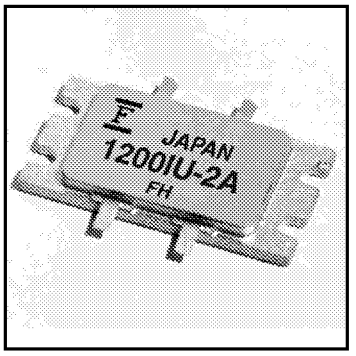
FLL1200IU-2A
L-Band Medium & High Power GaAs FETs

FUJITSU

FEATURES

- Push-Pull Configuration
- High Power Output: 120W (Typ.)
- High PAE: 44%.
- Broad Frequency Range: 2000 to 2200 MHz.
- Suitable for class AB operation.



DESCRIPTION

The FLL1200IU-2A is a 120 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 IMT-2000 base station amplifiers as it offers high gain, long term reliability and ease of use.

Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.

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	150	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 57.6mA and -57.6mA respectively with gate resistance of 10Ω.

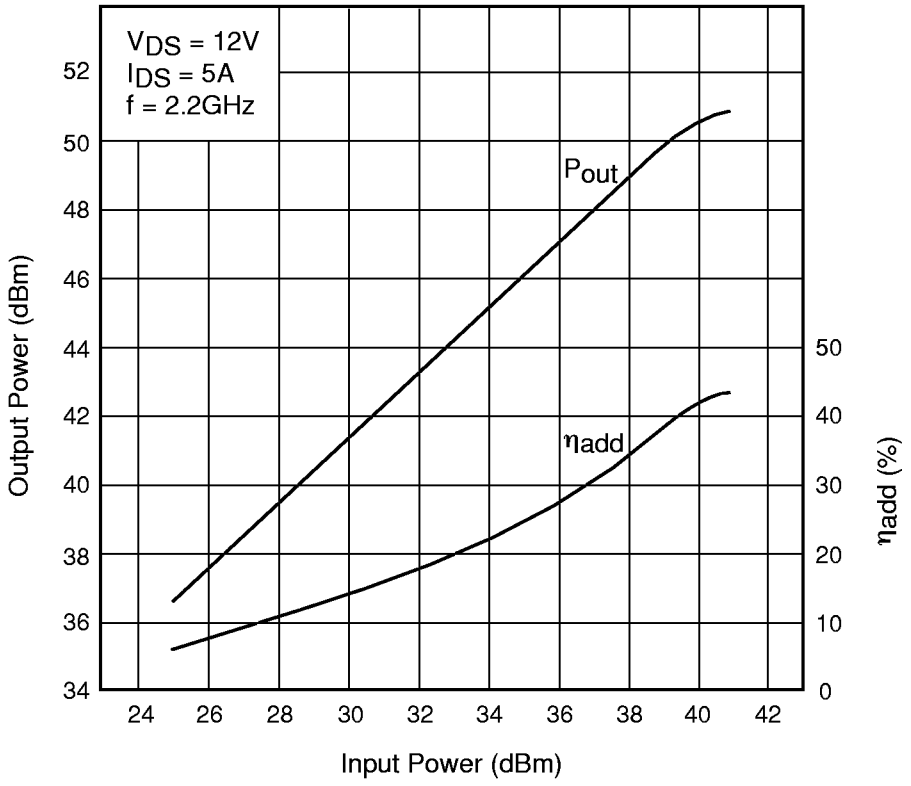
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS}=0V	-	48	72	A
Transconductance	gm	V_{DS} = 5V, I_{DS}=28.8A	-	24	-	S
Pinch-Off Voltage	V_p	V_{DS} = 5V, I_{DS}=2.88A	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS} = -2.88mA	-5	-	-	V
Output Power	P_{out}	V_{DS} = 12V f=2.2 GHz I_{DS} = 5.0A Pin = 41.0dBm	49.8	50.8	-	dBm
Linear Gain	GL		10.0	11.0	-	dB
Drain Current	I_{DSR}		-	20	30	A
Power-Added Efficiency	η_{add}	Note 1	-	44	-	%
Thermal Resistance	R_{th}	Channel to Case	-	0.8	1.0	°C/W

