

FEATURES

- High Output Power : P1dB=30.0dBm(Typ.)
- High Gain : G1dB=6.5dB(Typ.)
- High Power Added Efficiency : PAE=31%(Typ.)
- Proven Reliability
- Hermetic Metal/Ceramic Package



DESCRIPTION

The FLK107MH-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. Sumitomo's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Case Temperature Tc=25deg.C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	15	V
Gate-Source Voltage	V_{GS}	-5	V
Total Power Dissipation	P_T	7.5	W
Storage Temperature	T_{stg}	-65 to +175	deg.C
Channel Temperature	T_{ch}	175	deg.C

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

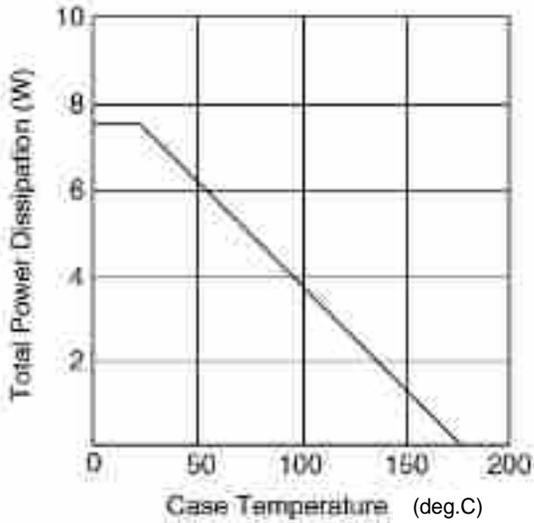
1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 8.8 and -0.5 mA respectively with gate resistance of 500ohm.
3. The operating channel temperature(T_{ch}) should not exceed 145deg.C.

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25deg.C)

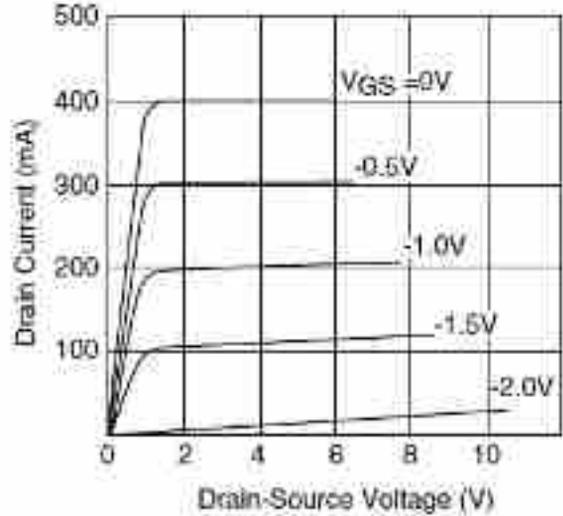
Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	-	400	600	mA
Transconductance	g_m	$V_{DS}=5V, I_{DS}=250mA$	-	200	-	mS
Pinch-off Voltage	V_p	$V_{DS}=5V, I_{DS}=20mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS}=-20uA$	-5	-	-	V
Output Power at 1dB G.C.P.	P1dB	$V_{DS}=10V,$	29.0	30.0	-	dBm
Power Gain at 1dB G.C.P.	G1dB	$I_{DS}=0.6I_{DSS}(typ.),$	5.5	6.5	-	dB
Power-added Efficiency	PAE	$f=14.5GHz$	-	31	-	%
Thermal Resistance	R_{th}	Channel to Case	-	15	20	deg.C/W

