FLU10XM

L-Band Medium & High Power GaAs FET

FEATURES

- High Output Power: P_{1dB}=29.5dBm (Typ.)
- High Gain: G_{1dB}=14.5dB (Typ.)
- High PAE: η_{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 Ta=25°C)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	PT	Tc = 25°C	4.16	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		+175	°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 resistence of 400Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS}=0V	-	300	450	mA
Transconductance	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 1 dB G.C.P.	P_{1dB}	V_{DS} = 10V f=2.0 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	η_{add}		-	47	-	%
Thermal Resistance	R_{th}	Channel to Case	-	25	36	°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.

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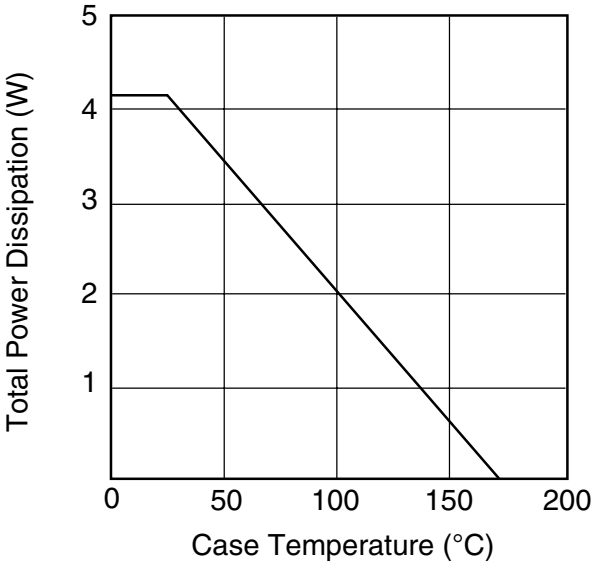
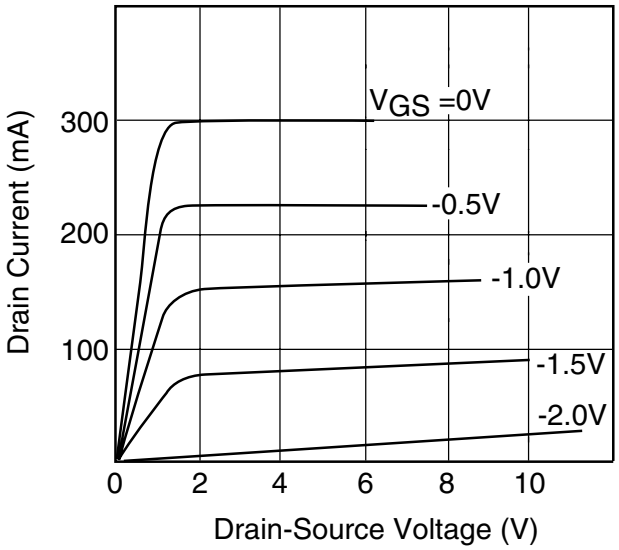
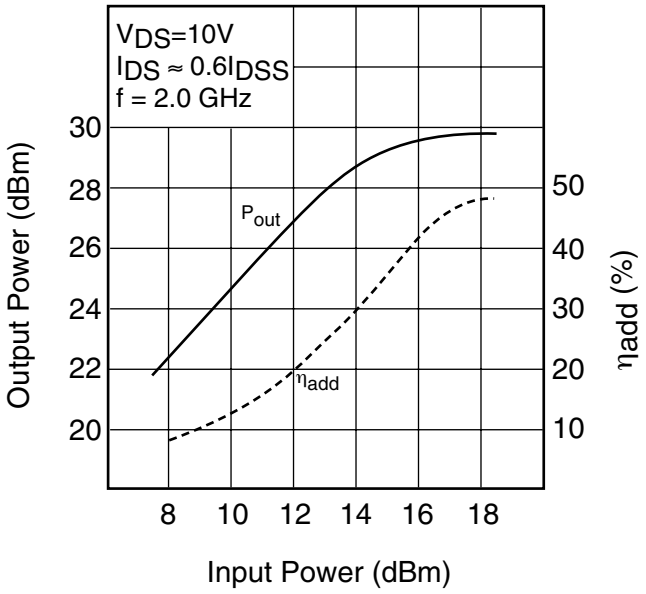
POWER DERATING CURVE

