



# FLU17ZME1

## L-Band Medium & High Power GaAs FET

### FEATURES

- High Output Power: P1dB=32.5dBm(typ.)
- High Gain: G1dB=12.5dB(typ.)
- Low Cost Plastic(SMT) Package
- Tape and Reel Available



### DESCRIPTION

The FLU17ZME1 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.

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

### ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25 deg.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>	8.3	W
Storage Temperature	T <sub>stg</sub>	-55 to +150	deg.C
Channel Temperature	T <sub>ch</sub>	150	deg.C

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

Item	Symbol	Condition	Unit
DC Input Voltage	V <sub>DS</sub>	≤10	V
Forward Gate Current	I <sub>GF</sub>	≤9.6	mA
Reverse Gate Current	I <sub>GR</sub>	≥-1.0	mA

### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25 deg.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	-	600	900	mA
Trans Conductance	g <sub>m</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =400mA	-	300	-	mS
Pinch-off Voltage	V <sub>p</sub>	V <sub>DS</sub> =5V, I <sub>DS</sub> =30mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> =-30μA	-5	-	-	V
Output Power at 1dB G.C.P.	P <sub>1dB</sub>	V <sub>DS</sub> =10V f=2.0GHz	31.5	32.5	-	dBm
Power Gain at 1dB G.C.P.	G <sub>1dB</sub>	I <sub>DS</sub> =0.6I <sub>DSS</sub> (Typ.)	11.5	12.5	-	dB
Thermal Resistance	R <sub>th</sub>	Channel to Case	-	12	15	deg.C/W

G.C.P.:Gain Compression Point

### CASE STYLE: ZM

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)

