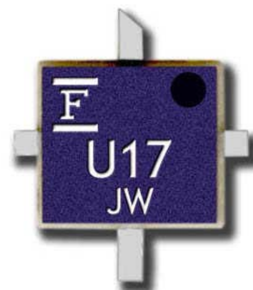
# FLU17ZM

***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 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 Tc=25℃)

| Item | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 15 | V |
| Gate-Soutce Voltage | $V_{GS}$ | -5 | V |
| Total Power Dissipation | $P_T$ | 8.3 | W |
| Storage Temperature | $T_{stg}$ | -55 to +150 | ℃ |
| Channel Temperature | $T_{ch}$ | 150 | ℃ |

## Recommended Operating Condition (Case Temperature Tc=25℃)

| Item | Symbol | Condition | Unit |
|---|---|---|---|
| DC Input Voltage | $V_{DS}$ | ≤ 10 | V |
| Channel Temperature | $T_{ch}$ | ≤ 145 | ℃ |
| 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 Tc=25℃)

| Item | Symbol | Test Conditions | Limit | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Drain Current | $I_{DSS}$ | $V_{DS}$=5V, $V_{GS}$=0V | - | 600 | 900 | mA |
| Transconductance | gm | $V_{DS}$=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, $I_{DS}$=0.6$I_{DSS}$(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 | ℃/W |

**CASE STYLE: ZM**

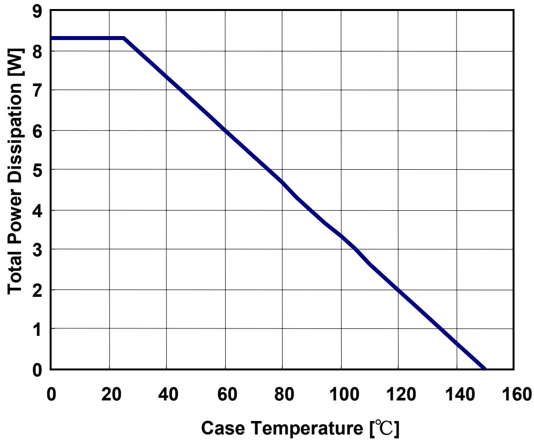
G.C.P.:Gain Compression Point

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.

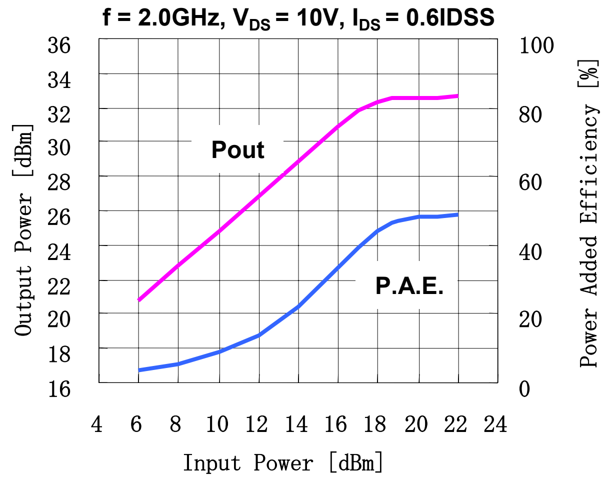
| ESD | Class Ⅱ | 500 ～ 1999 V |
|---|---|---|