CASE STYLE	MH
RoHS Compliance	Yes

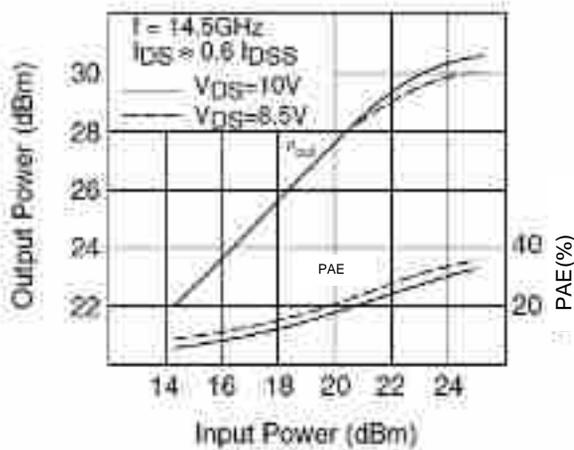
POWER DERATING CURVE



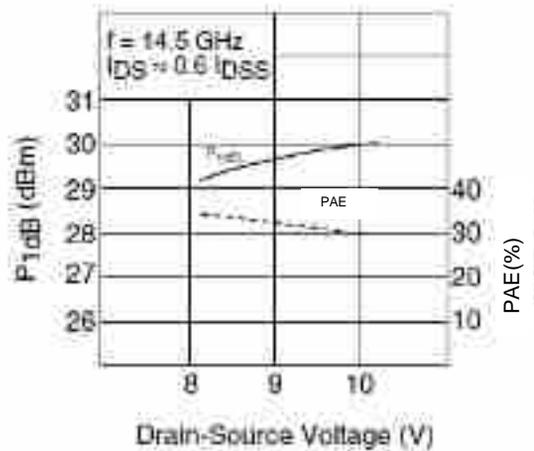
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

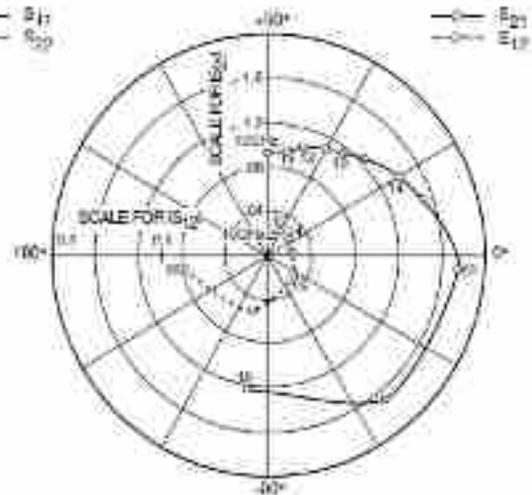
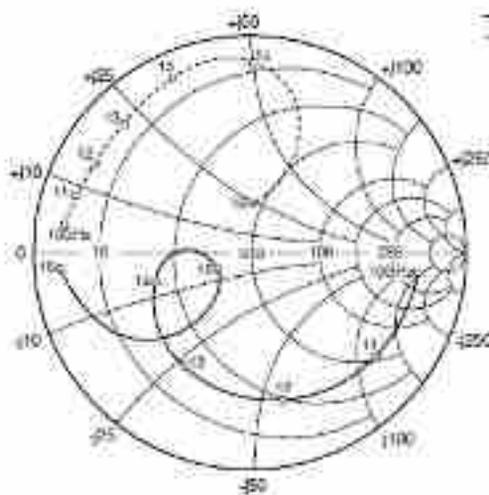