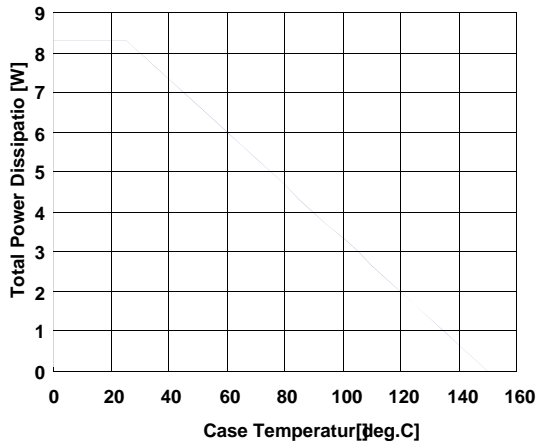




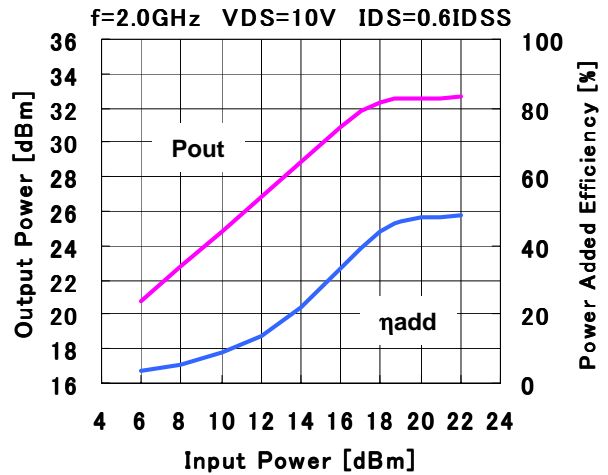
# FLU17ZME1

L-Band Medium & High Power GaAs FET

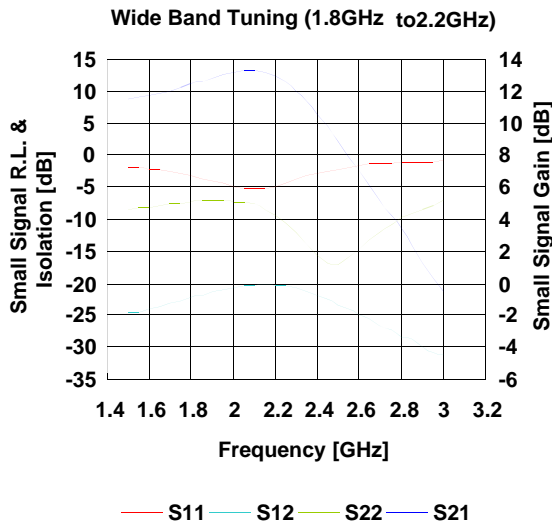
### POWER DERATING CURVE



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



### SMALL SIGNAL R.L. vs FREQUENCY

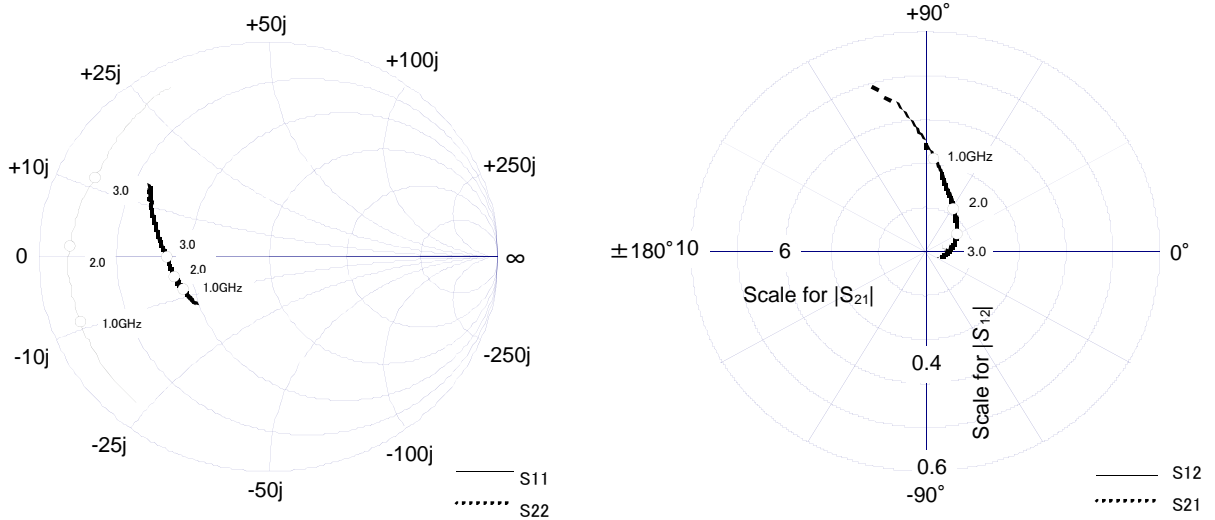




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## ■ S-PARAMETER



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

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

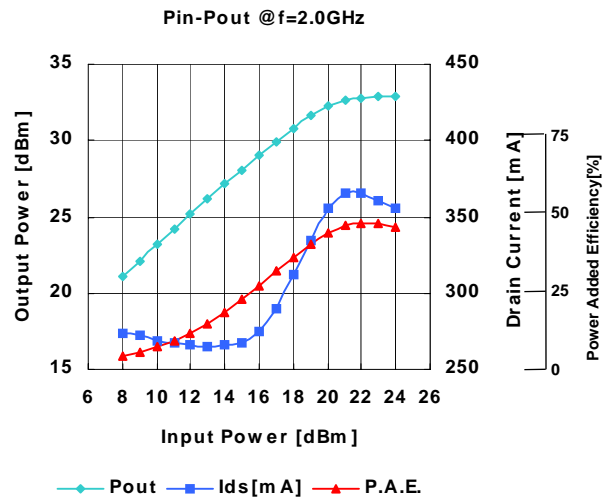
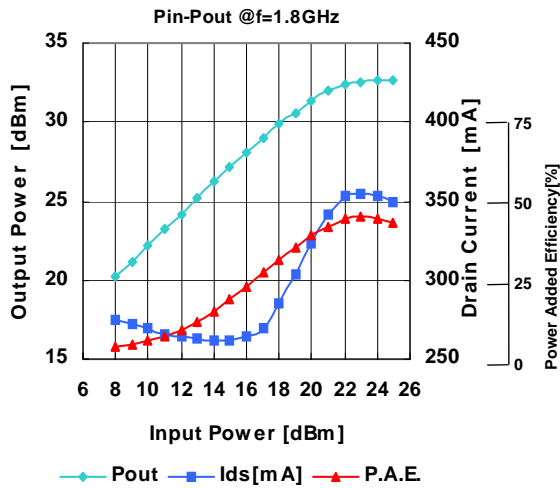


