



# FLU10ZME1

## L-Band Medium & High Power GaAs FET

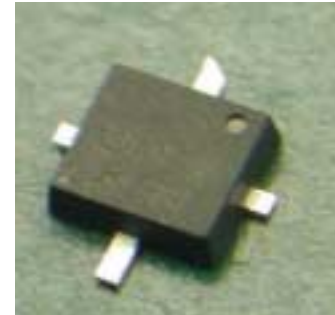
### FEATURES

- High Output Power: P1dB=29.5dBm(typ.)
- High Gain: G1dB=13.0dB(typ.)
- Low Cost Plastic(SMT) Package
- Tape and Reel Available

### DESCRIPTION

The FLU10ZME1 is a GaAs FET designed for base station and CPE application up to a 3.0GHz frequency range. This is a new product series using a plastic surface mount package that has been optimized for high volume cost driven applications.

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



### ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25deg.C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	15	V
Gate-Source Voltage	V <sub>GS</sub>	-5	V
Total Power Dissipation	P <sub>T</sub>	6.9	W
Storage Temperature	T <sub>stg</sub>	-55 to +150	deg.C
Channel Temperature	T <sub>CH</sub>	175	deg.C

### RECOMMENDED OPERATING CONDITION(Case Temperature Tc=25deg.C)

Item	Symbol	Condition	Unit
DC Input Voltage	V <sub>DS</sub>	< 10	V
Channel Temperature	T <sub>ch</sub>	< 145	deg.C
Forward Gate Current	I <sub>GF</sub>	< 4.8	mA
Reverse Gate Current	I <sub>GR</sub>	> -0.5	mA
Gate Resistance	R <sub>g</sub>	400	ohm

### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25deg.C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V	-	300	450	mA
Trans Conductance	gm	V <sub>DS</sub> =5V, I <sub>DS</sub> =200mA	-	150	-	mS
Pinch-off Voltage	V <sub>p</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =15mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> =-15μA	-5	-	-	V
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DS</sub> =10V f=2.0GHz	28.5	29.5	-	dBm
Power Gain at 1dB G.C.P.	G <sub>1dB</sub>	I <sub>DS</sub> =0.6I <sub>DSS</sub> (Typ.)	12.0	13.0	-	dB
Thermal Resistance	R <sub>th</sub>	Channel to Case	-	15	18	deg.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 II	500 to 1999 V
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Note : Based on EIAJ ED-4701 C-111A (C=100pF,R=1.5kohm)