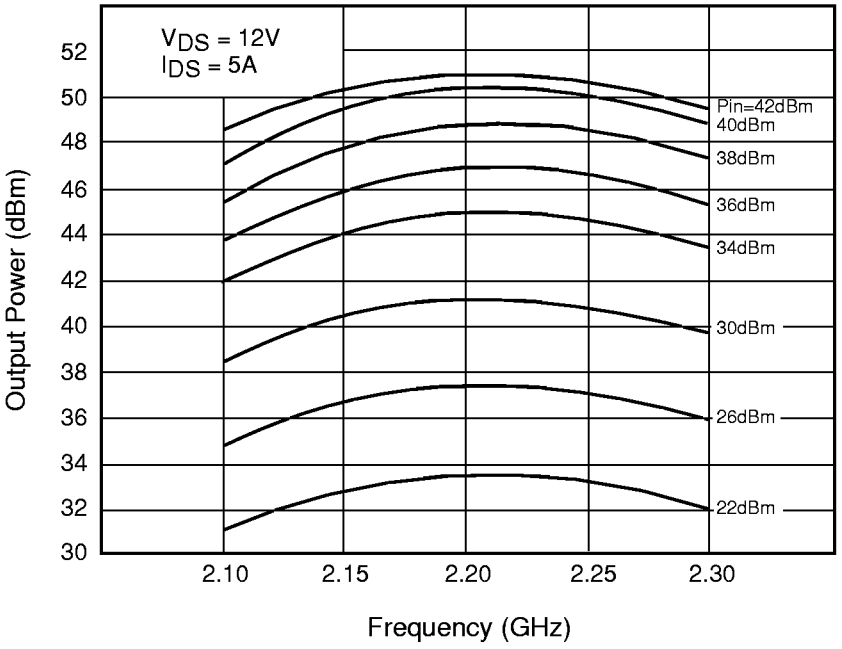
CASE STYLE: IU

Note 1: The device shall be measured at a constant V_{GS} condition.