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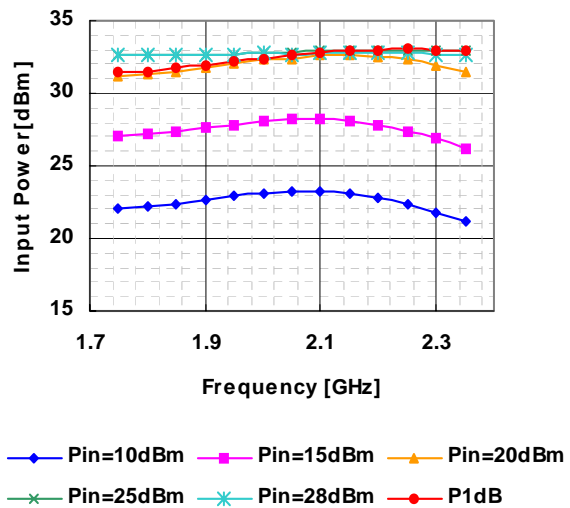
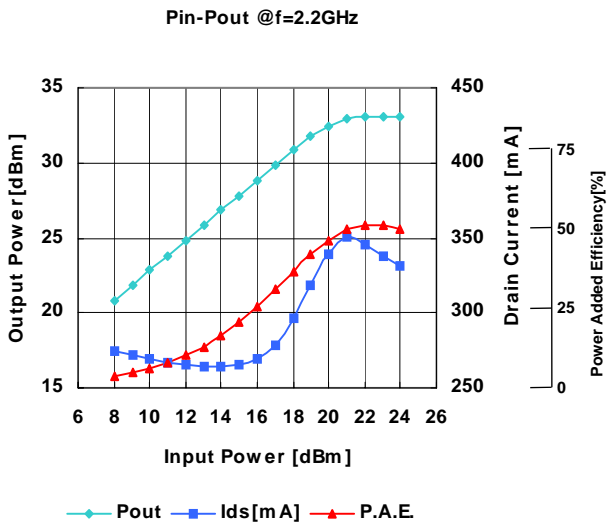
L-Band Medium & High Power GaAs FET

