

FLU17ZM

L-Band Medium & High Power GaAs FET

FEATURES

- High Output Power: P_{1dB}=32.5dBm(typ.)
- High Gain: G_{1dB}=12.5dB(typ.)
- Low Cost Plastic(SMT) Package
- Tape and Reel Available

DESCRIPTION

The FLU17ZM is a GaAs FET designed for base station and CPE applications. This is a new product series using a plastic surface mount package that has been optimized for high volume cost driven applications. Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.



ABSOLUTE MAXIMUM RATINGS (Case Temperature T_c=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	8.3	W
Storage Temperature	T _{stg}	-55 to +150	°C
Channel Temperature	T _{ch}	150	°C

Recommended Operating Condition (Case Temperature T_c=25°C)

Item	Symbol	Condition	Unit
DC Input Voltage	V _{DS}	≤ 10	V
Channel Temperature	T _{ch}	≤ 145	°C
Forward Gate Current	I _{gsf}	≤ 9.6	mA
Reverse Gate Current	I _{gsr}	≥ -1.0	mA
Gate Resistance	R _g	200	Ω

ELECTRICAL CHARACTERISTICS (Case Temperature T_c=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	600	900	mA
Transconductance	g _m	V _{DS} =5V, I _{DS} =400mA	-	300	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =30mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-30uA	-5	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V, f=2.0GHz, I _{DS} =0.6I _{DSS} (Typ.)	31.5	32.5	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}		11.5	12.5	-	dB
Thermal Resistance	R _{th}	Channel to Case	-	12	15	°C/W

CASE STYLE: ZM

G.C.P.: Gain Compression Point

Note 1: Product supplied to this specification are 100% DC performance tested.

Note 2: 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.

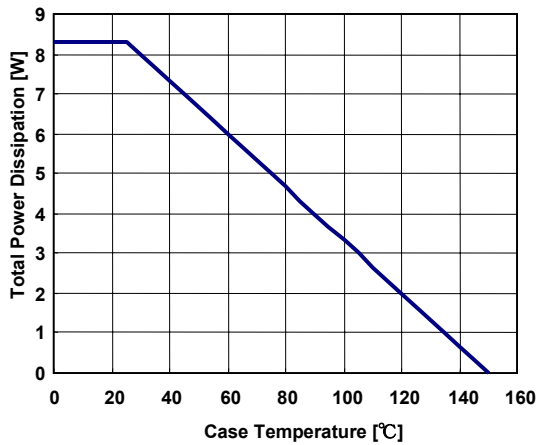
ESD	Class II	500 ~ 1999 V
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Note : Based on EIAJ ED-4701 C-111A (C=100pF,R=1.5kΩ)

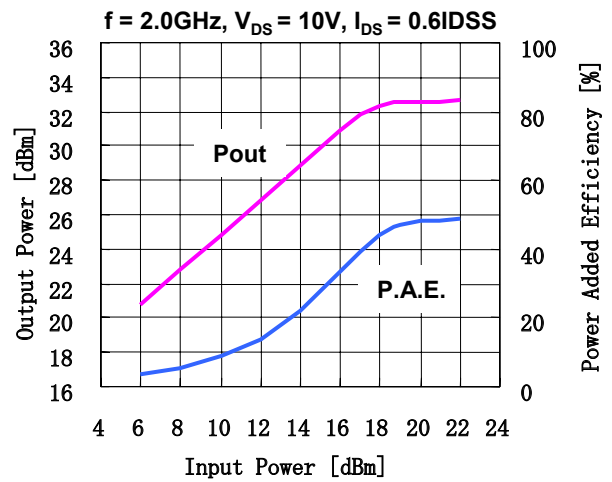
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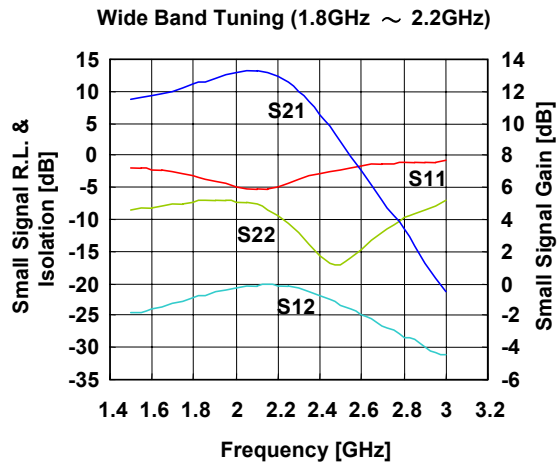
POWER DERATING CURVE



