FLU35ZM

L-Band Medium & High Power GaAs FET

FEATURES
- High Output Power: P1dB=35.5dBm(typ.)
- High Gain: G1dB=11.5dB(typ.)
- Low Cost Plastic(SMT) Package
- Tape and Reel Available

DESCRIPTION

The FLU35ZM is a GaAs FET designed for base station and CPE application up to a 4.0GHz frequency range. This is a new product series using a plastic surface mount package that has been optimized for high volume cost driven applications.
Eudyna's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25°C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	15	V
Gate-Source Voltage	V_{GS}	-5	V
Total Power Dissipation	P_T	20.8	W
Storage Temperature	T_{stg}	-55 to +150	°C
Channel Temperature	T_{ch}	175	°C

RECOMMENDED OPERATING CONDITION(Case Temperature Tc=25°C)

Item	**Symbol**	**Condition**	**Unit**
DC Input Voltage	V_{DS}	≤10	V
Channel Temperature	T_{ch}	≤ 145	°C
Forward Gate Current	I_{gsf}	≤19.4	mA
Reverse Gate Current	I_{gsr}	≥-2.0	mA
Gate Resistance	R_g	100	Ω

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	**Symbol**	**Test Conditions**	**Limit**			**Unit**
			Min.	**Typ.**	**Max.**	
Drain Current	I_{DSS}	V_{DS}=5V, V_{GS}=0V	-	1200	1800	mA
Transconductance	gm	V_{DS}=5V, I_{DS}=800mA	-	600	-	mS
Pinch-off Voltage	V_p	V_{DS}=5V, I_{DS}=60mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}=-60uA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS}=10V f=2.0GHz I_{DS}=0.6I_{DSS}(Typ.)	34.5	35.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		10.5	11.5	-	dB
Thermal Resistance	R_{th}	Channel to Case	-	5	6	°C /W

CASE STYLE: ZM

G.C.P.:Gain Compression Point

Note1: Product supplied to this specification are 100% DC performance tested.
Note2: The RF parameters are measured on a lot basis by sample testing 10 pcs/lot.
Acceptance Criteria:(accept/reject)=(0/1). Any lot failure shall be 100% retested.

ESD	Class Ⅲ	2000 V～

Note : Based on EIAJ ED-4701 C-111A (C=100pF, R=1.5kΩ)

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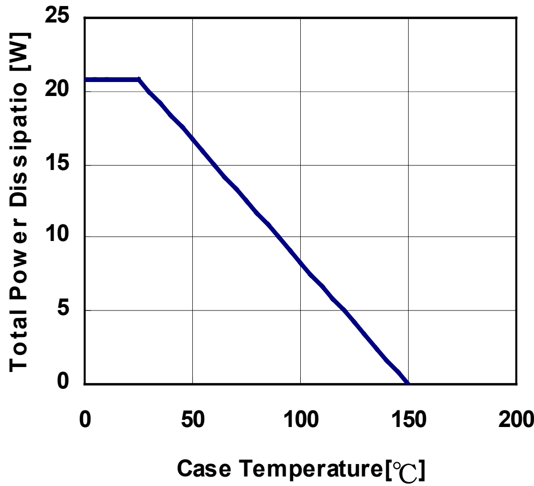
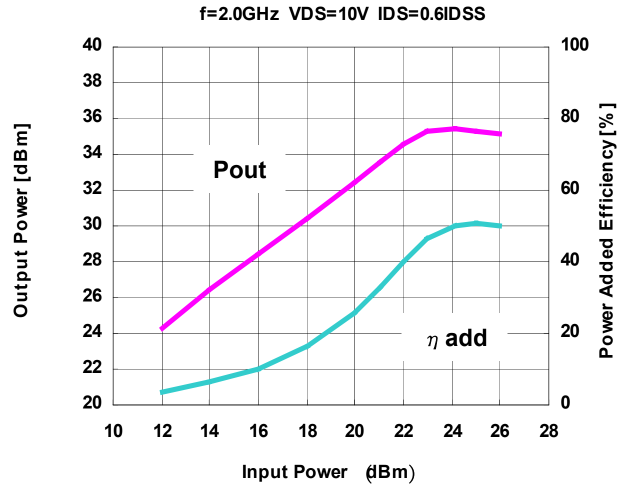
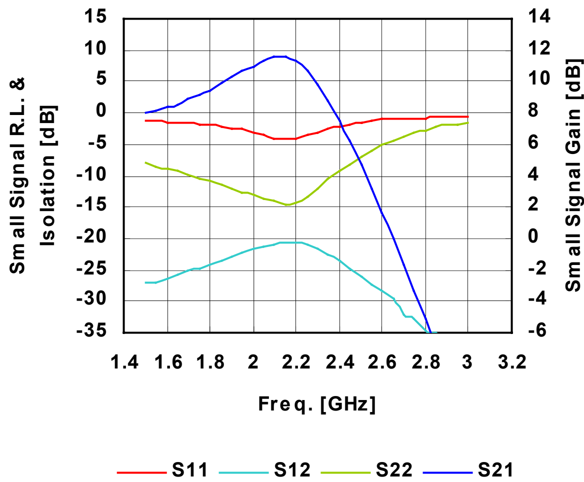


