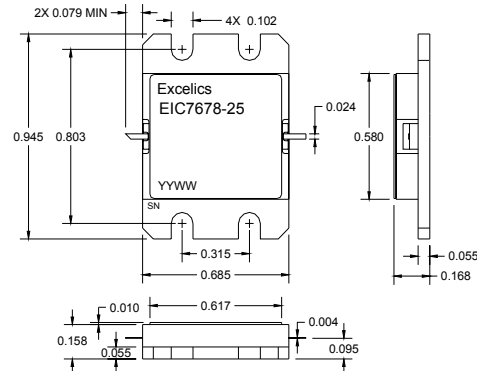


UPDATED 07/23/2008

7.60-7.80 GHz 25-Watt Internally Matched Power FET

FEATURES

- 7.60– 7.80GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +44.5 dBm Output Power at 1dB Compression
- 8.5 dB Power Gain at 1dB Compression
- 30% Power Added Efficiency
- Hermetic Metal Flange Package
- 100% Tested for DC, RF, and R_{TH}



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



Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS ¹⁾	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression $f = 7.60\text{-}7.80\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 6500\text{mA}$	43.5	44.5		dBm
G_{1dB}	Gain at 1dB Compression $f = 7.60\text{-}7.80\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 6500\text{mA}$	7.5	8.5		dB
ΔG	Gain Flatness $f = 7.60\text{-}7.80\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 6500\text{mA}$			± 0.6	dB
PAE	Power Added Efficiency at 1dB Compression $f = 7.60\text{-}7.80\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 6500\text{mA}$		30		%
I_{d1dB}	Drain Current at 1dB Compression $f = 7.60\text{-}7.80\text{GHz}$		6800	7700	mA
I_{DSS}	Saturated Drain Current $V_{DS} = 3\text{ V}$, $V_{GS} = 0\text{ V}$		11	13	A
V_P	Pinch-off Voltage $V_{DS} = 3\text{ V}$, $I_{DS} = 130\text{ mA}$		-2.5	-4.0	V
R_{TH}	Thermal Resistance ²⁾		1.3	1.6	$^\circ\text{C/W}$

Note: 1) Tested with 50 Ohm gate resistor.

2) Overall R_{th} depends on case mounting.

MAXIMUM RATING AT 25°C ^{1,2}

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	15	10V
V_{gs}	Gate-Source Voltage	-5	-4V
P_{in}	Input Power	38.5 dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
T_{stg}	Storage Temperature	-65 to +175 $^\circ\text{C}$	-65 to +175 $^\circ\text{C}$
P_t	Total Power Dissipation	93W	93W

Note: 1. Exceeding any of the above ratings may result in permanent damage.

2. Exceeding any of the above ratings may reduce MTTF below design goals.

Specifications are subject to change without notice.

Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085

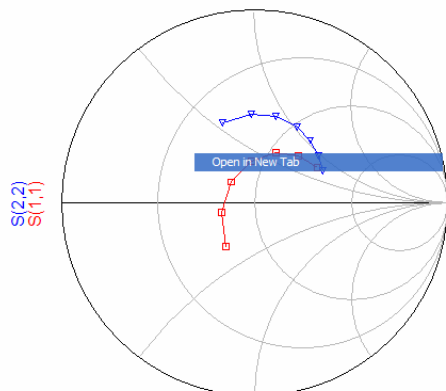
Phone: 408-737-1711 Fax: 408-737-1868 Web: www.excelics.com

page 1 of 2

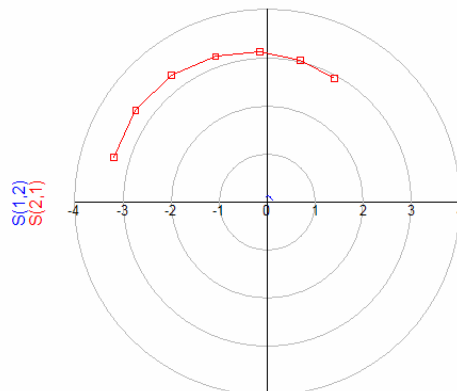
Revised July 2008

UPDATED 07/23/2008

7.60-7.80 GHz 25-Watt Internally Matched Power FET



freq (7.400GHz to 8.000GHz)