OUTPUT POWER & POWER ADDED EFFICIENCY vs. INPUT POWER



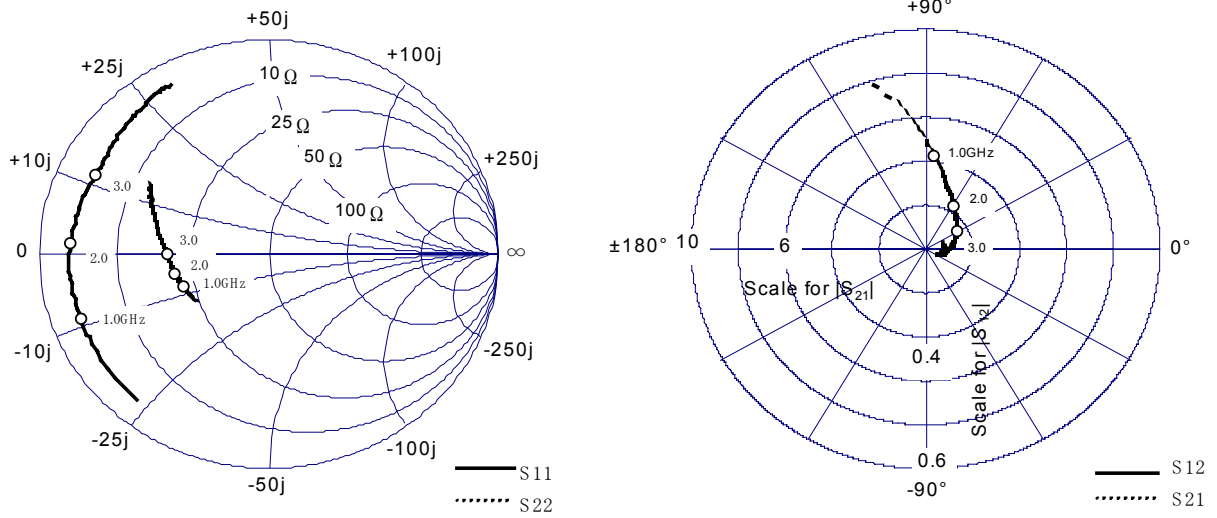
SMALL SINGLE R.L. vs FREQUENCY



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■ S-PARAMETER



$V_{DS} = 10V, I_{DS} = 360mA$

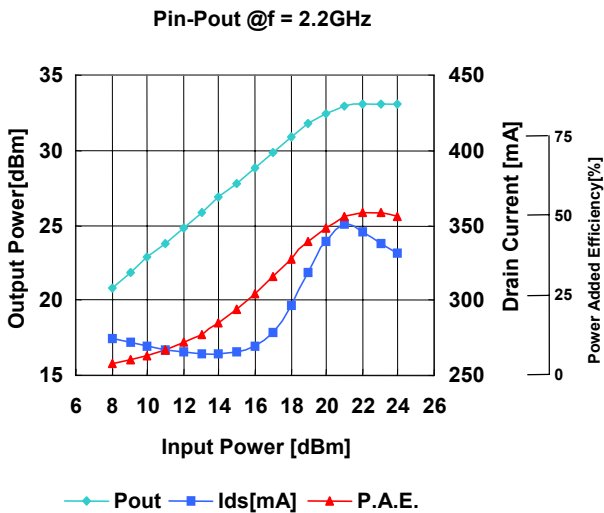
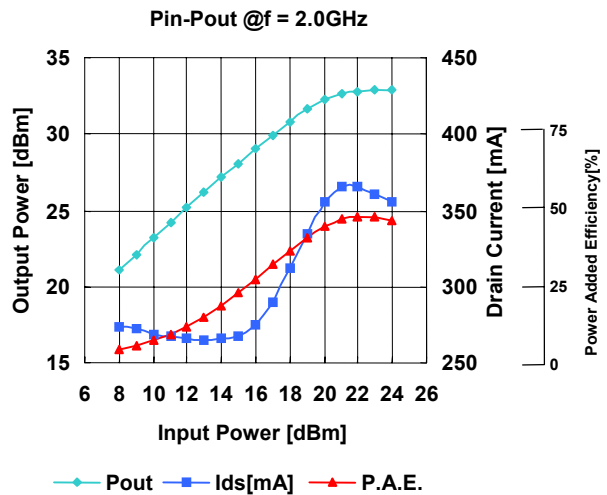
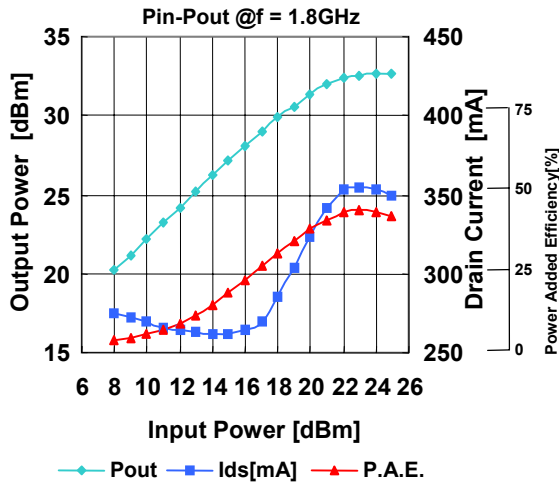
Freq [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.5	0.89	-130.40	7.82	106.20	0.05	22.81	0.38	-144.06
1	0.87	-159.47	4.26	84.91	0.05	10.25	0.40	-157.62
1.5	0.87	-172.30	2.95	71.11	0.05	3.23	0.41	-162.28