POWER DERATING CURVE
Total Power Dissipatio [W]
25
20
15
10
5
0
0
50
100
150
200
Case Temperature[℃]

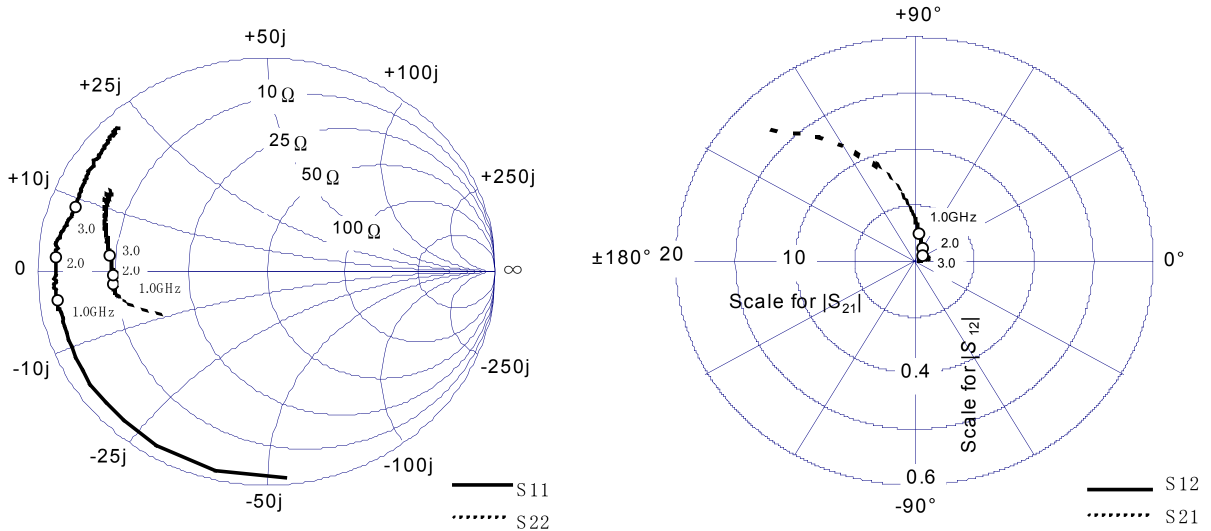


OUTPUT POWER , POWER ADDED EFFICIENCY
vs. INPUT POWER
f=2.0GHz VDS=10V IDS=0.6IDSS
Output Power [dBm]
Power Added Efficiency [%]
Pout
η add
40
38
36
34
32
30
28
26
24
22
20
100
80
60
40
20
0
10
12
14
16
18
20
22
24
26
28
Input Power (dBm)



SMALL SIGNAL R.L. vs FREQUENCY
Wide Band Tuning (1.8GHz ～2.2GHz)
Small Signal R.L. & Isolation [dB]
Small Signal Gain [dB]
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
14
12
10
8
6
4
2
0
-2
-4
-6
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3
3.2
Freq. [GHz]
S11
S12
S22
S21

■ S-PARAMETER



VDS=10V, IDS=0.6IDSS(TYP.)

