FLX107MH-12

X, Ku Band Power GaAs FET

FEATURES

- High Output Power: P_{1dB} = 30.0dBm(Typ.)
- High Gain: G_{1dB} = 7.5dB(Typ.)
- High PAE: η_{add} = 33%(Typ.)
- Proven Reliability
- Hermetic Metal/Ceramic Package



DESCRIPTION

The FLX107MH-12 is a power GaAs FET that is designed for general purpose applications in the X-Band frequency range as it provides superior power, gain, and efficiency.

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

ABSOLUTE MAXIMUM RATING (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	P_T	T_C = 25°C	7.5	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 8.8 and -0.5 mA respectively with gate resistance of 500Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

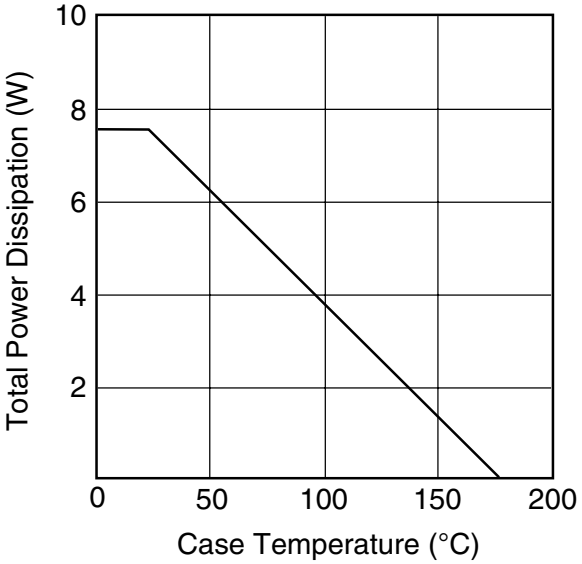
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	400	600	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 250mA	-	200	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 20mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -20μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS} (Typ.), f = 12.5 GHz	29.0	30.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.5	7.5	-	dB
Power-added Efficiency	η_{add}		-	33	-	%
Thermal Resistance	R_{th}	Channel to Case	-	15	20	°C/W

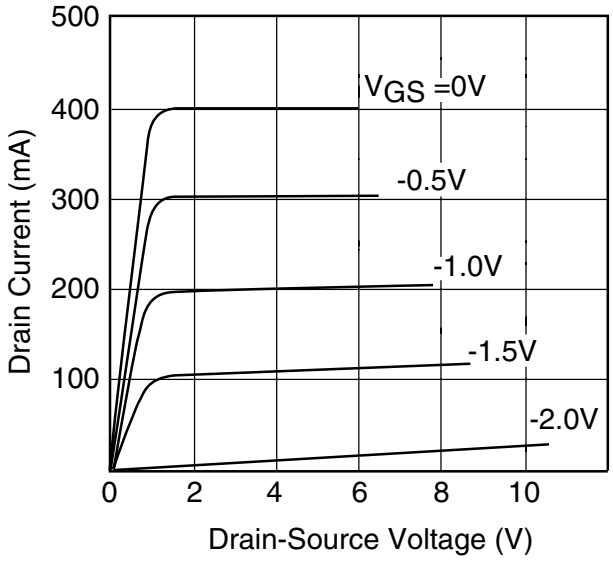
CASE STYLE: MH

G.C.P.: Gain Compression Point

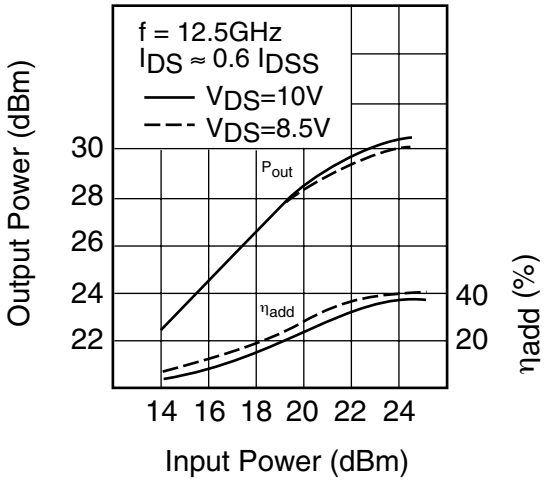
POWER DERATING CURVE



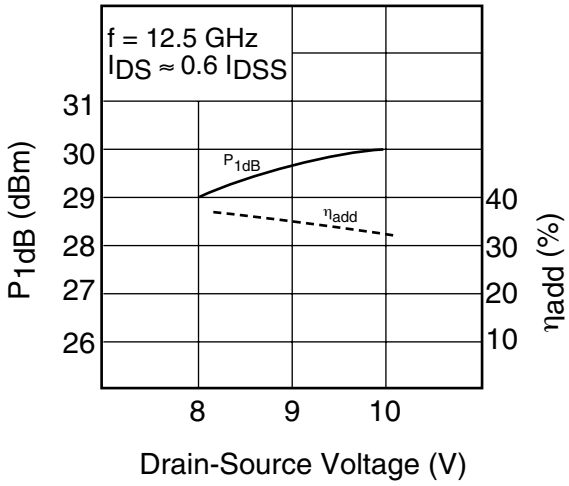
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

