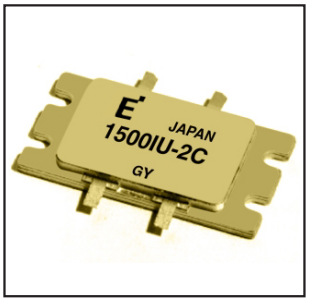
FLL1500IU-2C

L-Band High Power GaAs FET

FEATURES

- Push-Pull Configuration
- High Power Output: 150W (Typ.)
- High PAE: 48% (Typ.)
- Broad Frequency Range: 2100 to 2200 MHz.
- Suitable for class AB operation.



DESCRIPTION

The FLL1500IU-2C is a 150 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 well 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 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	187.5	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:

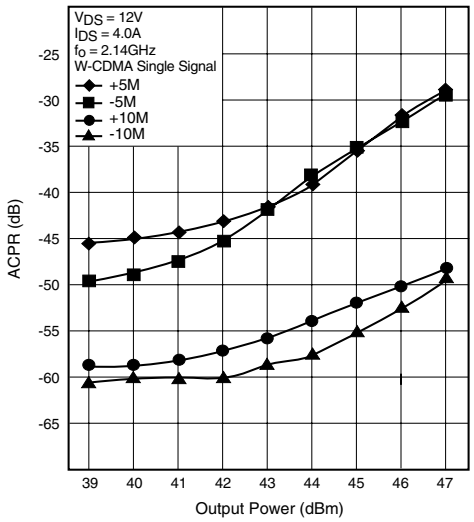
1. The drain-source operating voltage (V_{DS}) should not exceed 12 volts.
2. The forward and reverse gate currents should not exceed 353 and -103.6 mA respectively with gate resistance of 10Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

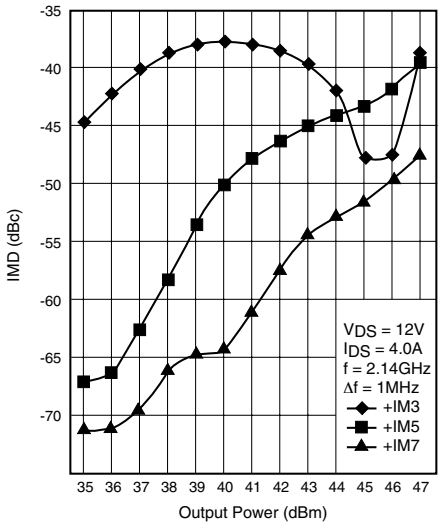
Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	16	-	A
Pinch-Off Voltage	V_p	V_{DS} = 5V, I_{DS} = 440mA	-0.1	-0.3	-0.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS} = -4.4mA	-5	-	-	V
Output Power	P_{out}	V_{DS} = 12V f = 2.17 GHz I_{DS} = 4.0A Pin = 43.0dBm	50.8	51.8	-	dBm
Linear Gain	GL		11.0	12.0	-	dB
Drain Current	I_{DSR}		-	23	30	A
Power-Added Efficiency	η_{add}		-	48	-	%
Thermal Resistance	R_{th}	Channel to Case	-	0.55	0.8	°C/W

