

# FLC257MH-8

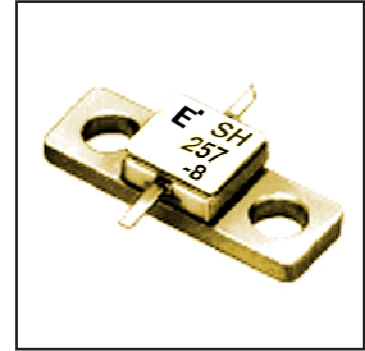
## C-Band Power GaAs FET

### FEATURES

- High Output Power:  $P_{1dB} = 34.0\text{dBm(Typ.)}$
- High Gain:  $G_{1dB} = 8.0\text{dB(Typ.)}$
- High PAE:  $\eta_{add} = 35\%\text{(Typ.)}$
- Proven Reliability
- 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 $T_a=25^\circ\text{C}$ )

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	$V_{DS}$		15	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_T$	$T_C = 25^\circ\text{C}$	15	W
Storage Temperature	$T_{stg}$		-65 to +175	$^\circ\text{C}$
Channel Temperature	$T_{ch}$		175	$^\circ\text{C}$

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  $200\Omega$ .
3. The operating channel temperature ( $T_{ch}$ ) should not exceed  $145^\circ\text{C}$ .

### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$ )

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

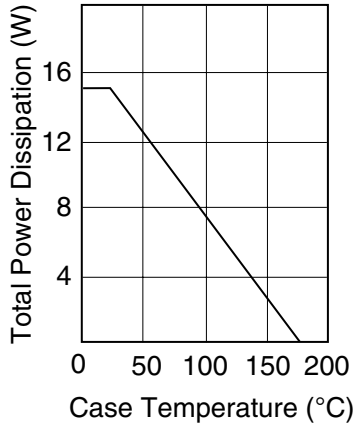
CASE STYLE: MH

G.C.P.: Gain Compression Point

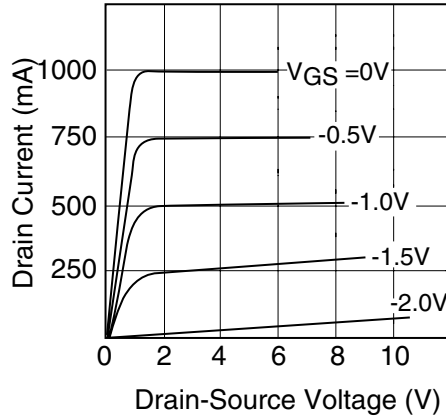
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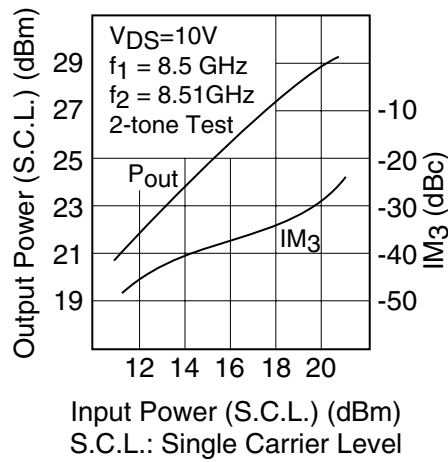
**POWER DERATING CURVE**



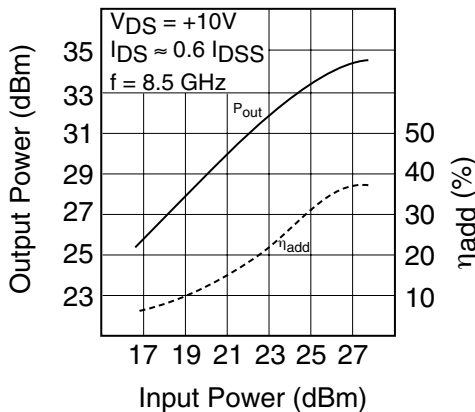
**DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE**



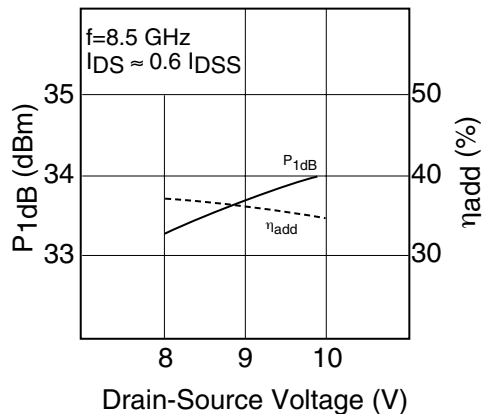
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**



**OUTPUT POWER vs. INPUT POWER**

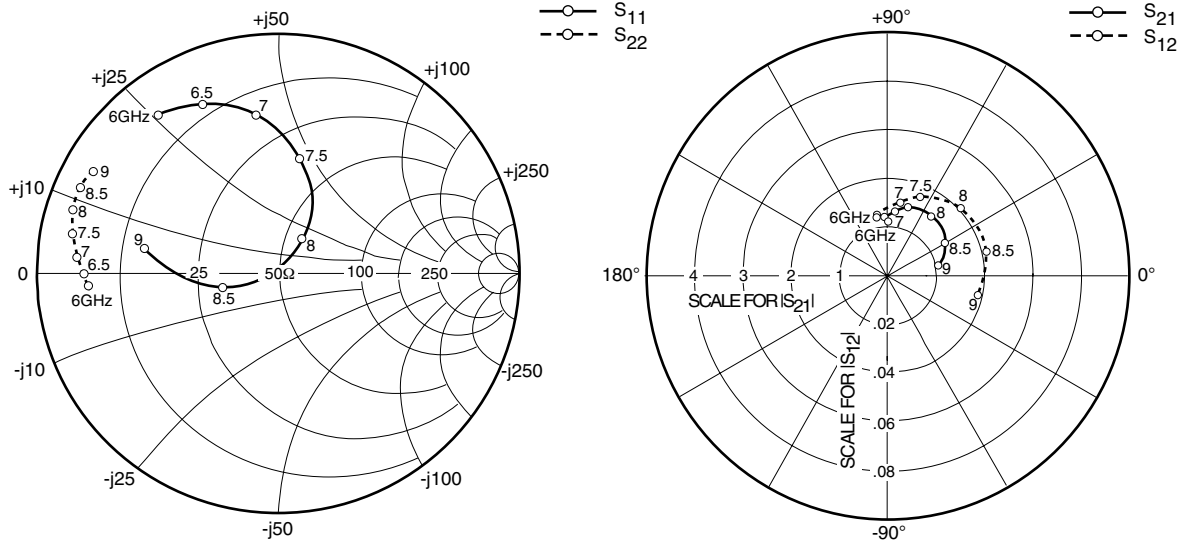


**P<sub>1dB</sub> &  $\eta_{add}$  vs. V<sub>DS</sub>**



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### S-PARAMETERS

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

FREQUENCY (MHZ)	S11		S21		S12		S22	
	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

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### Case Style "MH" Metal-Ceramic Hermetic Package

