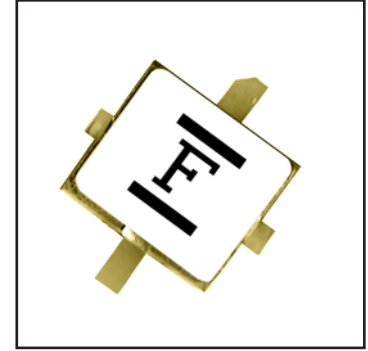


### FEATURES

- High Output Power:  $P_{1dB}=29.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB}=14.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add}=47\%$  (Typ.)
- Hermetic Metal/Ceramic (SMT) Package
- Tape and Reel Available

### DESCRIPTION

The FLU10XM is a GaAs FET designed for base station applications in the PCN/PCS frequency range. This is a new product series that uses a 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 (Ambient Temperature $T_a=25^\circ\text{C}$ )

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	PT	$T_c = 25^\circ\text{C}$	4.16	W
Storage Temperature	$T_{stg}$		-65 to +175	$^\circ\text{C}$
Channel Temperature	$T_{ch}$		+175	$^\circ\text{C}$

Fujitsu recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage ( $V_{DS}$ ) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 4.8 and -0.5 mA respectively with gate resistance of 400Ω.
3. The operating channel temperature ( $T_{ch}$ ) should not exceed 145 $^\circ\text{C}$ .

### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$ )

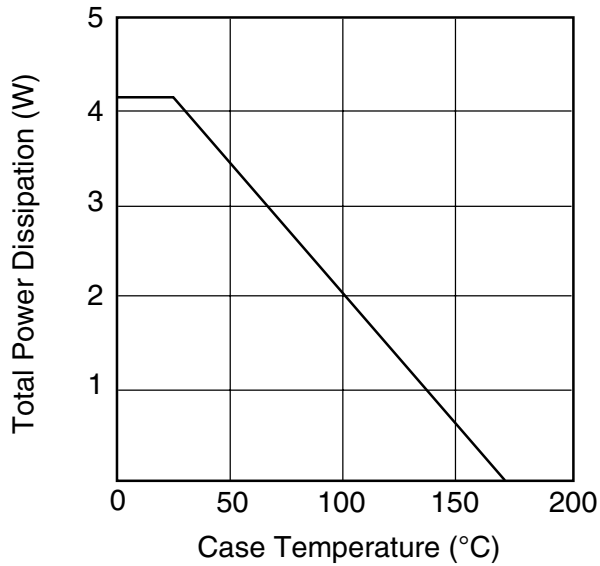
Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Drain Current	$I_{DSS}$	$V_{DS} = 5\text{V}, V_{GS}=0\text{V}$	-	300	450	mA
Transconductance	gm	$V_{DS} = 5\text{V}, I_{DS}=200\text{mA}$	-	150	-	mS
Pinch-Off Voltage	$V_p$	$V_{DS} = 5\text{V}, I_{DS}=15\text{mA}$	-1.0	-2.0	-3.5	V
Gate-Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -15\mu\text{A}$	-5	-	-	V
Output Power at 1 dB G.C.P.	$P_{1dB}$	$V_{DS} = 10\text{V}$ $f=2.0\text{ GHz}$ $I_{DS}=0.6I_{DSS}$	28.5	29.5	-	dBm
Power Gain at 1 dB G.C.P.	$G_{1dB}$		13.5	14.5	-	dB
Power Added Efficiency	$\eta_{add}$		-	47	-	%
Thermal Resistance	$R_{th}$	Channel to Case	-	25	36	$^\circ\text{C/W}$