## OUTPUT POWER , DRAIN CURRENT vs. INPUT POWER

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



## OUTPUT POWER vs. FREQUENCY



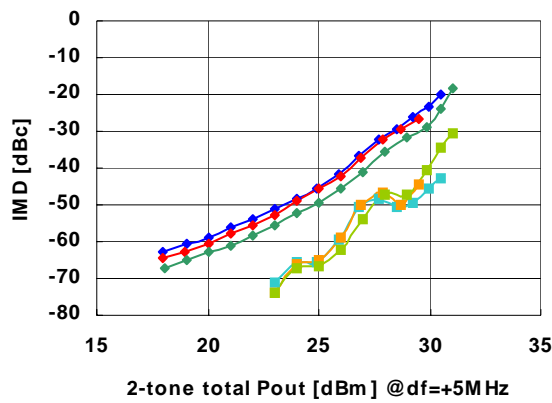


# FLU17ZME1

L-Band Medium & High Power GaAs FET

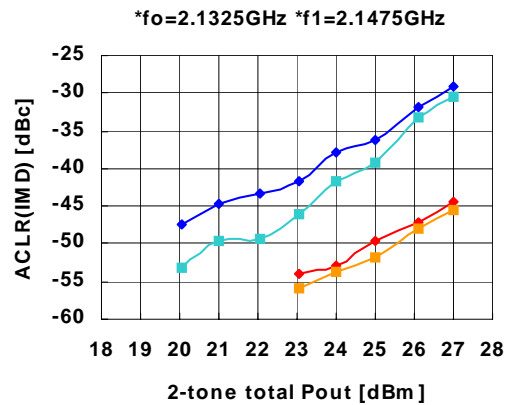
@ VDS=10V IDS(DC)=0.6IDSS

IMD vs OUTPUT POWER(2-tone)



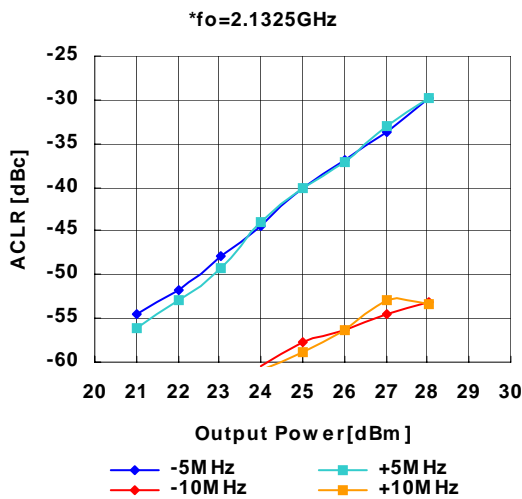
IM3@1.8GHz IM5@1.8GHz IM3@2.0GHz  
IM5@2.0GHz IM3L dBc IM5L dBc

W-CDMA 2-CARRIER IMD(ACLR)