Freq	S11		S21		S12		S22	
[GHz]	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.5	0.92	-157.14	4.75	94.86	0.03	14.31	0.67	-172.46
1	0.92	-171.65	2.45	81.26	0.03	9.28	0.67	-175.16
1.5	0.92	-178.09	1.69	70.63	0.03	7.87	0.66	-176.48
2	0.92	175.59	1.32	61.24	0.03	11.56	0.67	-178.45
2.5	0.92	168.62	1.08	50.14	0.03	10.17	0.67	178.10
3	0.89	159.87	0.90	39.03	0.03	16.31	0.69	173.63
3.5	0.90	150.98	0.76	27.30	0.03	13.26	0.71	167.99
4	0.91	143.89	0.64	16.94	0.03	14.12	0.74	162.05
4.5	0.93	137.22	0.54	6.74	0.03	7.95	0.77	156.46
5	0.93	133.89	0.45	-1.01	0.03	9.18	0.78	151.30

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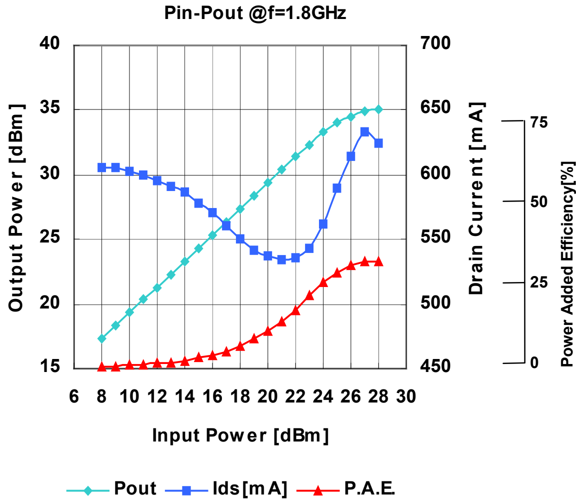
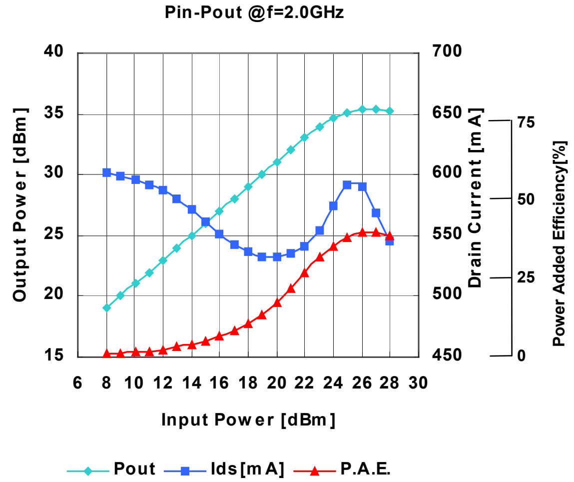
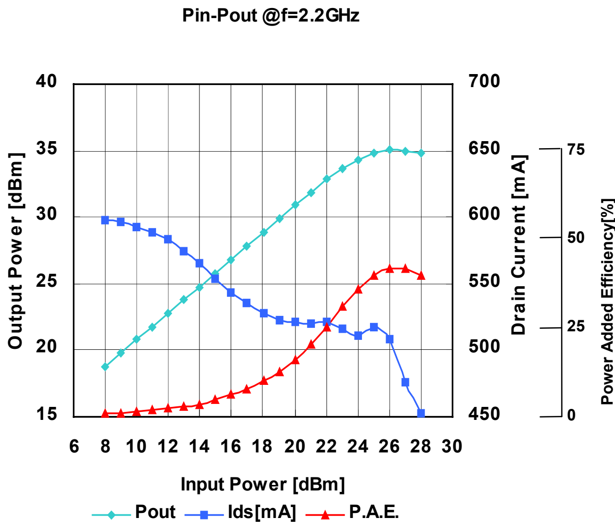
OUTPUT POWER , DRAIN CURRENT vs. INPUT POWER