#### Case Style: XM

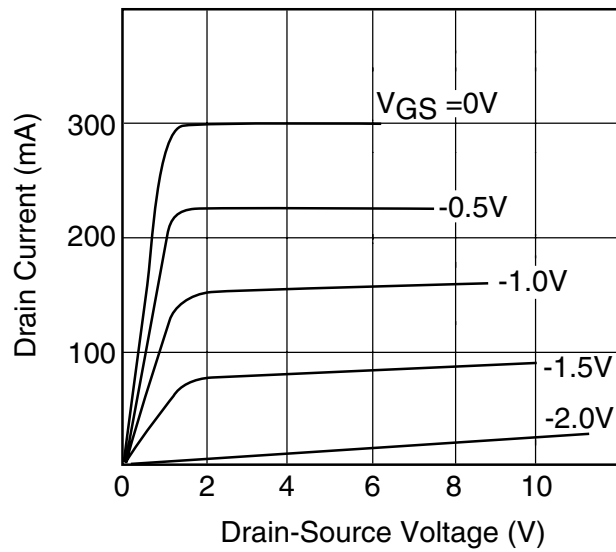
G.C.P.: Gain Compression Point

Note: The RF parameters are measured on a lot basis by sample testing at an AQL = 0.1%, Level-II inspection. Any lot failure shall be 100% retested.