2	0.87	176.73	2.31	58.41	0.05	-2.81	0.42	-166.91
2.5	0.85	166.01	1.89	45.71	0.05	-10.38	0.43	-172.98
3	0.84	153.61	1.58	31.88	0.04	-11.34	0.44	179.73
3.5	0.85	142.11	1.33	18.68	0.04	-15.81	0.48	170.94
4	0.87	131.82	1.12	5.71	0.04	-20.61	0.52	162.31
4.5	0.89	124.40	0.94	-5.77	0.04	-22.32	0.57	154.52
5	0.90	118.39	0.79	-16.59	0.03	-26.62	0.61	147.78

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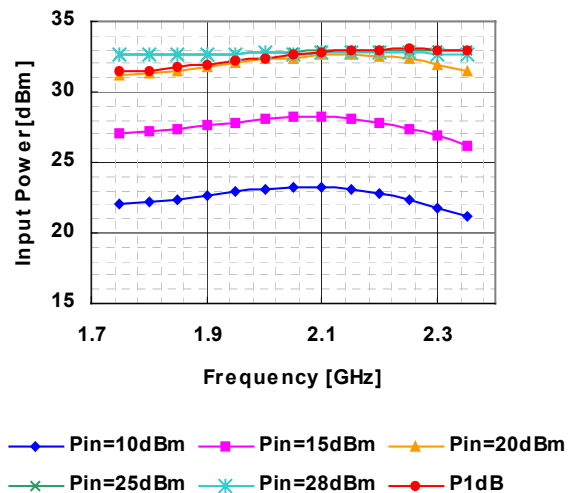
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OUTPUT POWER, DRAIN CURRENT vs. INPUT POWER