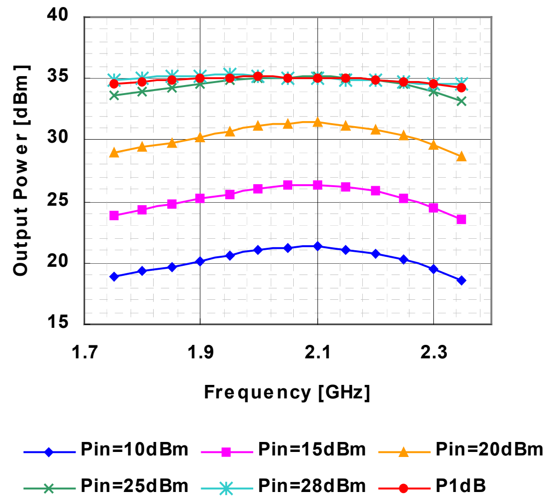
@ VDS=10V, IDS(DC)=0.6IDSS







OUTPUT POWER vs. FREQUENCY



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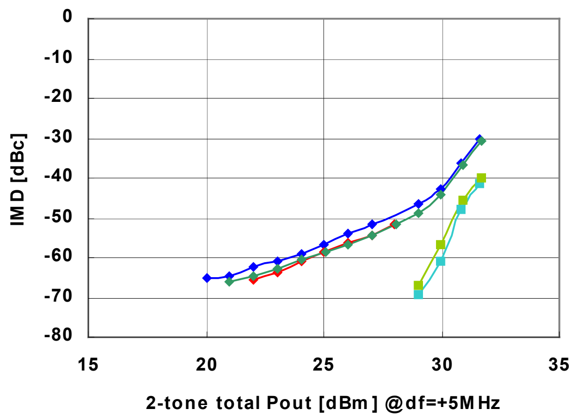
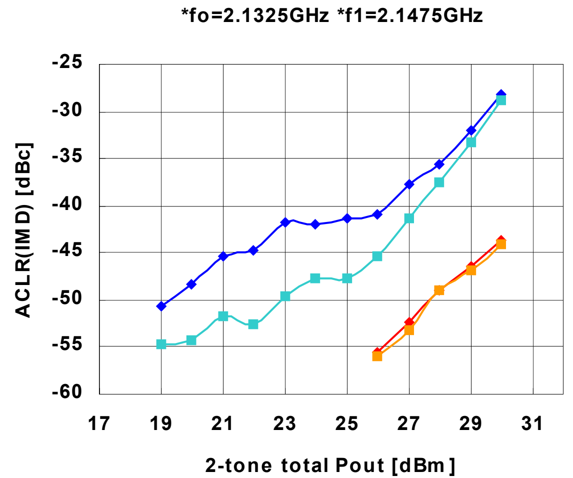
@ VDS=10V, IDS(DC)=0.6IDSS

IMD vs OUTPUT POWER(2-tone)



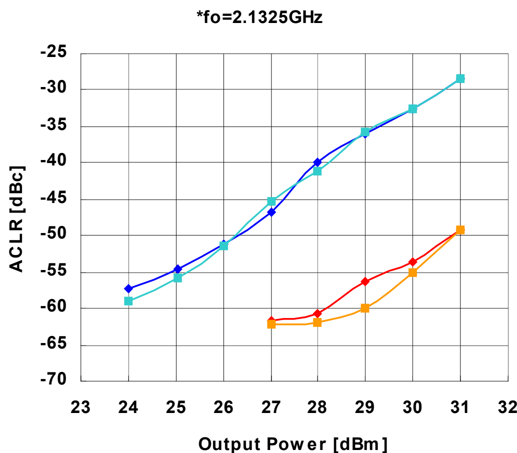
W-CDMA 2-CARRIER IMD(ACLR)