CASE STYLE: IU

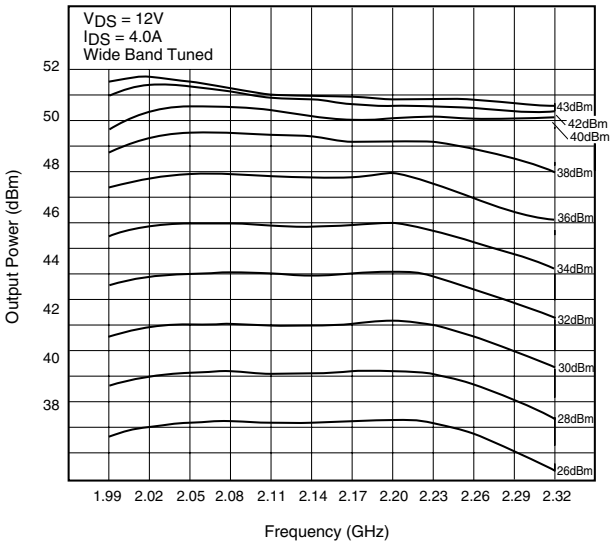
OUTPUT POWER vs. ACPR



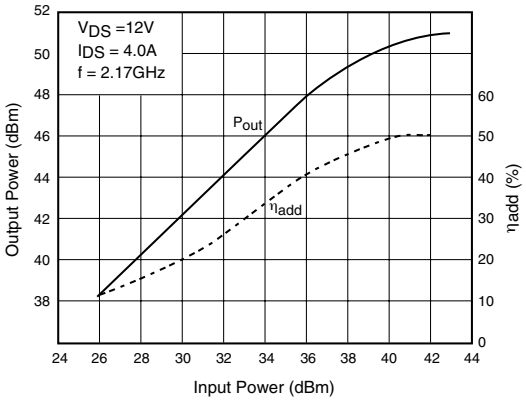
OUTPUT POWER vs. IMD



OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



S-PARAMETERS

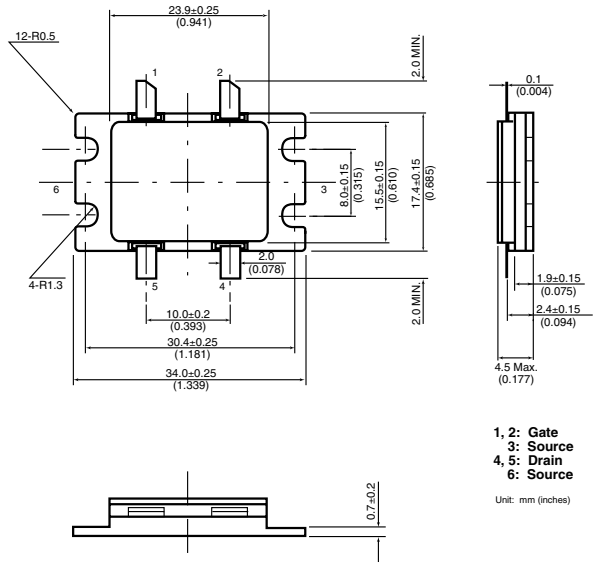
V_{DS} = 12V, I_{DS} = 2000mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1000	.930	156.2	.455	54.5	.010	72.9	.892	161.1
1100	.923	152.7	.526	49.4	.013	66.7	.875	158.4
1200	.901	148.4	.648	42.1	.013	60.6	.850	155.8
1300	.886	143.9	.810	31.1	.015	56.1	.823	153.1
1400	.855	138.0	1.035	17.1	.016	46.3	.796	150.7
1500	.813	131.0	1.351	0.5	.019	28.1	.763	148.7
1600	.753	121.1	1.798	-19.6	.021	4.2	.738	146.5
1700	.653	106.2	2.412	-43.9	.023	-33.4	.721	142.2
1800	.468	77.4	3.261	-73.8	.031	-76.4	.677	134.2
1900	.207	-11.6	3.968	-114.9	.042	-126.2	.520	125.6
2000	.458	-124.0	3.749	-158.0	.047	-176.8	.369	140.7
2100	.668	-162.2	3.006	168.6	.045	147.0	.429	155.8
2200	.745	175.8	2.427	145.8	.039	124.5	.502	154.3
2300	.761	158.8	2.122	127.1	.036	100.6	.535	148.2
2400	.749	142.4	2.049	111.2	.034	85.9	.548	139.7
2500	.716	126.3	2.119	94.1	.031	65.1	.534	130.0
2600	.658	102.0	2.264	71.4	.034	37.7	.500	116.1
2700	.591	66.0	2.434	43.1	.035	-3.3	.455	94.5
2800	.553	14.6	2.526	10.3	.044	-53.7	.405	59.0
2900	.613	-39.8	2.347	-29.3	.049	-90.4	.400	9.0
3000	.701	-80.3	1.765	-67.7	.042	-117.2	.480	-39.5
3100	.766	-107.6	1.180	-95.2	.045	-128.4	.595	-73.6
3200	.803	-126.5	.820	-114.6	.047	-127.8	.694	-97.2
3300	.826	-140.5	.622	-127.6	.058	-136.8	.772	-114.0
3400	.839	-151.8	.500	-140.7	.069	-135.3	.822	-126.6
3500	.844	-161.6	.420	-149.7	.080	-145.7	.858	-136.9
3600	.820	-170.9	.366	-156.5	.096	-146.2	.880	-145.5
3700	.817	-175.9	.369	-163.6	.098	-152.4	.898	-152.7
3800	.816	175.6	.360	-172.0	.124	-157.2	.900	-158.8
3900	.793	167.0	.380	179.1	.128	-158.2	.905	-164.8
4000	.757	157.5	.387	166.8	.155	-164.5	.904	-169.8

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 "IU"



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

Unit: mm (inches)