

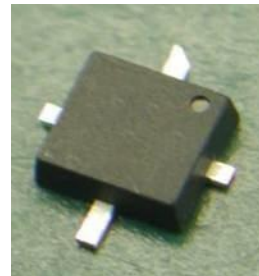
FEATURES

- 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 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.

SUMITOMO'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 _{DS}	15	V
Gate-Source Voltage	V _{GS}	-5	V
Total Power Dissipation	P _T	6.9	W
Storage Temperature	T _{stg}	-55 to +150	deg.C
Channel Temperature	T _{CH}	175	deg.C

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

Item	Symbol	Condition	Unit
DC Input Voltage	V _{DS}	≤ 10	V
Forward Gate Current	I _{GF}	≤ 4.8	mA
Reverse Gate Current	I _{GR}	≥ -0.5	mA
Gate Resistance	R _g	400	ohm
Channel Temperature	T _{ch}	≤ 145	deg.C

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	-	300	450	mA
Trans Conductance	gm	V _{DS} =5V, I _{DS} =200mA	-	150	-	mS
Pinch-off Voltage	V _p	V _{DS} =5V, I _{DS} =15mA	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} =-15μA	-5	-	-	V
Output Power at 1dB G.C.P.	P _{1dB}	V _{DS} =10V f=2.0GHz	28.5	29.5	-	dBm
Power Gain at 1dB G.C.P.	G _{1dB}	I _{DS} =0.6I _{DSS} (Typ.)	12.0	13.0	-	dB
Thermal Resistance	R _{th}	Channel to Case	-	15	18	deg.C/W

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.

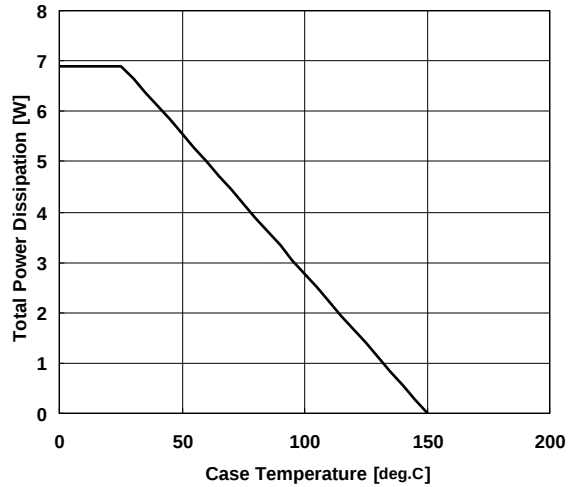
G.C.P.:Gain Compression Point

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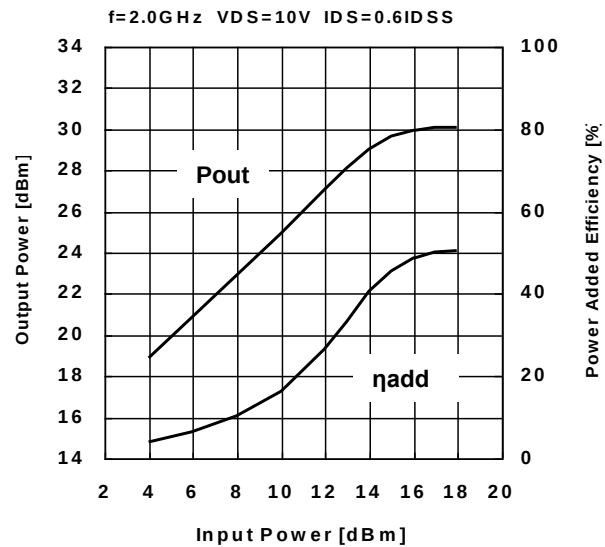
Note : Based on EIAJ ED-4701 C-111A (C=100pF,R=1.5kohm)

RoHS COMPLIANCE	Yes
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POWER DERATING CURVE



