FLK107MH-14

X, Ku Band Power GaAs FET

FEATURES

- High Output Power: P_{1dB} = 30.0dBm(Typ.)
- High Gain: G_{1dB} = 6.5dB(Typ.)
- High PAE: η_{add} = 31%(Typ.)
- Proven Reliability
- Hermetic Metal/Ceramic Package



DESCRIPTION

The FLK102MH-14 is a power GaAs FET that is designed for general purpose applications in the Ku-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.

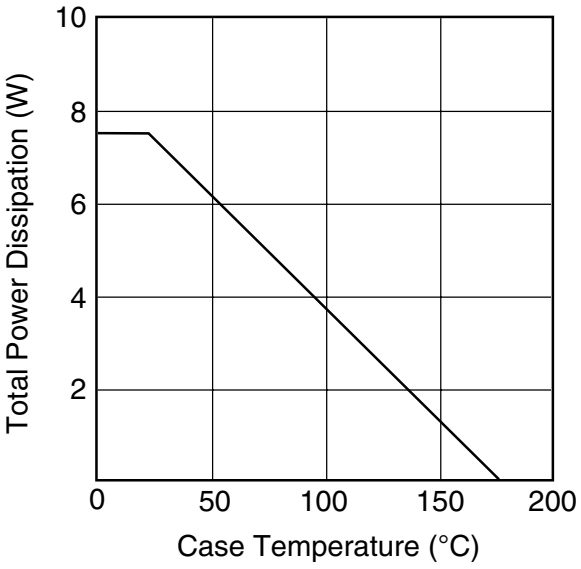
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

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 = 14.5 GHz	29.0	30.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		5.5	6.5	-	dB
Power-added Efficiency	η_{add}		-	31	-	%
Thermal Resistance	R_{th}	Channel to Case	-	15	20	°C/W

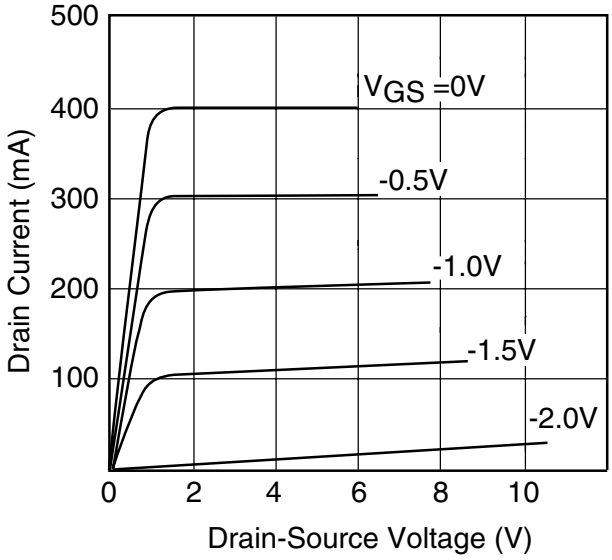
CASE STYLE: MH

G.C.P.: Gain Compression Point

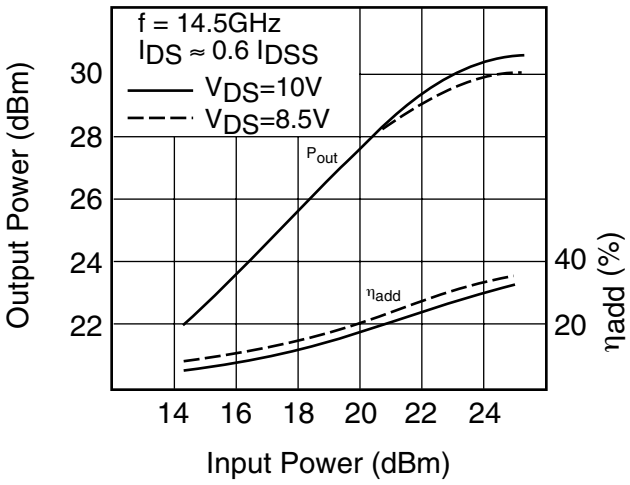
POWER DERATING CURVE



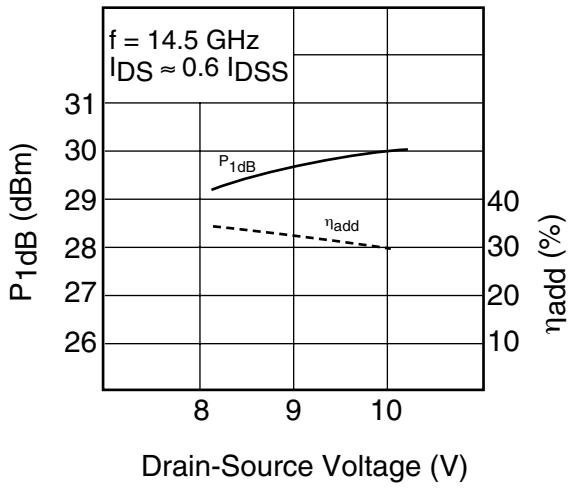
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

