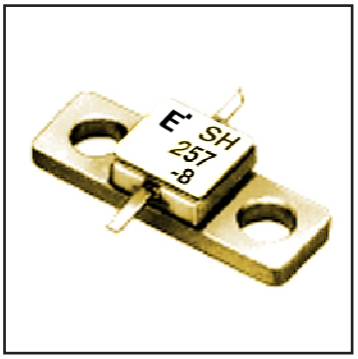
FLC257MH-8

C-Band Power GaAs FET

FEATURES

- High Output Power: P_{1dB} = 34.0dBm(Typ.)
- High Gain: G_{1dB} = 8.0dB(Typ.)
- High PAE: η_{add} = 35%(Typ.)
- ProvenReliability
- Hermetic Metal/Ceramic Package



DESCRIPTION

The FLC257MH-8 is a power GaAs FET that is designed for general purpose applications in the C-Band frequency range as it provides superior power, gain, and efficiency.

Eudyna 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	15	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		175	°C

Eudyna 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 17.8 and -1.2 mA respectively with gate resistance of 200Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

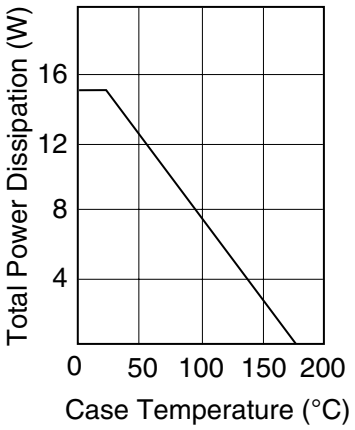
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	1000	1500	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} =600mA	-	500	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} =50mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -50μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS} (Typ.), f = 8.5 GHz	32.5	34.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.0	8.0	-	dB
Power-added Efficiency	η_{add}		-	35	-	%
Thermal Resistance	R_{th}	Channel to Case	-	8	10	°C/W

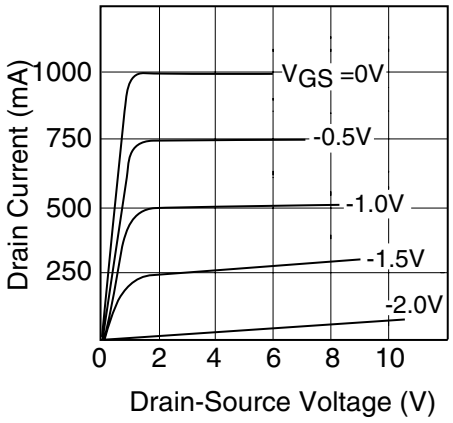
CASE STYLE: MH

G.C.P.: Gain Compression Point

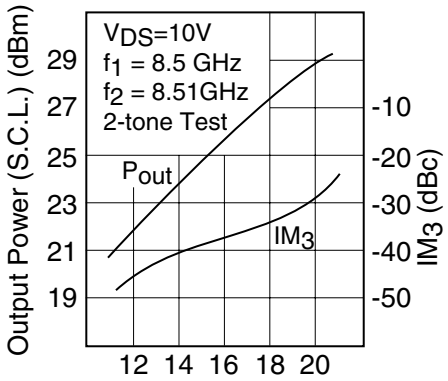
POWER DERATING CURVE



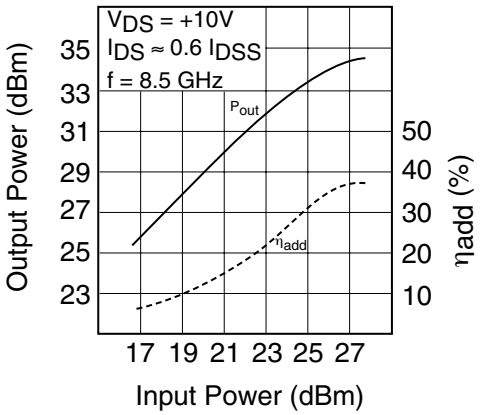
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