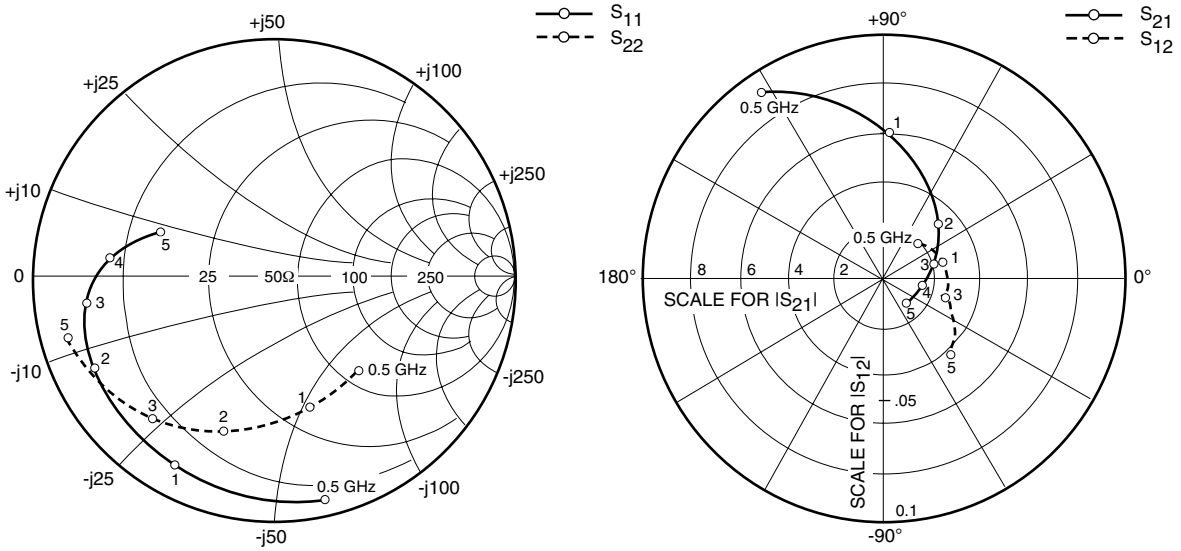


DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



OUTPUT POWER vs. INPUT POWER



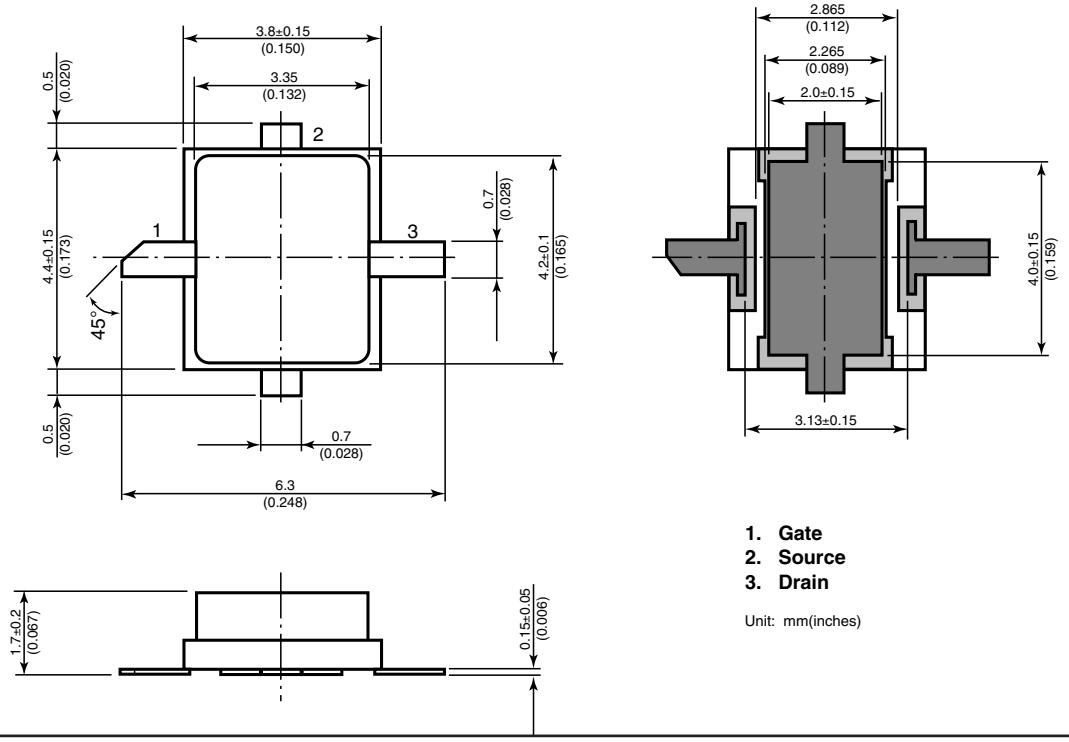


S-PARAMETERS

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

FREQUENCY	S11		S21		S12		S22	
(MHZ)	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

Case Style "XM"
Metal-Ceramic Hermetic Package



1. **Gate**
2. **Source**
3. **Drain**

Unit: mm(inches)

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CAUTION

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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