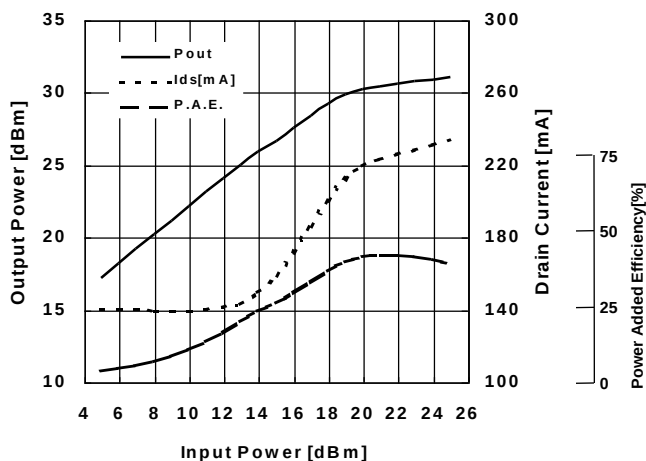
OUTPUT POWER , POWER ADDED EFFICIENCY vs. INPUT POWER



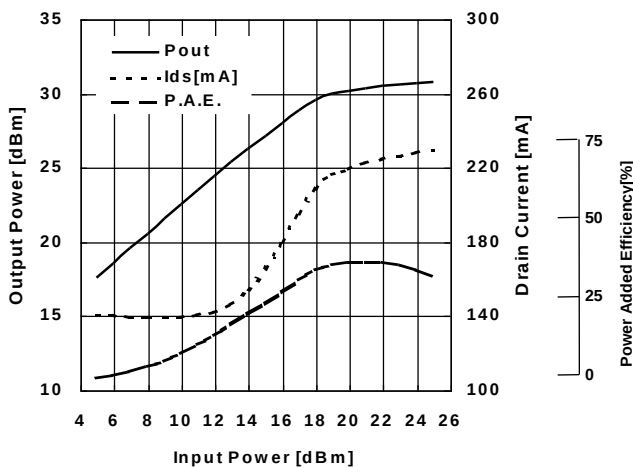
OUTPUT POWER , DRAIN CURRENT vs. INPUT POWER with Wide band tuning condition.

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

Pin-Pout, Idd & P.A.E @ $f=1.8GHz$

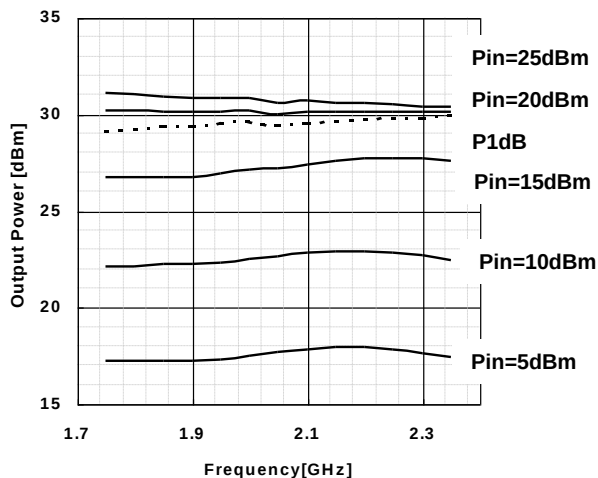
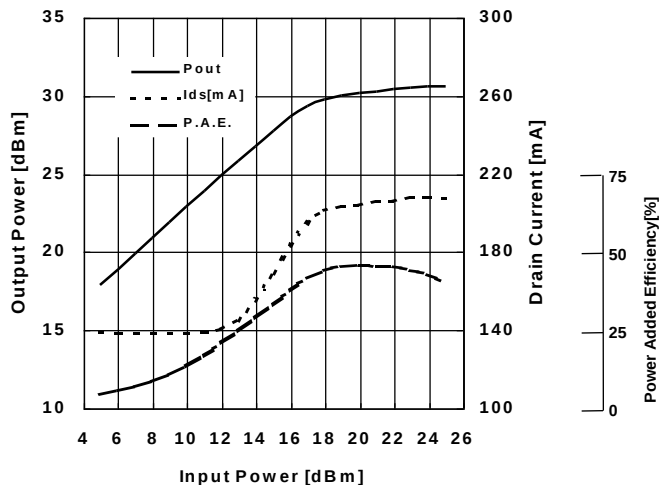