@ $V_{DS} = 10V$, $I_{DS} = 0.6IDSS$



OUTPUT POWER vs. FREQUENCY

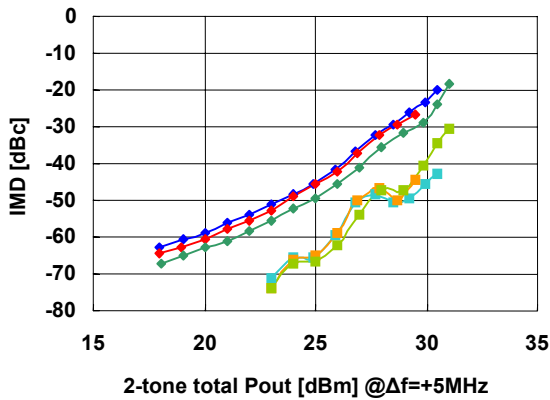


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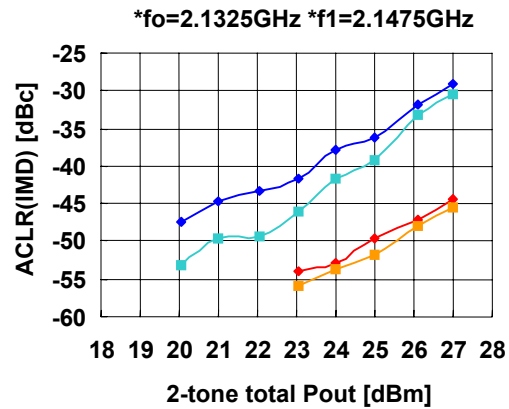
@ $V_{DS} = 10V$, $I_{DS} = 0.6IDSS$

IMD vs OUTPUT POWER(2-tone)



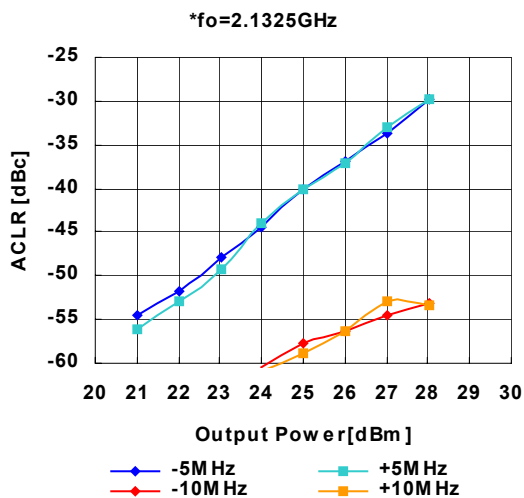
◆ IM3@1.8GHz ■ IM5@1.8GHz ● IM3@2.0GHz
■ IM5@2.0GHz ● IM3L dBc ■ IM5L dBc

W-CDMA, 2-CARRIER IMD(ACLR)