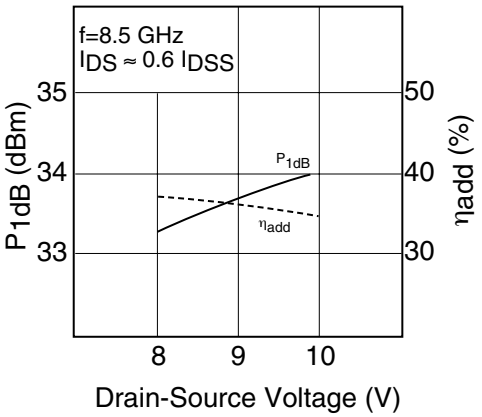
OUTPUT POWER & IM3 vs. INPUT POWER

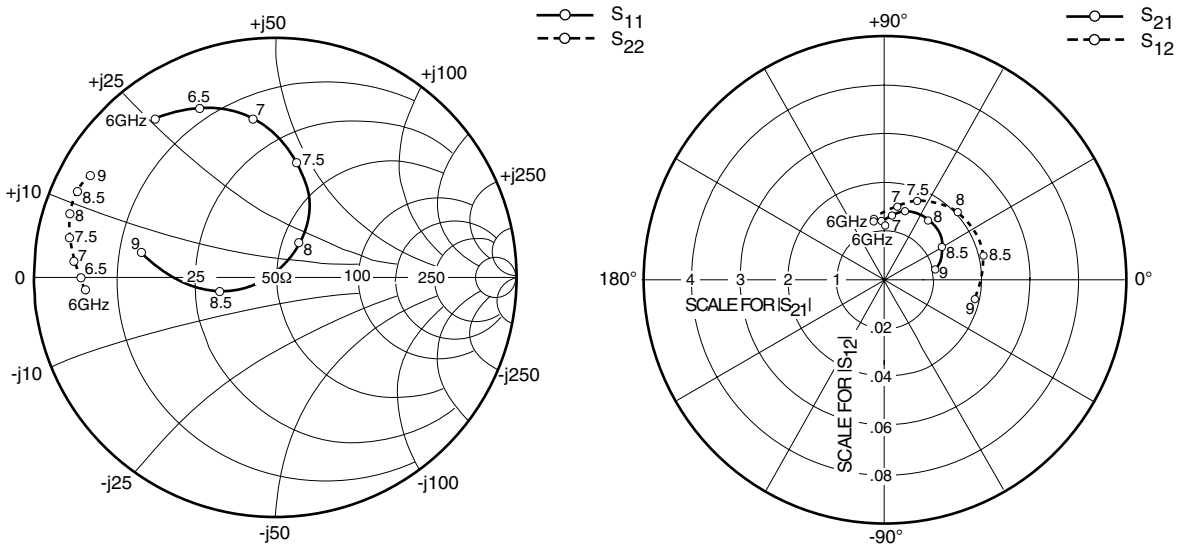


OUTPUT POWER vs. INPUT POWER



P1dB & ηadd vs. VDS





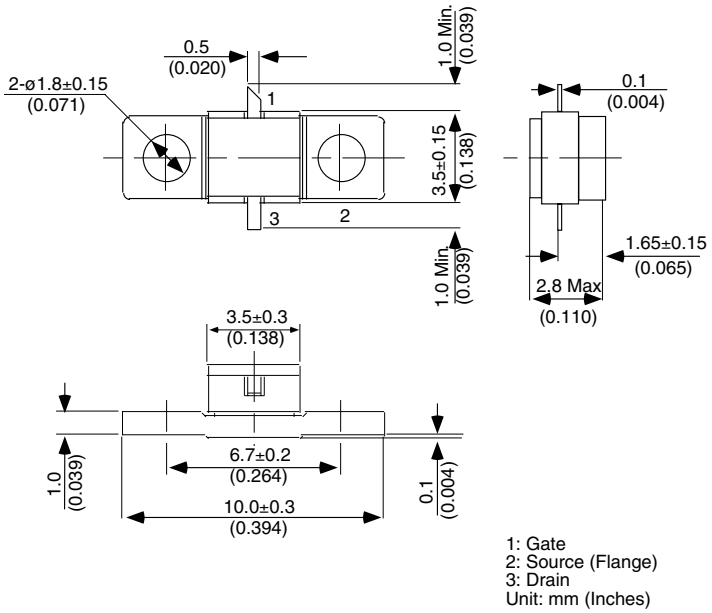
S-PARAMETERS

V_{DS} = 10V, I_{DS} = 600mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.928	-142.8	7.163	109.2	.021	28.8	.344	-157.2
6000	.826	127.2	1.097	90.1	.025	99.3	.778	-174.5
6500	.770	114.2	1.179	92.6	.026	98.5	.798	-179.6
7000	.666	98.0	1.270	84.3	.030	81.0	.834	175.7
7500	.485	78.9	1.453	73.2	.035	67.7	.863	169.2
8000	.170	55.0	1.500	53.1	.041	43.3	.894	162.7
8500	.243	-164.9	1.368	29.9	.042	14.0	.889	156.1
9000	.561	170.0	1.053	10.3	.038	-12.0	.874	150.6
9500	.740	150.0	.758	-1.9	.029	-29.6	.848	146.0
10000	.828	134.3	.569	-9.3	.023	-40.1	.846	143.4

Case Style "MH"

Metal-Ceramic Hermetic Package



1: Gate
2: Source (Flange)
3: Drain
Unit: mm (Inches)