Pin-Pout, Idd & P.A.E @ $f=2.0GHz$



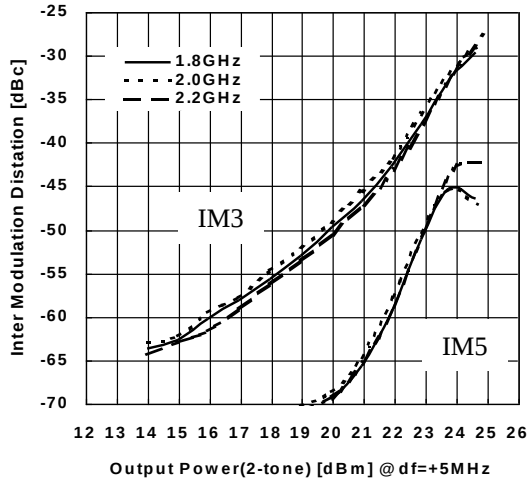
OUTPUT POWER vs. FREQUENCY

Pin-Pout, Idd & P.A.E @ $f=2.2GHz$

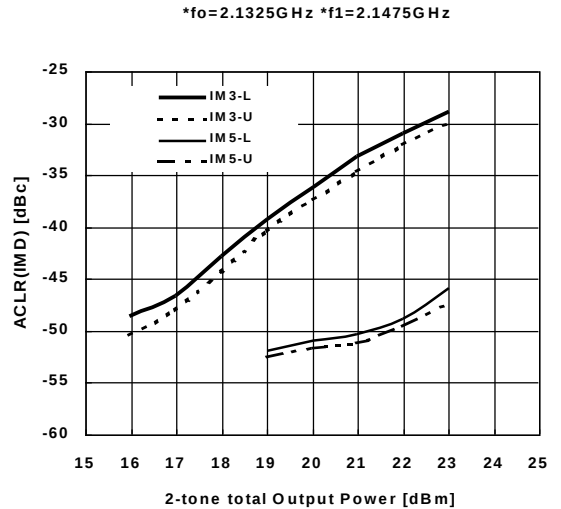


@ VDS=10V IDS(DC)=150mA VGS(DC)=-0.9V

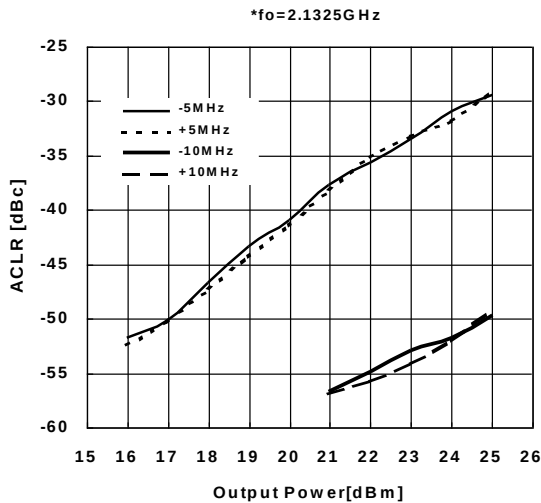
IMD vs OUTPUT POWER(2-tone)



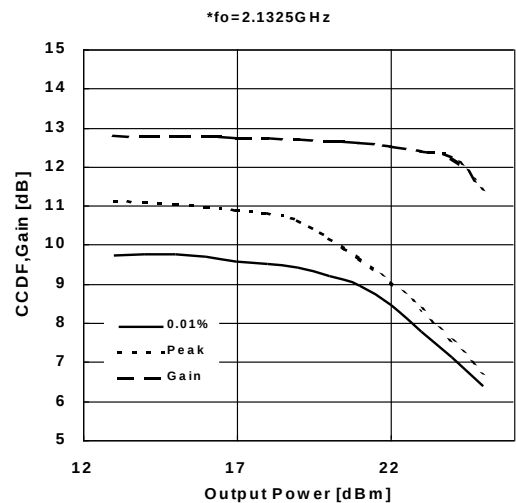
W-CDMA 2-CARRIER IMD(ACLR)