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

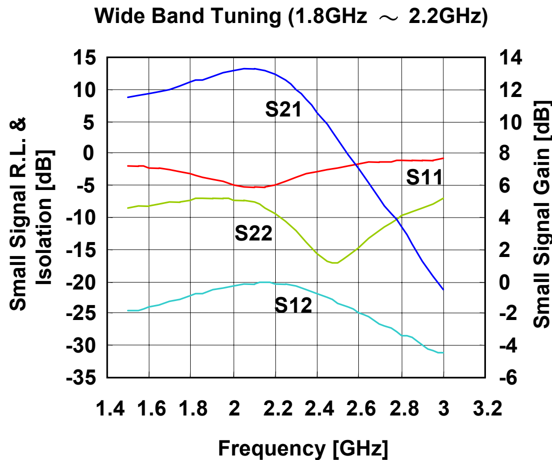
### POWER DERATING CURVE



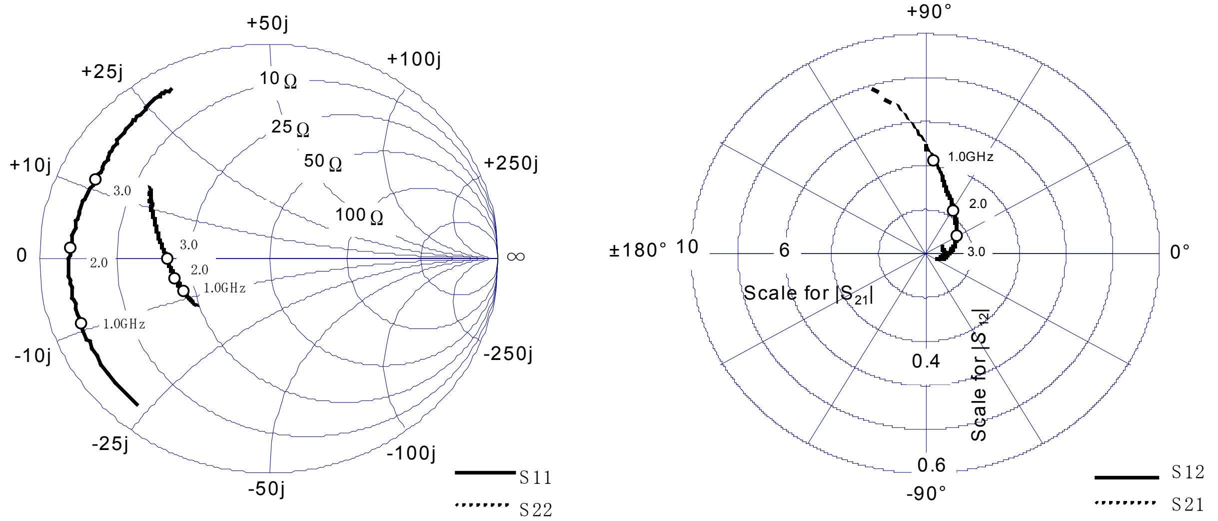

### OUTPUT POWER & POWER ADDED EFFICIENCY vs. INPUT POWER




### SMALL SINGLE R.L. vs FREQUENCY



## ■ S-PARAMETER

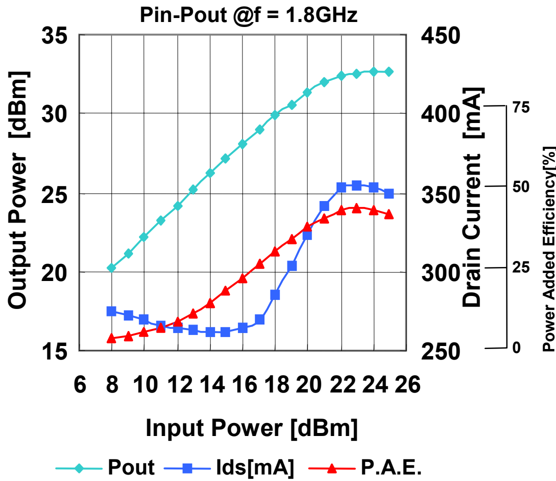


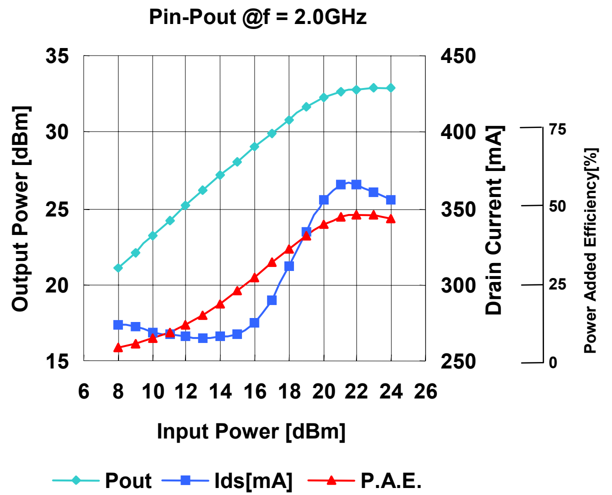

$V_{DS}$ = 10V, $I_{DS}$ = 360mA