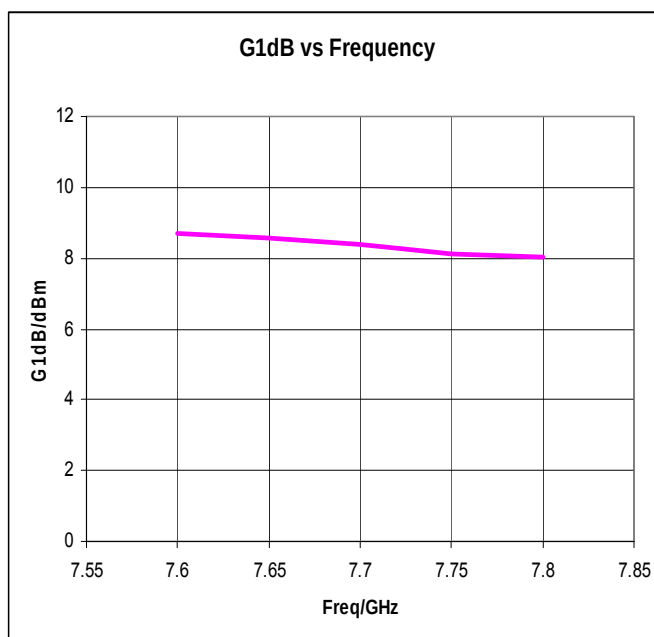
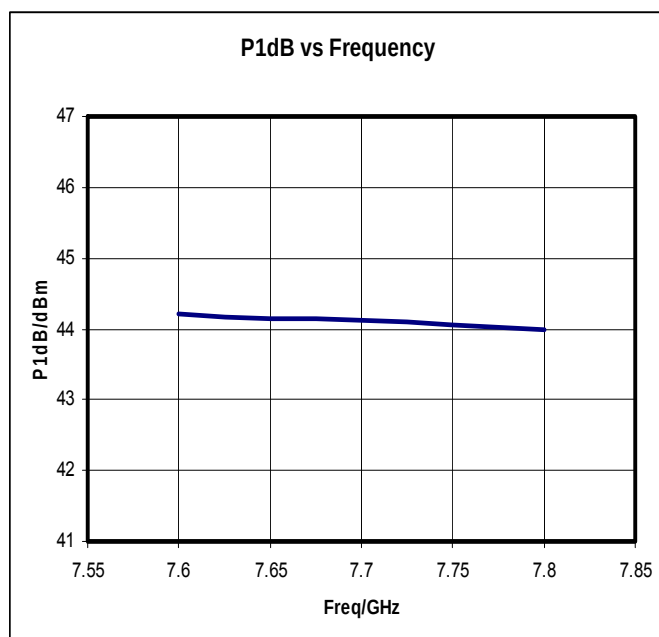


freq (7.400GHz to 8.000GHz)

freq	S(1,1)	S(1,2)	S(2,1)	S(2,2)
7.400GHz	0.273 / -123.000	0.108 / 109.460	3.304 / 163.930	0.444 / 112.100
7.500GHz	0.178 / -162.590	0.112 / 88.760	3.323 / 145.280	0.456 / 92.010
7.600GHz	0.160 / 138.670	0.112 / 71.770	3.293 / 127.270	0.459 / 76.170
7.700GHz	0.213 / 94.000	0.113 / 52.960	3.191 / 109.640	0.447 / 60.600
7.800GHz	0.280 / 67.120	0.112 / 36.430	3.102 / 92.950	0.432 / 47.940
7.900GHz	0.331 / 47.200	0.109 / 20.070	3.001 / 76.810	0.408 / 36.210

S-PARAMETERS

Measured at V_{ds}=10V, I_{DSQ}=6500mA



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page 2 of 2
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