W-CDMA SINGLE CARRIER ACLR

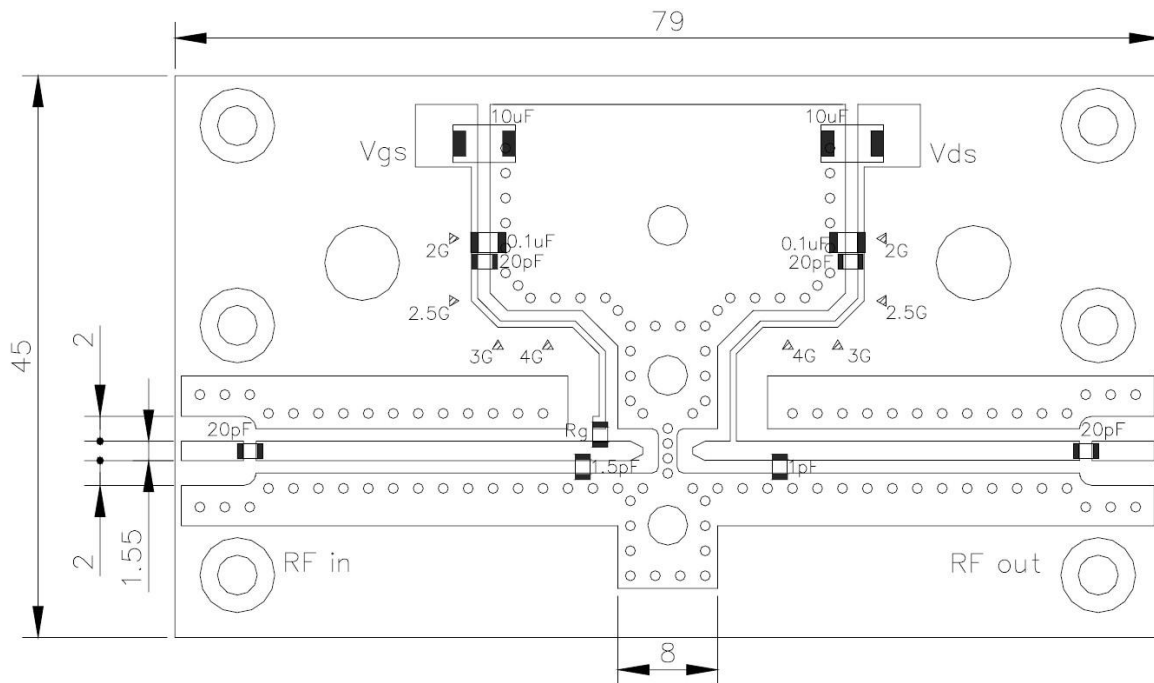


W-CDMA SINGLE CARRIER CCDF AND GAIN



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.