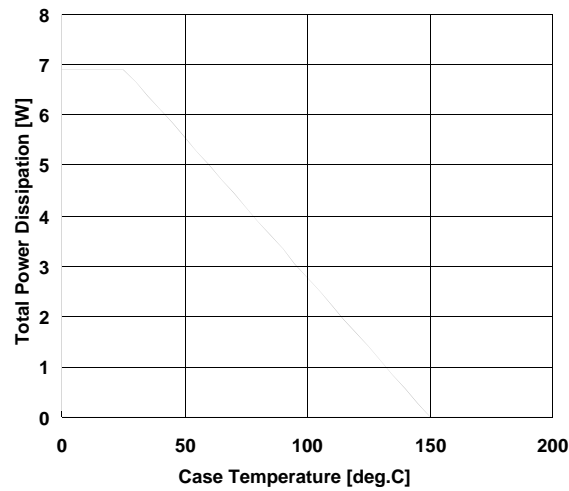




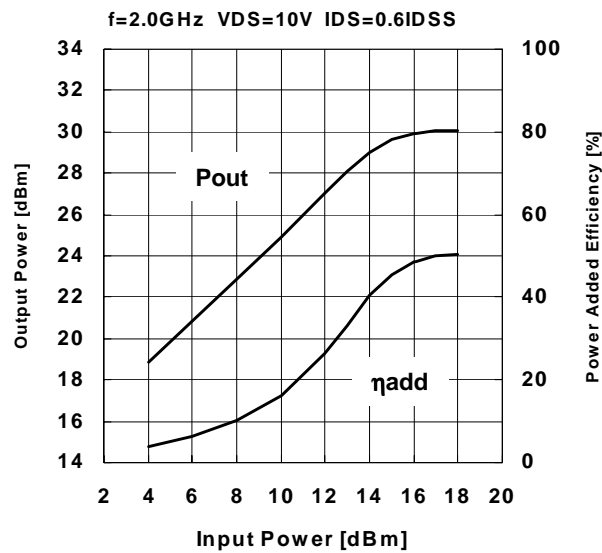
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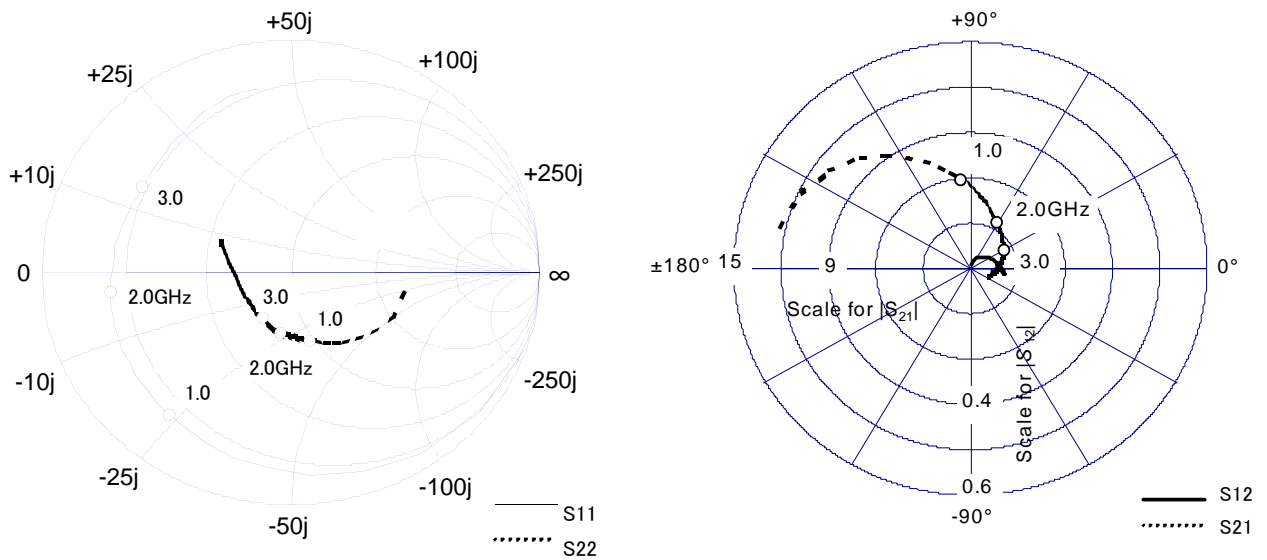
## POWER DERATING CURVE



## OUTPUT POWER , POWER ADDED EFFICIENCY vs. INPUT POWER



### ■ S-PARAMETER



VDS=10V , IDS=180mA

Freq. [GHz]	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.5	0.88	-82.82	9.02	126.68	0.05	48.61	0.37	-52.39
1	0.78	-128.10	5.90	96.81	0.06	27.98	0.30	-78.22
1.5	0.75	-153.80	4.31	76.65	0.07	19.62	0.27	-91.11
2	0.72	-174.63	3.45	60.18	0.07	13.94	0.25	-101.36
2.5	0.71	165.70	2.85	43.48	0.08	8.34	0.22	-114.34
3	0.69	145.11	2.41	27.24	0.08	4.74	0.20	-128.63
3.5	0.73	126.72	2.05	11.34	0.08	-1.38	0.19	-153.74
4	0.76	112.29	1.74	-3.63	0.08	-7.63	0.22	179.95
4.5	0.79	100.63	1.48	-17.87	0.09	-13.21	0.27	161.06
5	0.80	93.48	1.25	-30.30	0.09	-16.94	0.34	146.70