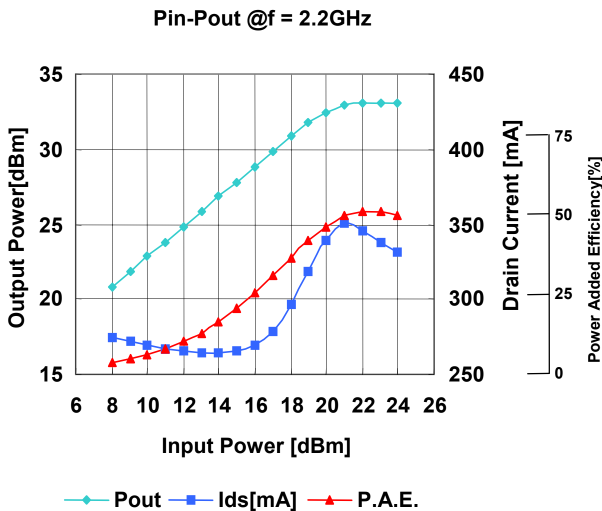
| Freq | S11 | | S21 | | S12 | | S22 | |
|---|---|---|---|---|---|---|---|---|
| [GHz] | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 0.5 | 0.89 | -130.40 | 7.82 | 106.20 | 0.05 | 22.81 | 0.38 | -144.06 |
| 1 | 0.87 | -159.47 | 4.26 | 84.91 | 0.05 | 10.25 | 0.40 | -157.62 |
| 1.5 | 0.87 | -172.30 | 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 |