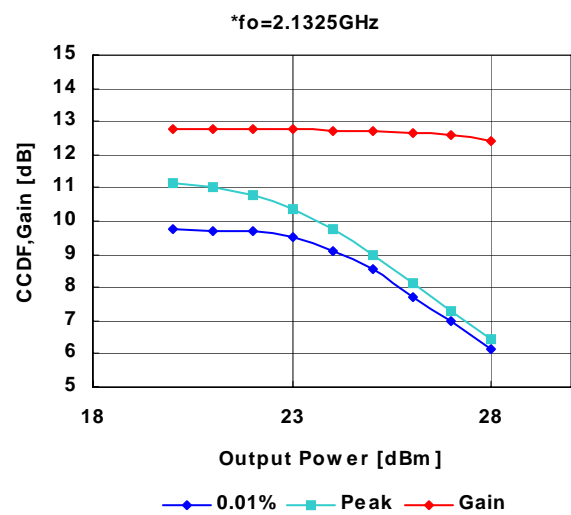
IM3-L IM3-U IM5-L IM5-U

W-CDMA SINGLE CARRIER ACLR



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

W-CDMA SINGLE CARRIER CCDF AND GAIN

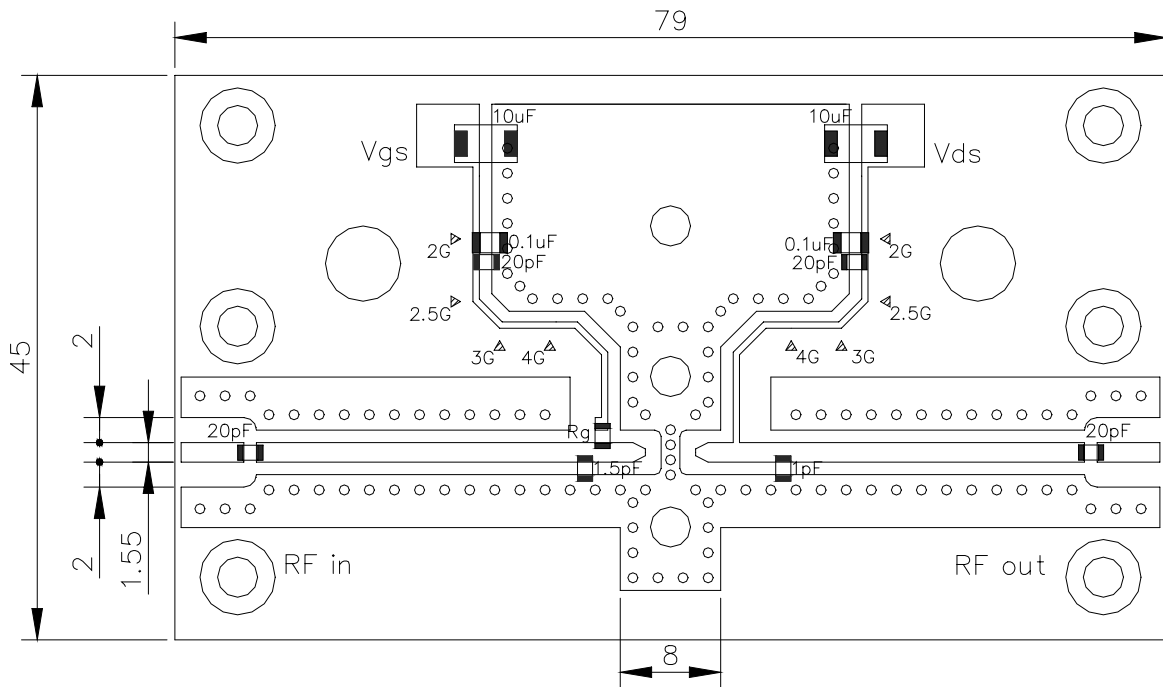




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## Recommended Bias Circuit and Internal Block Diagram



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

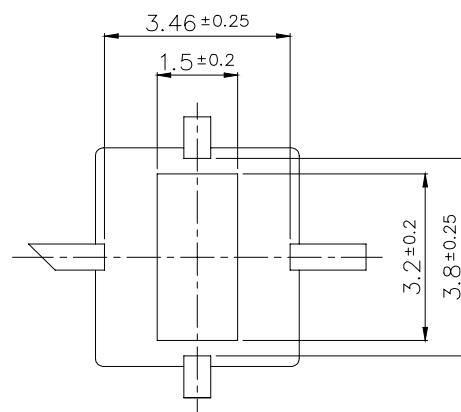
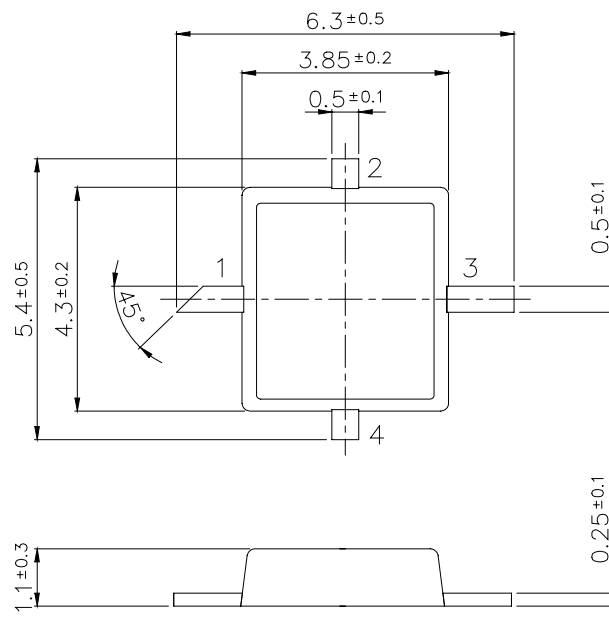
\* Board was tuned for wide band performance that is presented in page 4 and 5.



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## Package Outline



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



## **FLU17ZME1**

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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.