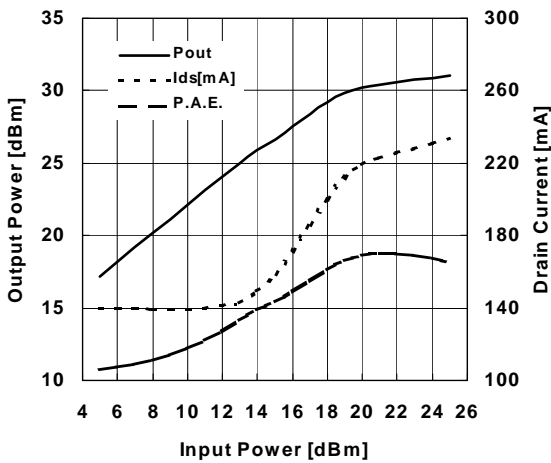
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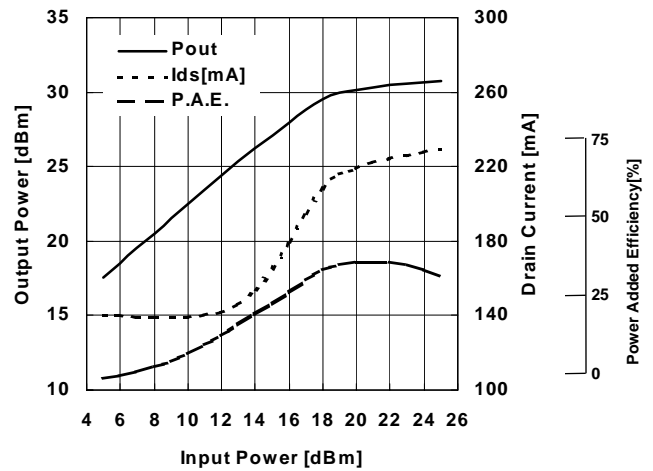
OUTPUT POWER , DRAIN CURRENT vs. INPUT POWER with Wide band tuning condition.

@  $V_{DS}=10V$   $I_{DS}(DC)=150mA$   $V_{GS}(DC)=-0.9V$

Pin-Pout,I<sub>dd</sub>&P.A.E @f=1.8GHz

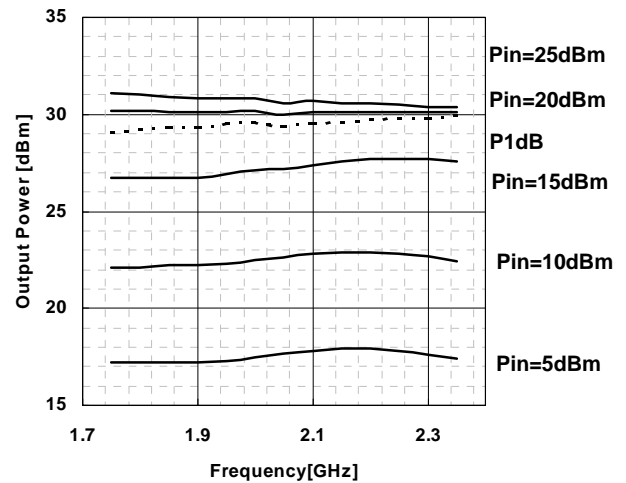
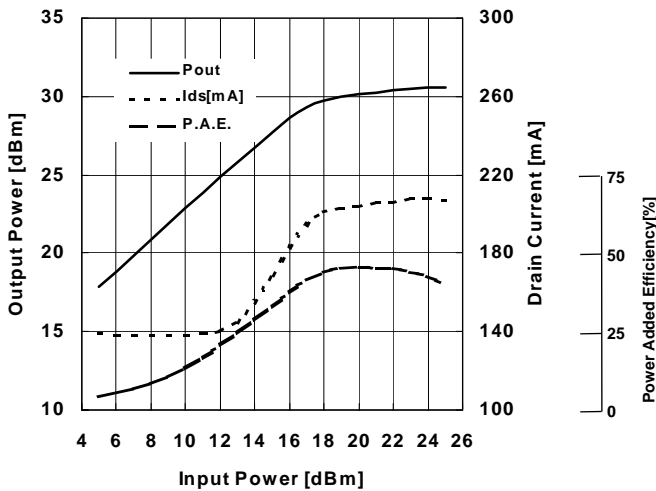