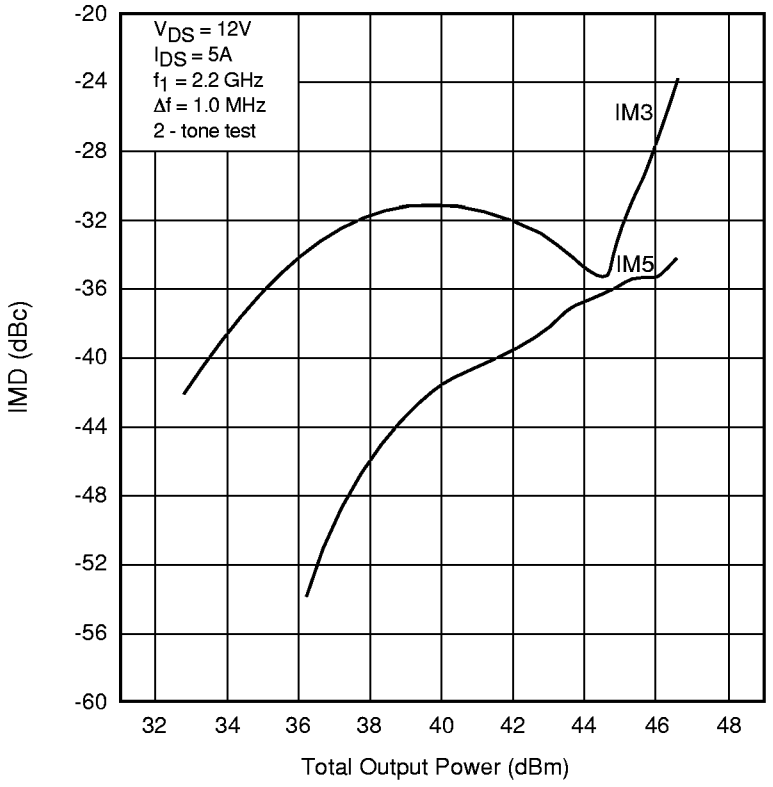
OUTPUT POWER & η_{add} vs. INPUT POWER



OUTPUT POWER vs. FREQUENCY



OUTPUT POWER & IMD



S-PARAMETERS

V_{DS} = 12V, I_{DS} = 2.5A

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1000	.946	168.7	.361	52.8	.005	47.3	.916	169.7
1100	.939	167.0	.380	49.3	.005	39.1	.906	168.8
1200	.934	165.3	.415	43.6	.006	41.2	.901	167.3
1300	.925	163.5	.467	38.1	.007	35.1	.892	166.1
1400	.912	161.6	.540	30.3	.008	26.2	.884	165.3
1500	.901	159.6	.636	20.1	.008	22.8	.875	164.2
1600	.878	157.1	.749	8.0	.010	12.2	.873	163.1
1700	.851	154.7	.898	-5.3	.011	-0.8	.873	161.7
1800	.811	151.9	1.096	-21.7	.012	-15.4	.881	160.0
1900	.748	149.2	1.366	-38.7	.014	-35.2	.890	157.4
2000	.659	148.9	1.773	-61.1	.015	-66.9	.896	152.5
2100	.567	156.9	2.205	-91.6	.017	-110.1	.850	145.3
2200	.635	170.2	2.298	-129.9	.018	-164.9	.730	140.0
2300	.798	167.5	1.987	-164.0	.019	143.2	.631	143.2
2400	.889	158.7	1.566	169.9	.019	110.8	.617	147.3
2500	.907	151.8	1.302	155.9	.020	87.7	.625	148.0
2600	.912	142.1	1.132	140.5	.022	68.9	.631	145.6
2700	.908	131.3	1.058	126.3	.024	54.5	.629	141.1
2800	.893	118.3	1.027	108.8	.029	38.3	.614	134.5
2900	.871	100.9	1.022	91.6	.035	24.5	.584	126.2
3000	.835	77.8	1.063	72.4	.042	8.2	.544	114.5

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.

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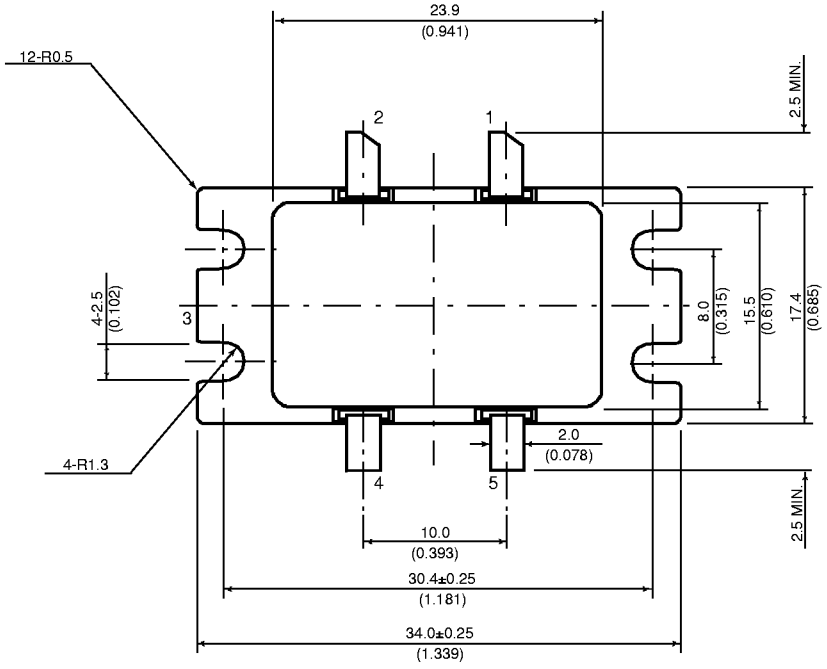
Case Style "IU"



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

Unit: mm (inches)