.815	177.0
3400	.489	-29.8	1.167	53.6	.037	-30.9	.831	174.7
3500	.638	-65.9	1.023	30.1	.039	-34.4	.846	172.5
3600	.726	-92.2	.790	11.3	.035	-41.6	.857	170.0
3700	.778	-109.9	.621	-1.7	.037	-47.1	.863	167.4
3800	.802	-122.9	.499	-10.6	.038	-44.1	.863	165.3
3900	.820	-132.5	.443	-16.0	.032	-55.1	.865	163.1
4000	.836	-141.3	.401	-23.6	.034	-41.3	.864	160.3
4100	.839	-149.1	.380	-29.6	.037	-38.8	.865	157.5
4200	.835	-156.7	.363	-37.3	.049	-30.3	.865	154.3
4300	.823	-165.2	.360	-44.0	.070	-29.1	.861	150.9
4400	.769	-177.9	.364	-49.0	.131	-26.5	.862	146.4
4500	.342	139.7	.514	-52.9	.381	-63.5	.822	137.7

FLL600IQ-2C

L-Band High Power GaAs FET



For further information please contact:

FUJITSU COMPOUND SEMICONDUCTOR, INC.
2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
Phone: (408) 232-9500
FAX: (408) 428-9111
www.fcsi.fujitsu.com

FME, QDD (European Sales Office)
Fujitsu Microelectronics Europe GmbH
Quantum Devices Division
Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
Phone: +44 (0)1628 504800
FAX: +44 (0)1628 504888

Fujitsu Limited reserves the right to change products and specifications without notice.
The information does not convey any license under rights of Fujitsu Limited or others.
© 1999 FUJITSU COMPOUND SEMICONDUCTOR, INC.
Printed in U.S.A. FCSI1199M200

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.