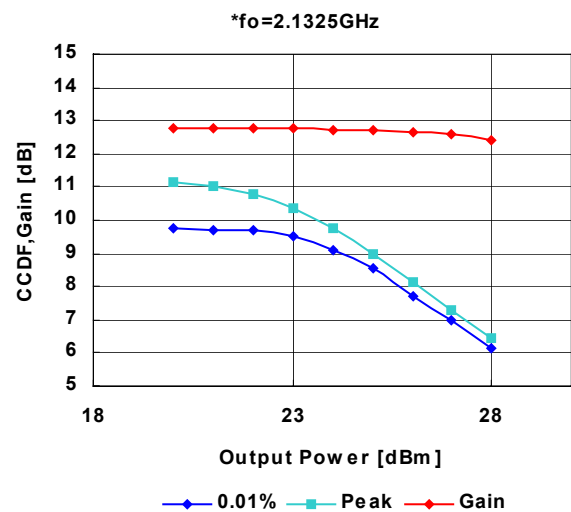
◆ IM3-L ■ IM3-U ● IM5-L ■ IM5-U

W-CDMA SINGLE CARRIER ACLR



◆ -5M Hz ■ +5M Hz
● -10M Hz ■ +10M Hz

W-CDMA SINGLE CARRIER CCDF AND GAIN



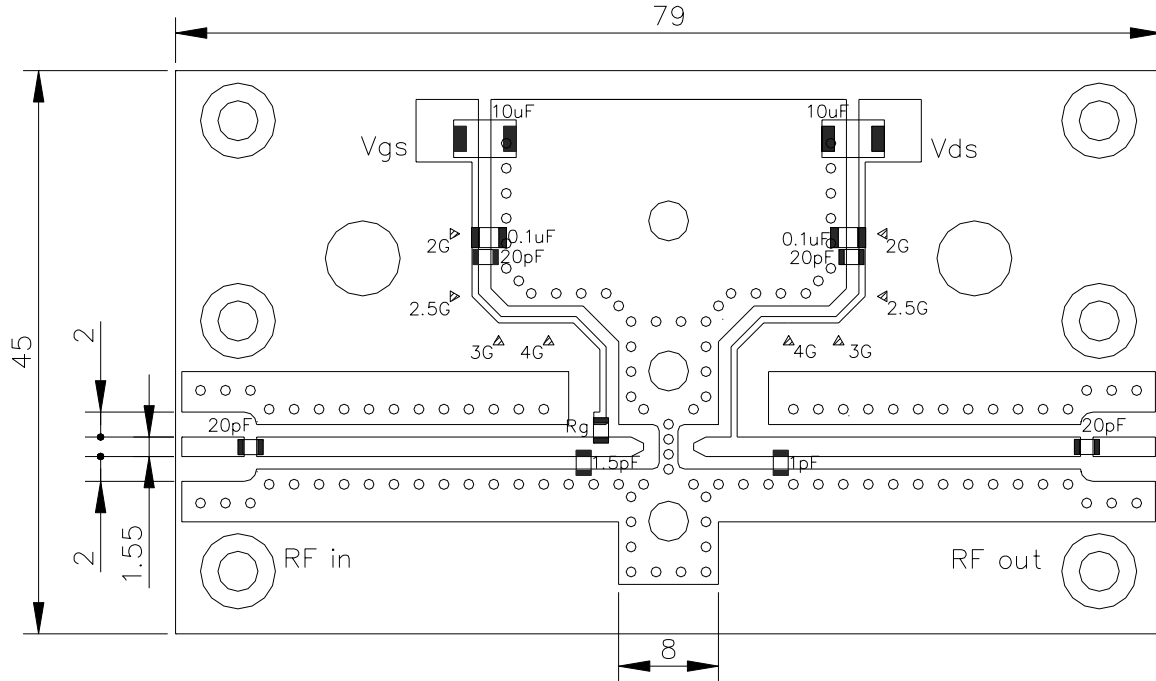
◆ 0.01% ■ Peak ● Gain

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

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Recommended Bias Circuit and Internal Block Diagram



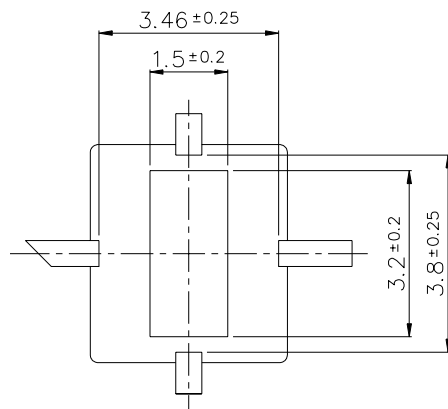
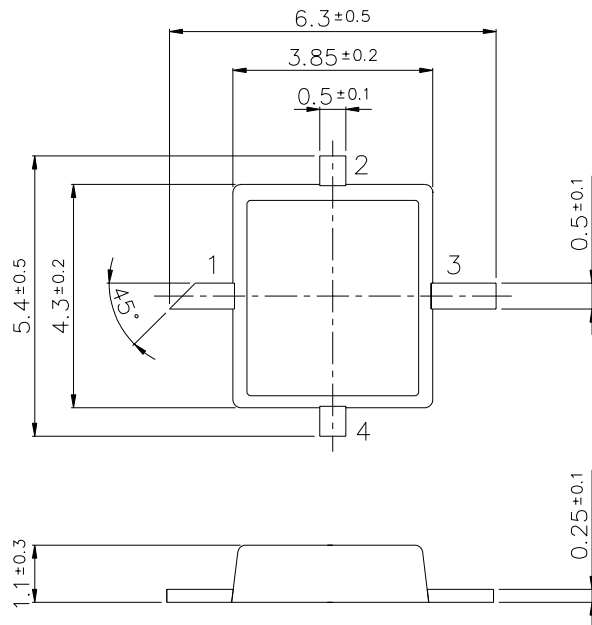
<Board information>
 $\epsilon_r=3.5$, $t=0.8$

* Board was tuned for wide band performance with data shown on pages 4 and 5.

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■ Package Outline



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

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