## OUTPUT POWER, DRAIN CURRENT vs. INPUT POWER

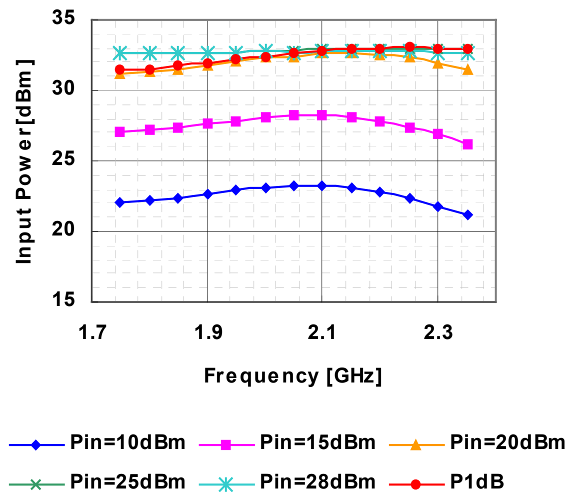
@ $V_{DS}$ = 10V, $I_{DS}$ = 0.6IDSS



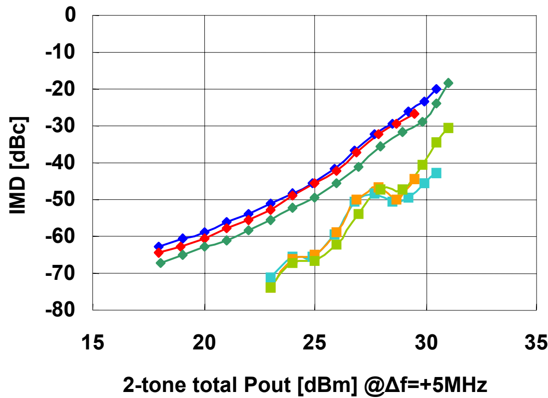



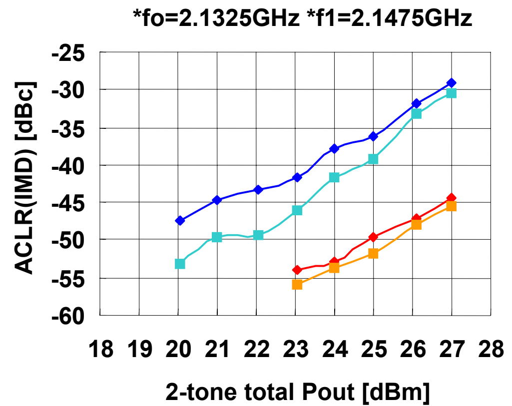



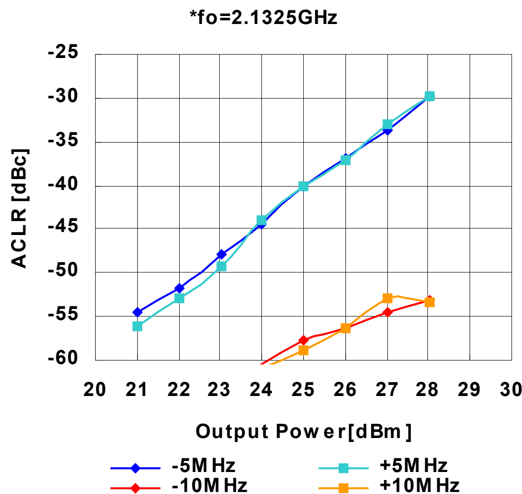

## OUTPUT POWER vs. FREQUENCY

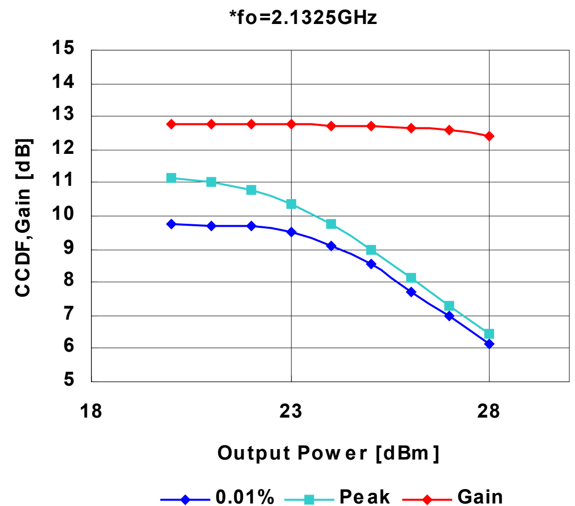


@ $V_{DS}$ = 10V, $I_{DS}$ = 0.6IDSS



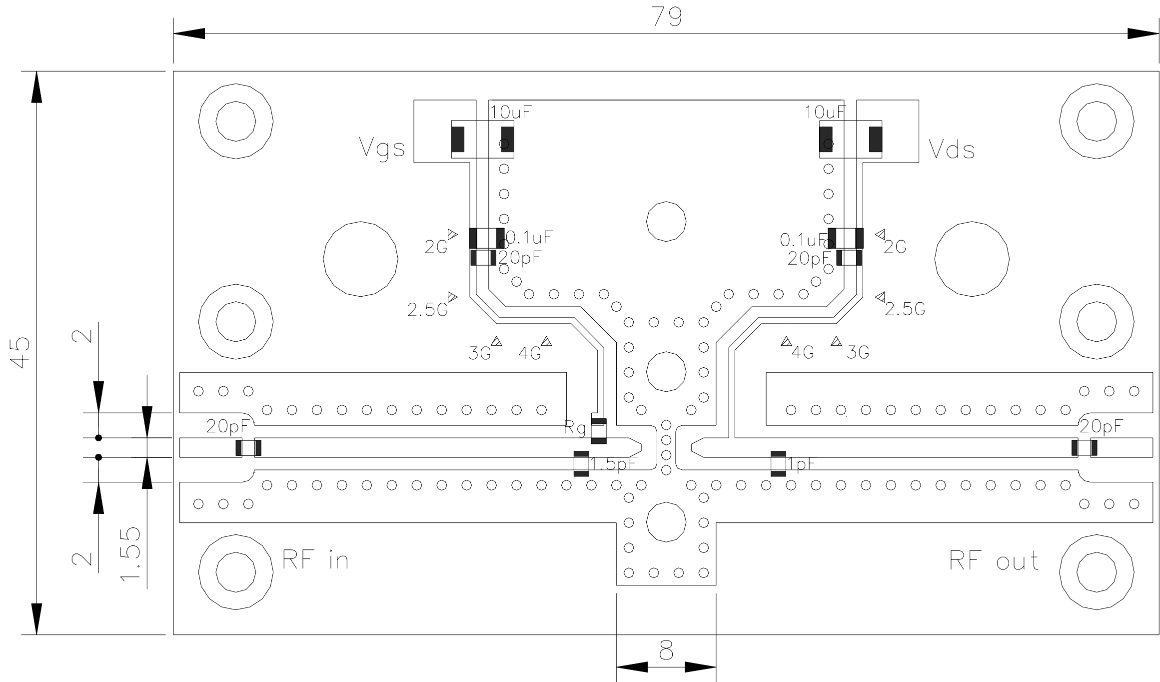