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



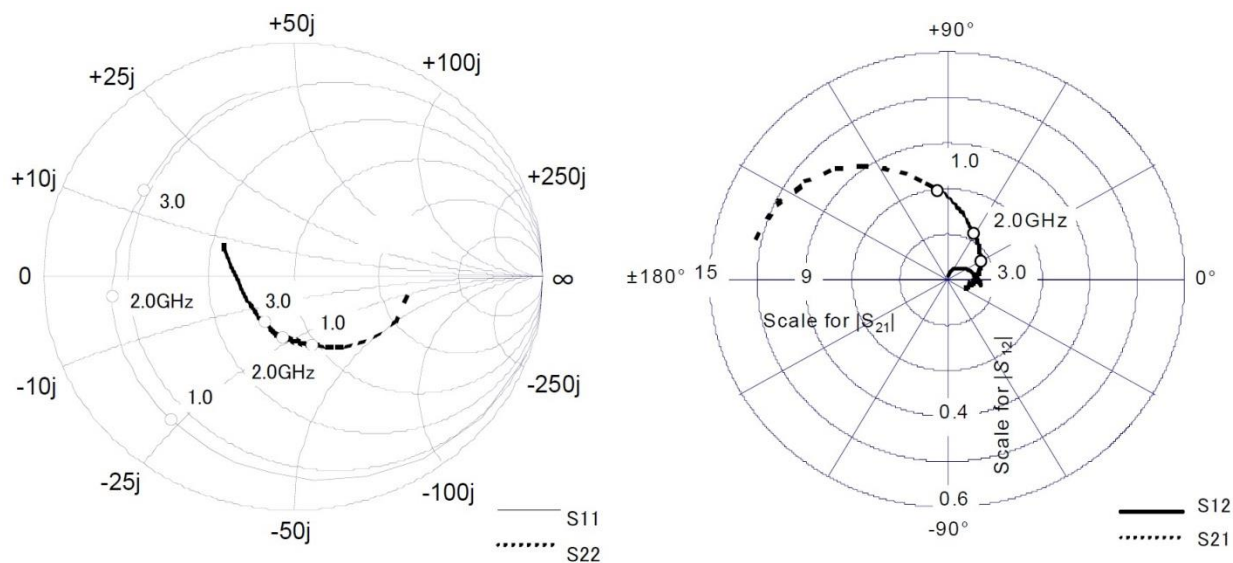
<Board information>

$\epsilon_r=3.5$, $t=0.8$

Unit : mm

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

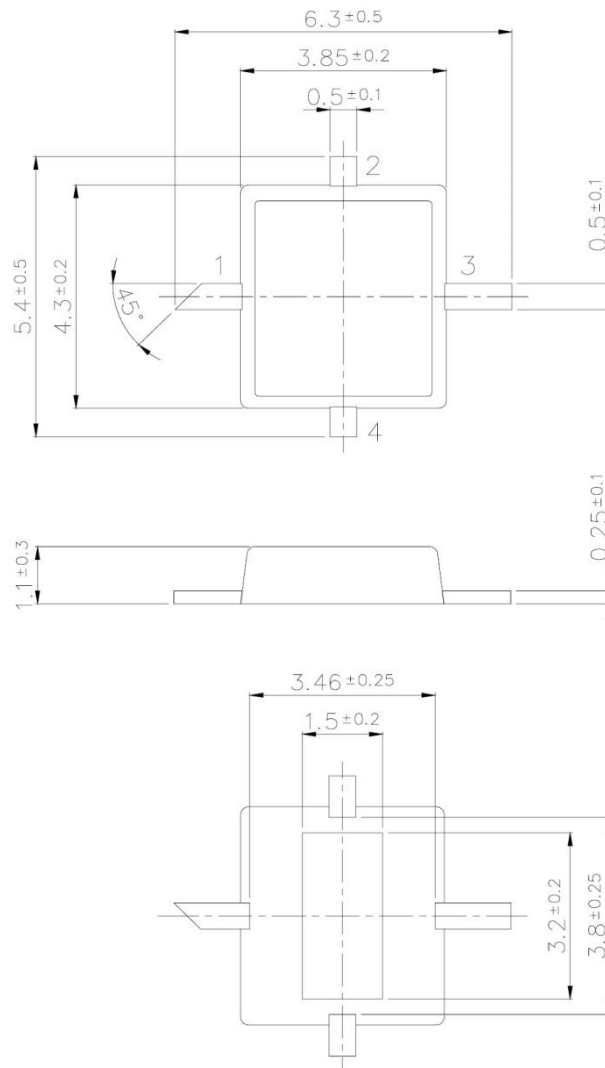
■ S-PARAMETER



$V_{DS}=10V$, $I_{DS}=180mA$

Freq.	S11		S21		S12		S22		
[GHz]	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	

■ Package Outline



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

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 allowed.
- 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.