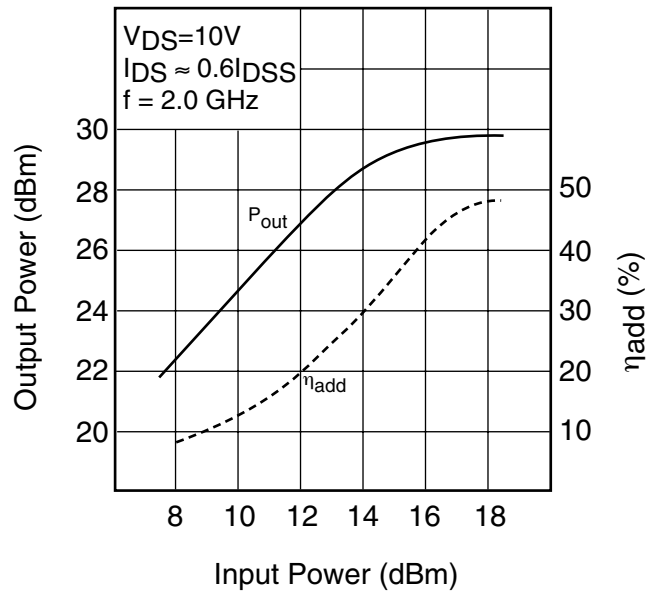
**POWER DERATING CURVE**

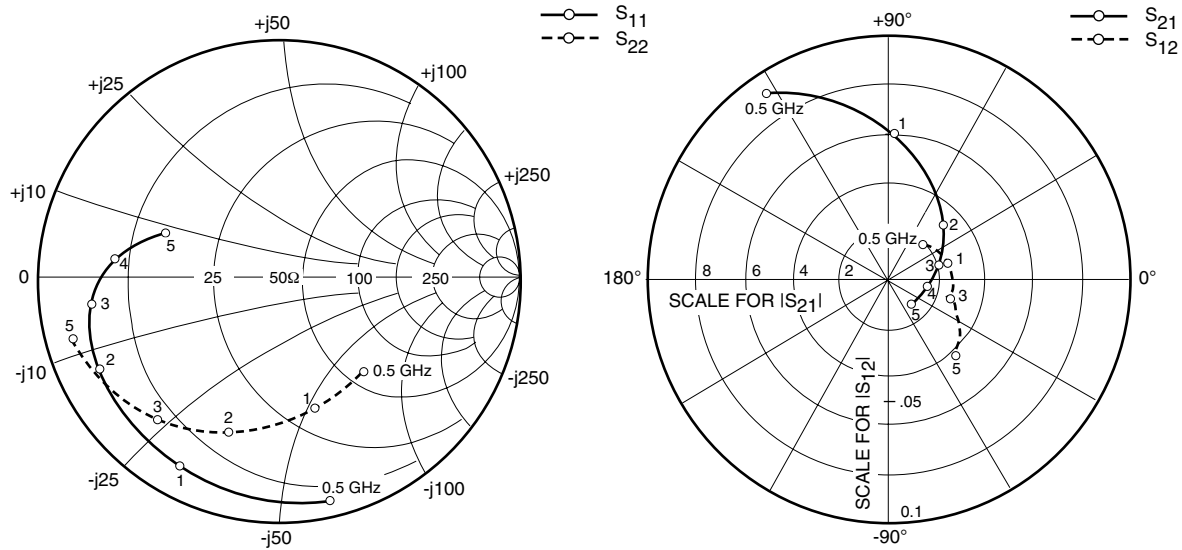


**DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE**



**OUTPUT POWER vs. INPUT POWER**





### S-PARAMETERS

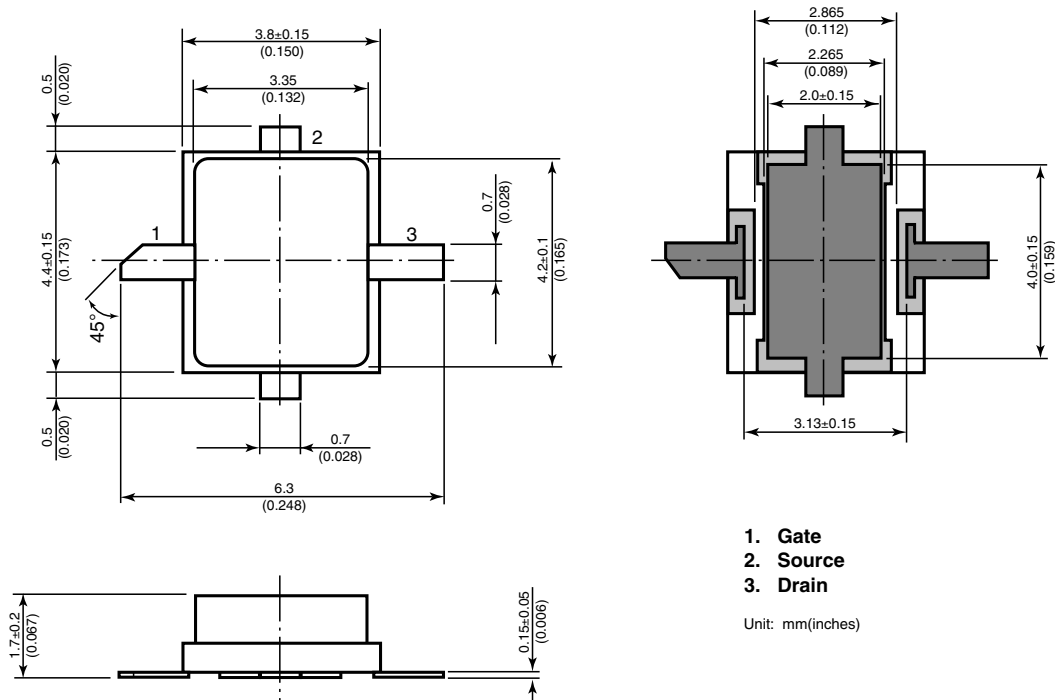
$V_{DS} = 10V, I_{DS} = 180mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	1.000	-17.7	11.904	167.3	.005	78.4	.535	-9.1
500	.922	-76.7	9.080	123.4	.020	43.2	.511	-46.1
1000	.864	-118.5	5.928	88.3	.026	14.5	.536	-74.7
1500	.841	-140.9	4.153	64.2	.028	4.8	.594	-94.0
2000	.825	-154.9	3.121	45.1	.028	-3.7	.654	-108.7
2500	.809	-164.9	2.498	28.4	.028	-12.0	.709	-120.9
3000	.783	-173.1	2.097	13.1	.028	-16.9	.755	-131.4
3500	.746	179.4	1.833	-1.9	.031	-20.5	.794	-140.9
4000	.692	172.0	1.655	-17.3	.034	-28.4	.830	-149.5
4500	.615	164.1	1.529	-33.6	.037	-36.3	.861	-157.3
5000	.507	156.6	1.429	-51.3	.042	-48.5	.886	-164.5

# FLU10XM

## L-Band Medium & High Power GaAs FET

### Case Style "XM" Metal-Ceramic Hermetic Package



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Fujitsu Compound Semiconductor Products contain **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.

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