Note : *All signals are W-CDMA modulated at 3GPP3.4.12-00 BS-1 64ch non clipping.

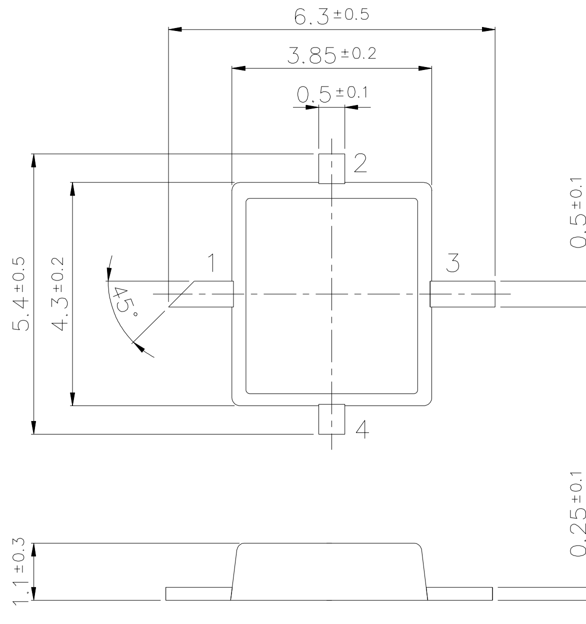
### ■ Recommended Bias Circuit and Internal Block Diagram

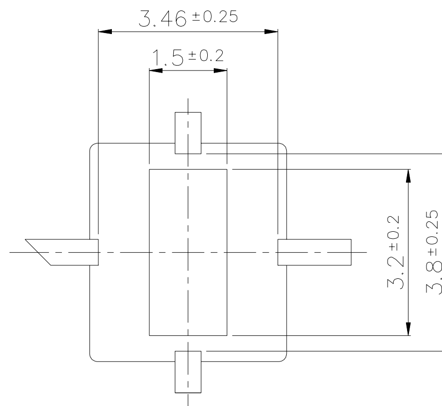



<Board information>
ε r=3.5, t=0.8

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

## ■ Package Outline




1 : Gate

2. Source

3. Drain

4. Source

Unit : mm

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