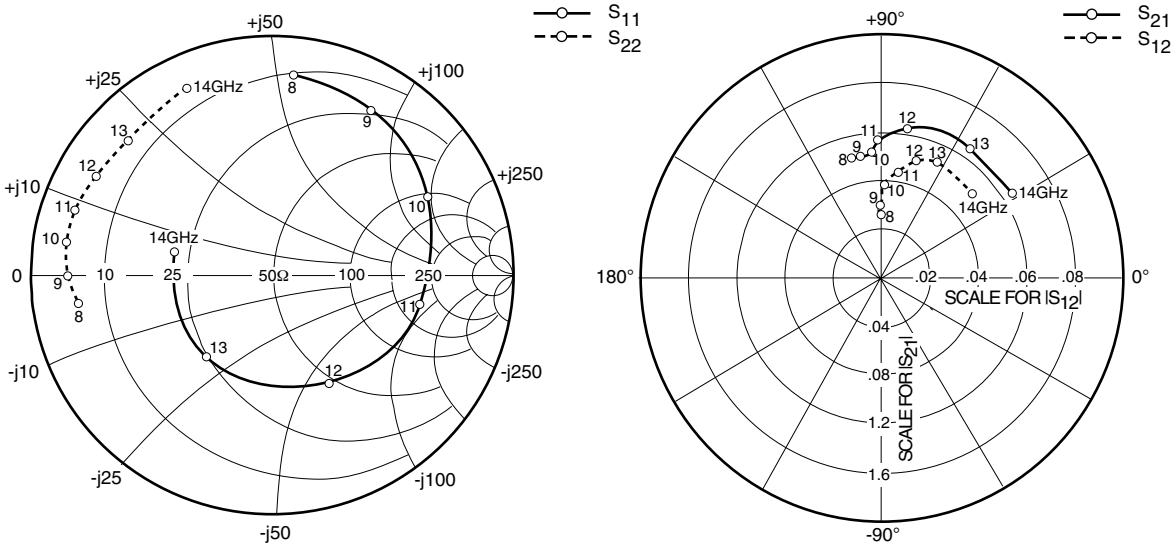


OUTPUT POWER vs. INPUT POWER



P_{1dB} & η_{add} vs. V_{DS}





S-PARAMETERS

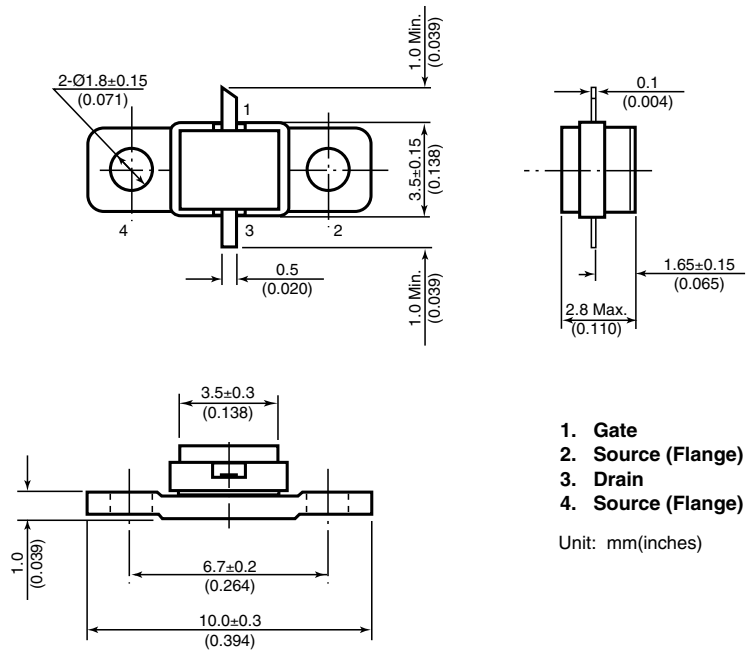
V_{DS} = 10V, I_{DS} = 240mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.955	-100.1	8.764	132.9	.023	50.0	.281	-52.4
1000	.930	-137.3	5.517	117.2	.028	38.1	.295	-75.4
8000	.841	84.2	1.023	103.8	.026	90.8	.809	-171.9
8500	.820	72.6	1.011	102.2	.027	93.0	.828	-176.1
9000	.794	59.1	1.019	100.6	.029	92.2	.842	-179.9
9500	.766	44.2	1.026	98.8	.035	89.4	.854	175.9
10000	.721	26.8	1.037	95.1	.039	88.6	.867	170.8
10500	.681	8.7	1.014	93.7	.043	81.2	.881	166.6
11000	.627	-11.9	1.138	90.8	.044	81.0	.862	161.3
11500	.576	-34.7	1.222	85.6	.048	76.5	.839	156.5
12000	.516	-62.3	1.245	80.2	.050	74.0	.841	149.9
12500	.468	-94.0	1.311	72.9	.051	70.3	.829	143.6
13000	.438	-127.9	1.294	55.2	.053	64.2	.816	136.5
13500	.422	-161.2	1.293	54.9	.052	56.3	.844	127.8
14000	.412	168.2	1.282	32.7	.051	42.8	.863	114.2

Download S-Parameters, click here

Case Style "MH"

Metal-Ceramic Hermetic Package



1. **Gate**
2. **Source (Flange)**
3. **Drain**
4. **Source (Flange)**

Unit: mm(inches)

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- **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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