*fo=2.1325GHz *f1=2.1475GHz



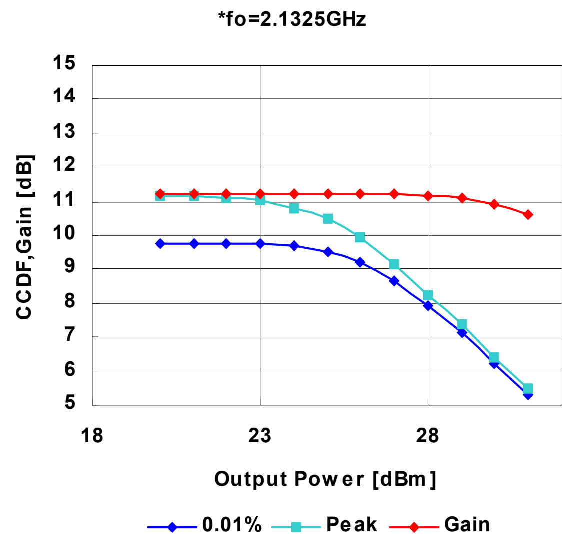
W-CDMA SINGLE CARRIER ACLR

*fo=2.1325GHz



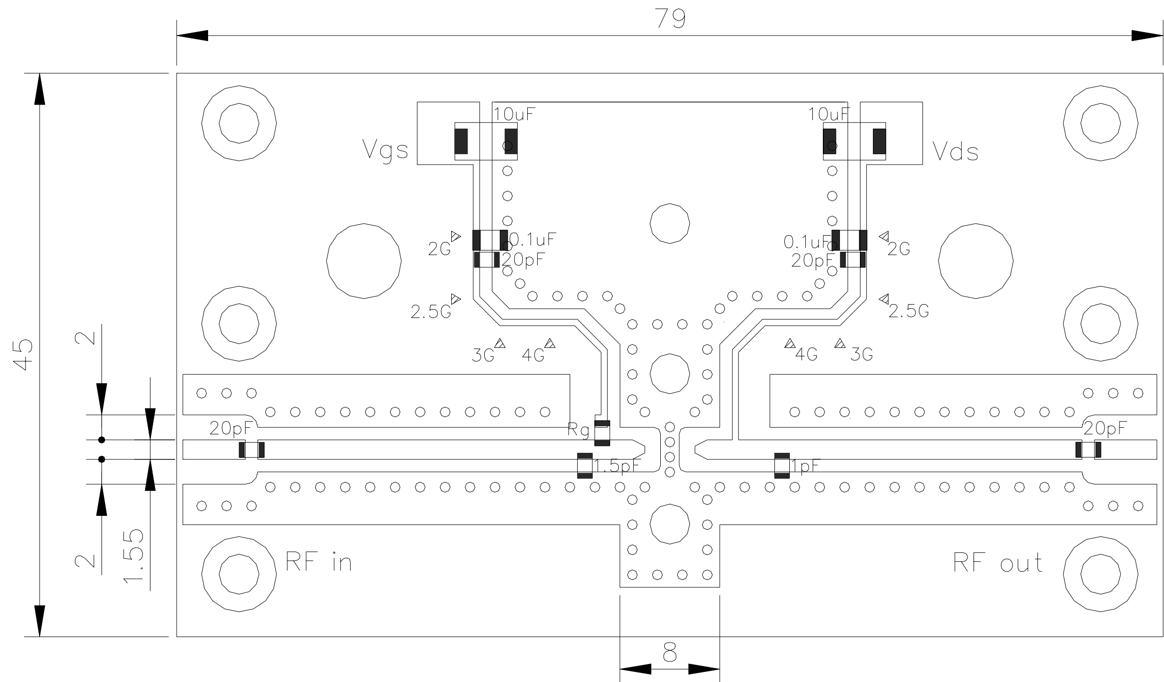
W-CDMA SINGLE CARRIER CCDF AND GAIN

*fo=2.1325GHz



Note : *All signal are W-CDMA modulation at 3GPP3.4.12-00 BS-1 64ch non clipping.

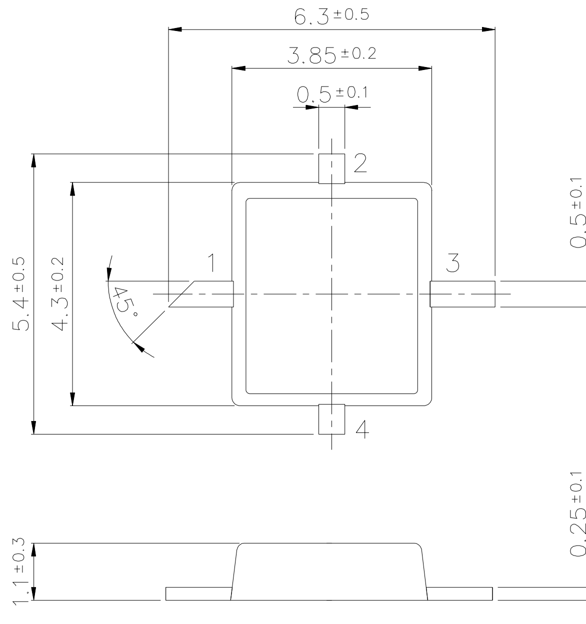
■ Recommended Bias Circuit and Internal Block Diagram

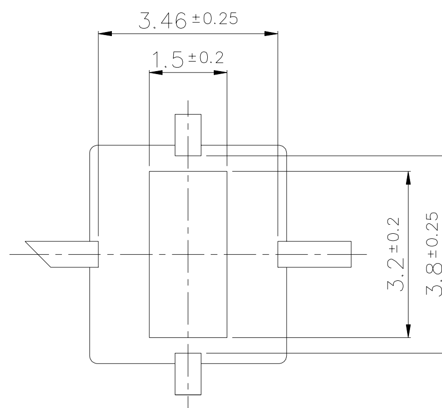


<Board information>
εr=3.5 , t=0.8

* Board was tuned for wide band performance that is presented in page 4 and 5.

■ Package Outline





1 : Gate
2. Source
3. Drain
4. Source
Unit : mm

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- 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.
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