Pin-Pout,I<sub>dd</sub>&P.A.E @f=2.0GHz



## OUTPUT POWER vs. FREQUENCY

Pin-Pout,I<sub>dd</sub>&P.A.E @f=2.2GHz



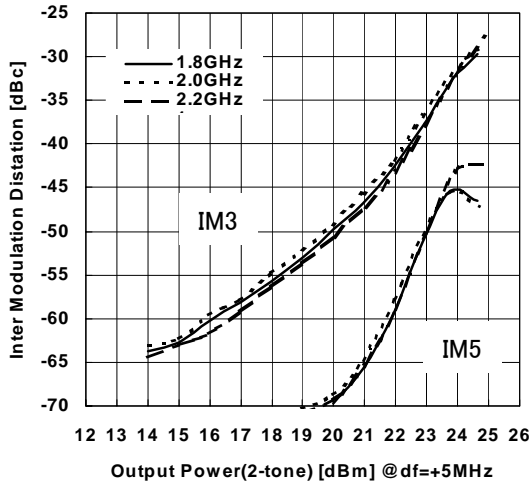


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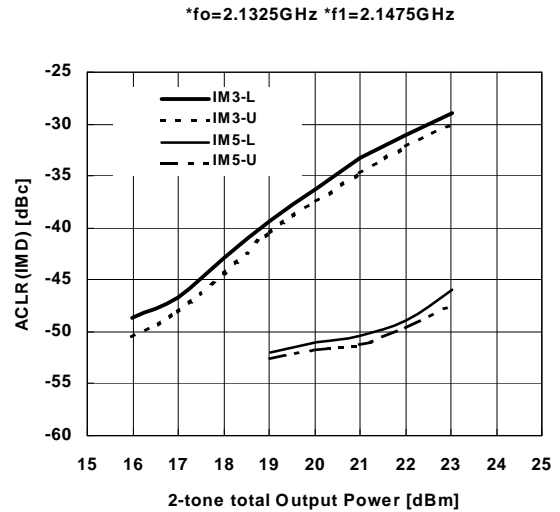
L-Band Medium & High Power GaAs FET

@ VDS=10V IDS(DC)=150mA VGS(DC)=-0.9V

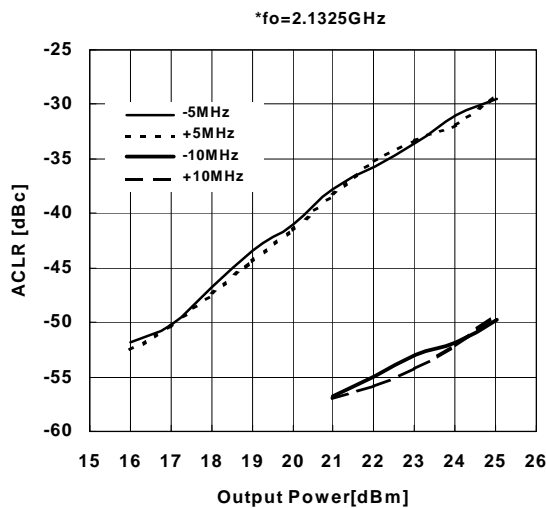
IMD vs OUTPUT POWER(2-tone)



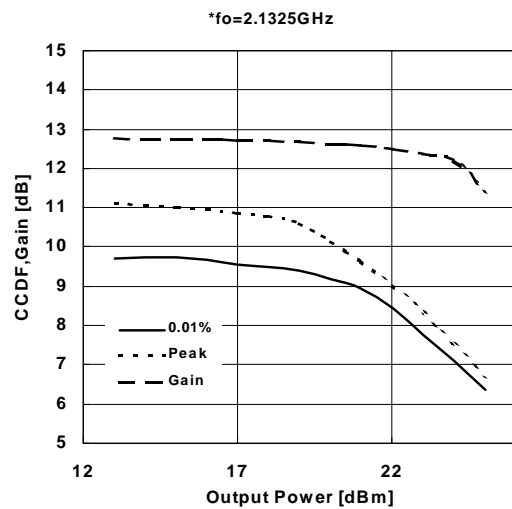
W-CDMA 2-CARRIER IMD(ACLR)



