



PRELIMINARY

# EIM1314-5

ISSUED: 11/18/2008

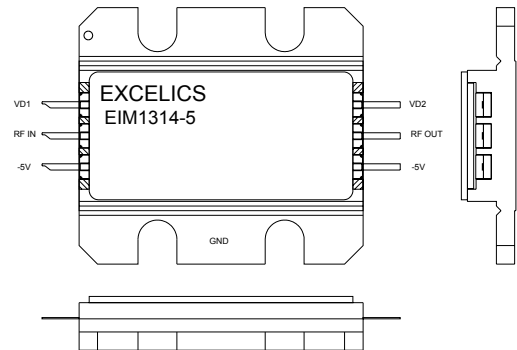
## 13.75-14.50GHz Multi-Stage Power Amplifier

### FEATURES

- 13.75– 14.50GHz Operating Frequency Range
- 36.0dBm Output Power at 1dB Compression
- 26.0 dB Typical Power Gain @1dB gain compression
- -43dBc Typical OIM3 @ each tone Pout 23.0dBm
- Non-Hermetic Metal Flange Package

### APPLICATIONS

- Point-to-point and point-to-multipoint radio
- Military Radar Systems



Caution! ESD sensitive device.

### ELECTRICAL CHARACTERISTICS (Tb = 25 °C, 50 ohm, VD1=7V, VD2=10V, Vgg=-5V)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>F</b>	Operating Frequency Range	13.75		14.50	GHz
<b>P1dB</b>	Output Power at 1dB Gain Compression	35.0	36.0		dBm
<b>G1dB</b>	Gain @1dB gain compression	22	26		dB
<b>OIMD3</b>	Output 3 <sup>rd</sup> Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 23.0dBm		-43	-40	dBc
<b>Input RL</b>	Input Return Loss		-12	-8	dB
<b>Output RL</b>	Output Return Loss		-15	-10	dB
<b>VD1</b>	Drain Supply Voltage 1		7		V
<b>VD2</b>	Drain Supply Voltage 2		10		V
<b>I<sub>DQ1</sub></b>	Quiescent Drain Current 1		380		mA
<b>I<sub>DQ2</sub></b>	Quiescent Drain Current 2		2600	3100	mA
<b>Vgg</b>	Gate Supply Voltage		-5		V
<b>Rth</b>	Thermal Resistance		2.2		°C/W
<b>ΔTch</b>	Channel Temperature Rise	-30		80	°C

Note: Turn on/off sequence is required:

- to turn on: apply -5V on both Vgg first, then +7V and +10V.
- to turn off: turn +7V and +10V off first, then turn -5V off

Specifications are subject to change without notice.

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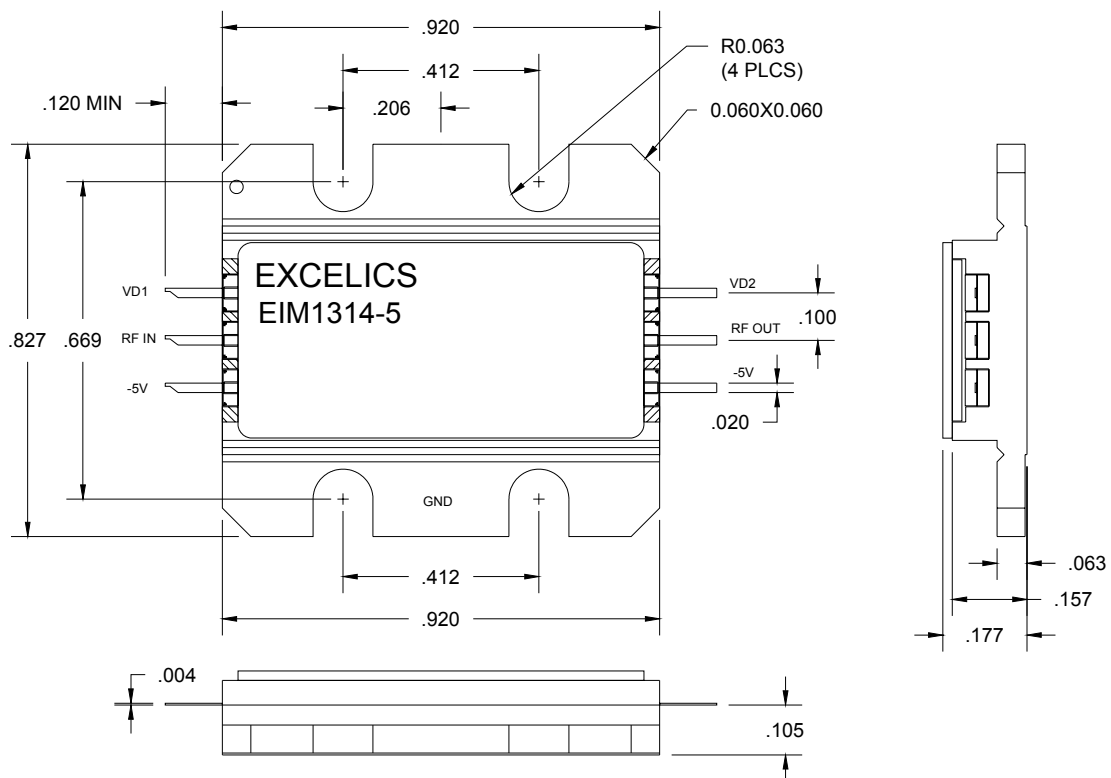
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### MAXIMUM RATINGS @25°C<sup>1,2</sup>

SYMBOL	CHARACTERISTIC	ABSOLUTE	CONTINUOUS <sup>1,2</sup>
V <sub>D1</sub>	Drain Supply Voltage 1	12V	8V
V <sub>D2</sub>	Drain Supply Voltage 2	14V	10V
V <sub>gg</sub>	Gate Supply Voltage	-10V	-6 V
I <sub>gg</sub>	Gate Current	150mA	50 mA
P <sub>IN</sub>	Input Power	20dBm	@ 3dB compression
T <sub>CH</sub>	Channel Temperature	175°C	175°C
T <sub>STG</sub>	Storage Temperature	-65/175°C	-65/175°C
P <sub>T</sub>	Total Power Dissipation	45W	40W

Notes: 1. Operating the device beyond any of the above rating may reduce MTTF and cause permanent damage.  
 2. Bias conditions must also satisfy the following equation  $V_{dd} \cdot I_{dd} < (T_{CH} - T_b) / R_{TH}$

### Package Dimension and Pin Assignment



Dimensions are in inches

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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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