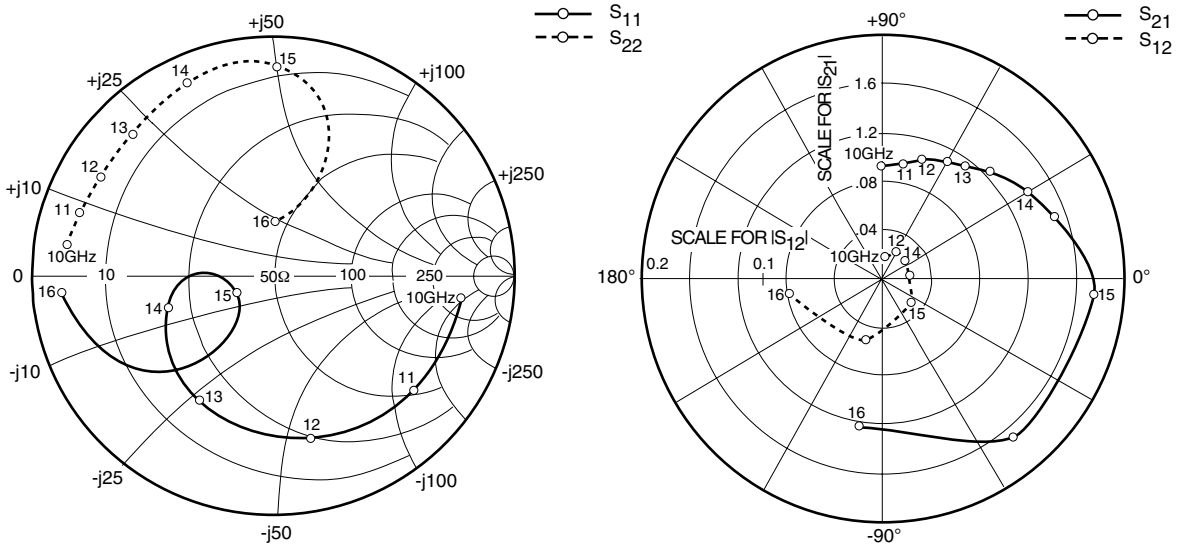


OUTPUT POWER vs. INPUT POWER



P_{1dB} & η_{add} vs. V_{DS}





S-PARAMETERS

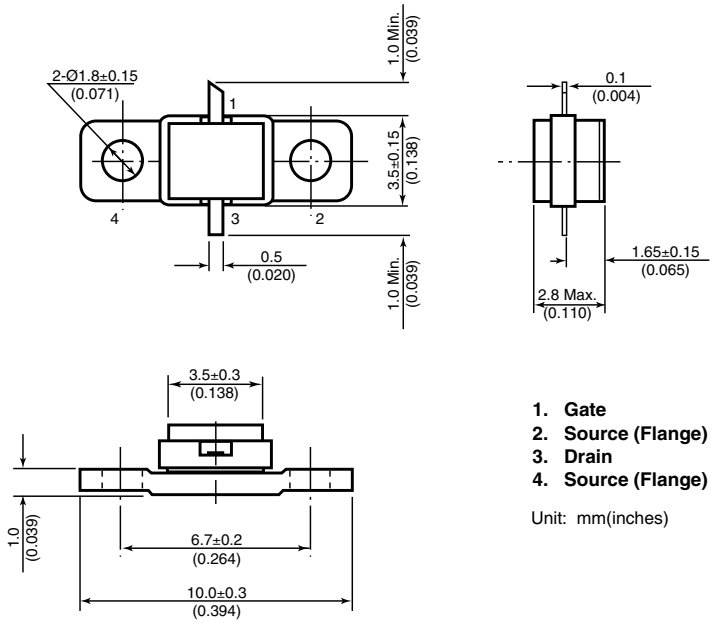
V_{DS} = 10V, I_{DS} = 240mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.949	-99.8	8.893	131.6	.023	47.7	.275	-58.0
1000	.921	-137.6	5.628	114.8	.028	37.1	.297	-80.9
10000	.783	-6.8	.924	90.5	.039	71.6	.852	171.3
10500	.769	-22.8	.932	85.8	.038	64.4	.857	166.9
11000	.751	-39.7	.959	79.8	.039	67.8	.843	161.7
11500	.730	-57.4	.981	74.2	.043	63.7	.827	156.0
12000	.699	-76.9	1.032	71.9	.049	62.1	.825	149.9
12500	.659	-98.1	1.109	60.8	.044	63.5	.820	142.6
13000	.609	-119.9	1.151	53.5	.045	64.8	.824	134.6
13500	.544	-142.1	1.255	44.7	.045	51.5	.851	125.6
14000	.456	-162.6	1.402	30.5	.046	37.2	.890	113.9
14500	.331	179.3	1.521	19.7	.045	7.2	.913	102.8
15000	.170	-155.0	1.764	-4.8	.063	-39.7	.875	89.2
15500	.528	-132.8	1.697	-50.1	.108	-107.7	.654	69.0
16000	.878	-174.9	1.225	-99.6	.158	-171.2	.226	87.9

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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