W-CDMA SINGLE CARRIER ACLR



W-CDMA SINGLE CARRIER CCDF AND GAIN



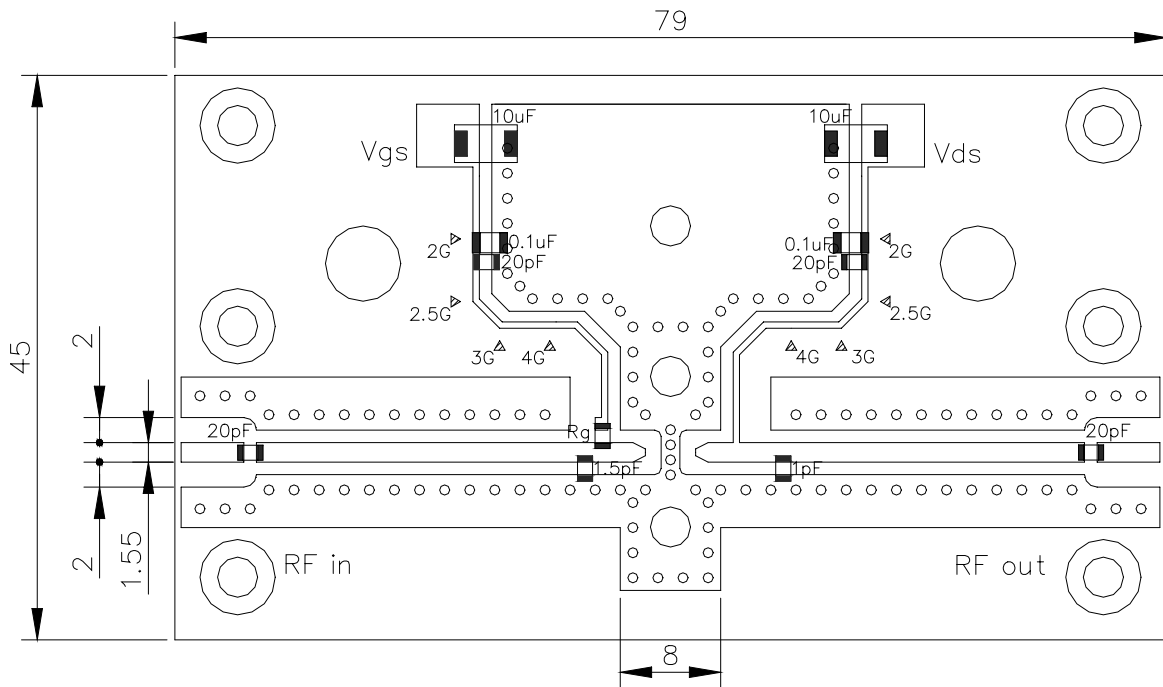
Note : \*All signal are W-CDMA modulation at 3GPP3.4.12-00 BS-1 64ch non clipping.  
All data was taken with the board tuned for wide band.



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## Recommended Bias Circuit and Internal Block Diagram (Wide band tuning condition)



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

Unit : mm

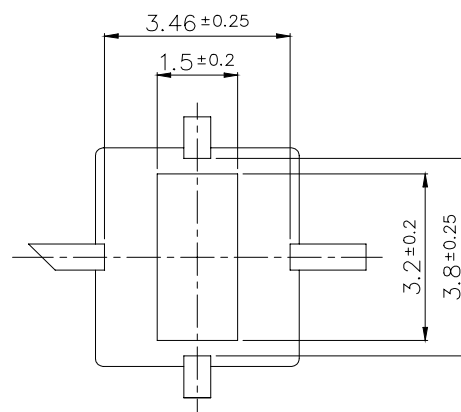
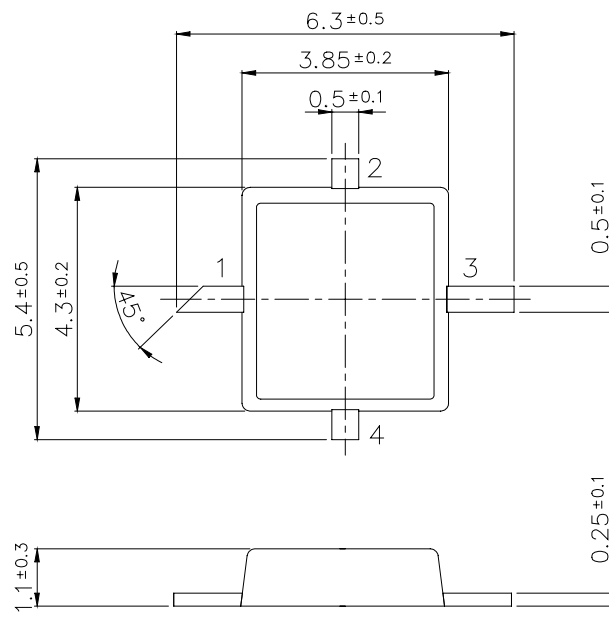
\* Board was tuned for wide band performance that is presented in page 4 and 5.



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## Package Outline



- 1 : Gate
  - 2. Sourc
  - 3. Drain
  - 4. Sourc
- Unit : m



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**For further information please contact:**

<http://global-sei.com/Electro-optic/about/office.html>

## CAUTION

This product contains **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.