OUTPUT POWER vs. INPUT POWER



P1dB & PAE vs VDS



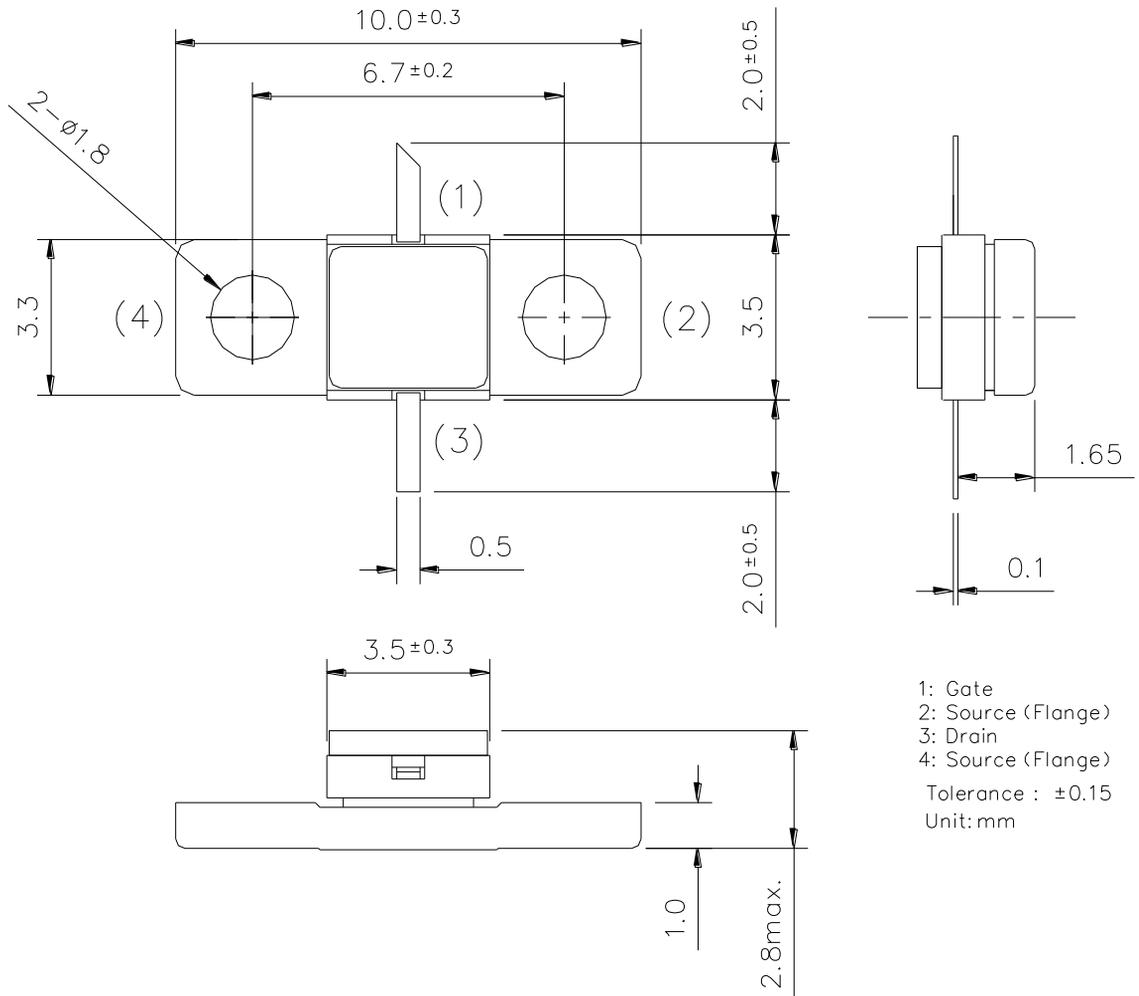


S-PARAMETERS

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

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.949	-99.8	8.893	151.6	.023	47.7	.275	-56.0
1000	.821	-137.6	5.828	114.0	.029	37.1	.297	-60.9
10000	.783	-8.8	.924	99.5	.039	71.8	.652	-171.3
10500	.769	-22.8	.932	85.8	.039	64.4	.657	-166.9
11000	.751	-39.7	.959	79.8	.039	57.0	.645	-161.7
11500	.730	-57.4	.981	74.2	.043	49.7	.627	-156.0
12000	.699	-76.9	1.032	71.9	.049	42.1	.625	-149.9
12500	.669	-98.1	1.100	69.8	.044	33.5	.620	-142.8
13000	.639	-119.9	1.151	63.0	.045	24.0	.624	-134.0
13500	.614	-142.1	1.258	44.7	.046	13.5	.651	-123.5
14000	.456	-152.5	1.482	30.5	.045	37.2	.690	-113.9
14500	.333	-179.3	1.521	19.7	.046	7.2	.913	-102.8
15000	.170	-155.0	1.704	-4.8	.063	-39.7	.675	-89.2
15500	.528	-132.8	1.897	-50.1	.108	-107.7	.654	-69.0
16000	.678	-174.9	1.220	-99.0	.150	-171.2	.230	-87.9

Package Out Line



CAUTION

This product contains **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.