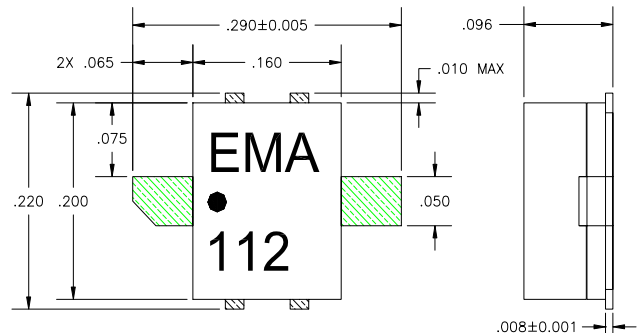


# EMA112-CP083

## 0.5 – 3.0 GHz High Linearity Power MMIC

### Features

- 0.5 – 3.0 GHz Bandwidth
- 28.0dBm Typical Output Power at 1dB Compression
- 15.0 dB Typical Small Signal Gain
- Single Bias Supply



Caution! ESD sensitive device.

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

SYMBOL	PARAMETERS/TEST CONDITIONS <sup>1</sup>	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	0.5		3	GHz
P <sub>1dB</sub>	Power at 1dB Compression $V_{DD} = 8.0\text{V}$ , $F=2.4\text{G}$	27.0	28.0		dBm
G <sub>SS</sub>	Small Signal Gain $V_{DD} = 8.0\text{V}$ , $F=2.4\text{G}$	13.0	15.0		dB
OIMD3	Output 3 <sup>rd</sup> Order Intermodulation Distortion @ $\Delta f=10\text{MHz}$ , Each Tone Pout 18dBm $V_{DD} = 8.0\text{V}$ , $F=2.4\text{G}$		-46	-43	dBc
NF	Noise Figure $V_{DD} = 8.0\text{V}$ , $F=2.4\text{G}$		2.7	3.2	dB
RL <sub>IN</sub>	Input Return Loss $V_{DD} = 8.0\text{V}$ , $F=2.4\text{G}$	8	10		dB
RL <sub>OUT</sub>	Output Return Loss $V_{DD} = 8.0\text{V}$ , $F=2.4\text{G}$	8	10		dB
I <sub>DD</sub>	Power Supply Current	170	210	250	mA
R <sub>TH</sub>	Thermal Resistance <sup>1</sup>		35		$^\circ\text{C/W}$

### ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION<sup>1,2</sup>

SYMBOL	CHARACTERISTIC	VALUE
V <sub>DD</sub>	Power Supply Voltage	8 V
V <sub>GG</sub>	Gate Voltage	-3 V
I <sub>DD</sub>	Drain Current	IDSS
I <sub>GSF</sub>	Forward Gate Current	10 mA
P <sub>IN</sub>	Input Power	@ 3dB compression
P <sub>T</sub>	Total Power Dissipation	3.5 W
T <sub>CH</sub>	Channel Temperature	150 $^\circ\text{C}$
T <sub>STG</sub>	Storage Temperature	-65/+150 $^\circ\text{C}$

Notes: 1. Operating the device beyond any of the above ratings may result in permanent damage or reduction of MTTF.

2. Bias conditions must also satisfy the following equation  $V_{DS} * I_{DS} < (T_{CH} - T_b) / R_{TH}$ ; where  $T_b$  = base plate temperature

Specifications are subject to change without notice.

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page 1 of 2

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ISSUED 11/27/2006

## 0.5 – 3.0 GHz High Linearity Power MMIC

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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page 2 of 2  
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