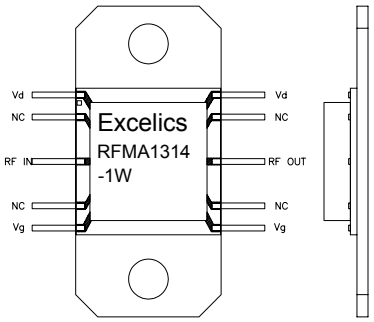
RFMA1314-1W

UPDATED 01/03/2005

13.75 – 14.50 GHz Power Amplifier MMIC

FEATURES

- **13.75– 14.50GHz Operating Frequency Range**
- **29.5dBm Output Power at 1dB Compression**
- **30.0 dB Typical Small Signal Gain**
- **-41dBc Typical OIM3 @ each tone Pout 18.5dBm**



Different Packages Are Available

APPLICATIONS

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

Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, 50 ohm, Vdd=7V, Vgg=-5V)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	13.75		14.50	GHz
P1dB	Output Power at 1dB Gain Compression	28.5	29.5		dBm
G_{SS}	Small Signal Gain	27.0	30.0		dB
OIMD3	Output 3rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 18.5dBm		-41	-38	dBc
Input RL	Input Return Loss		-10	-7	dB
Output RL	Output Return Loss		-12	-10	dB
Idd	Drain Current		900	1050	mA
Vdd	Drain Supply Voltage		7	8	V
Rth	Thermal Resistance (Au-Sn Eutectic Attach)		7		°C/W
Tb	Operating Base Plate Temperature	-30		+80	ºC

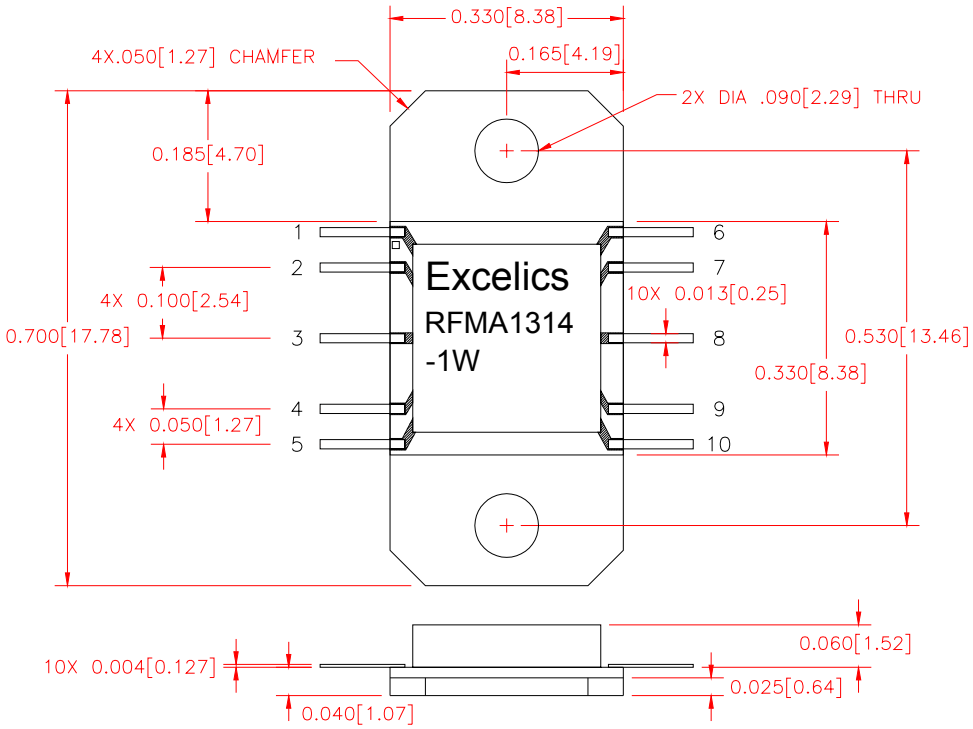
MAXIMUM RATINGS @25°C

SYMBOL	CHARACTERISTIC	ABSOLUTE	CONTINUOUS [1,2]
V_{DD}	Drain Supply Voltage	12V	8V
V_{GG}	Gate Supply Voltage	-8V	-3V
I_{DD}	Drain Current	Idss	1.1A
I_{GG}	Gate Current	60mA	10 mA
P_{IN}	Input Power	20dBm	@ 3dB compression
T_{CH}	Channel Temperature	175°C	150°C
T_{STG}	Storage Temperature	-65/175°C	-65/150°C
P_T	Total Power Dissipation	15.0W	12.6W

1. Operating the device beyond any of the above rating may result in permanent damage.
2. Bias conditions must also satisfy the following equation Vdd*Idd < (T_{CH} –Tb)/R_{TH}; where T_b = operating base plate temperature

UPDATED 01/03/2005

01 Package Outline



All dimensions in inches [mm]

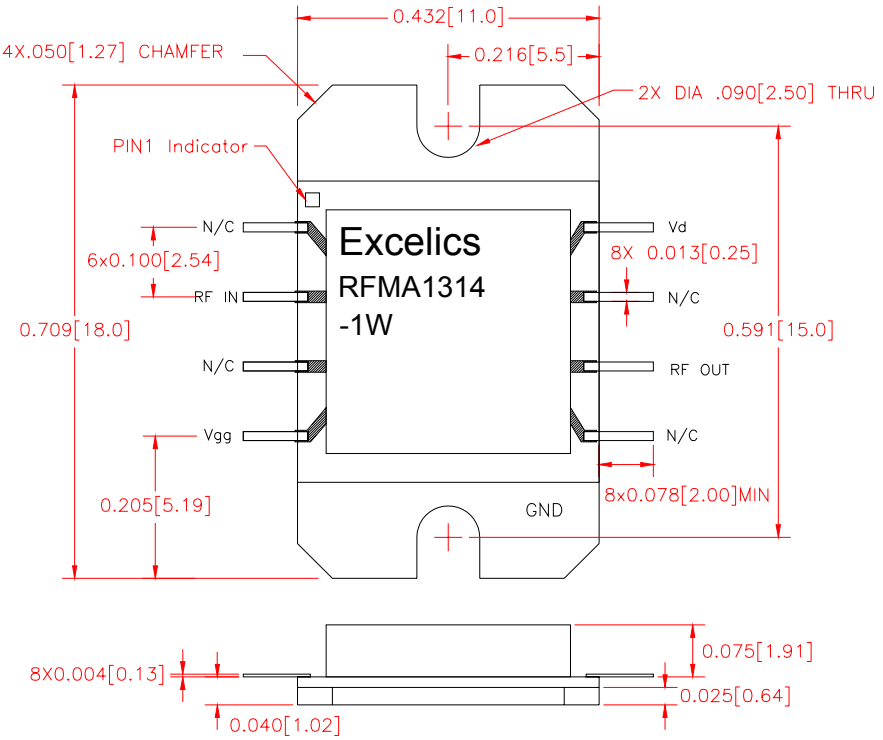
01 Package Pin Assignment

	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10
RFMA1314-1W-01	Vd	NC	RF IN	NC	Vg	Vd	NC	RF OUT	NC	Vg
RFMA1314-1W-01A	NA	Vd	RF IN	Vg	NA	NA	Vd	RF OUT	Vg	NA
RFMA1314-1W-01B	Vd	NA	RF IN	NA	Vg	Vd	NA	RF OUT	NA	Vg

NOTE:
1. PACKAGE 01A: Recommend to Use
2. NC: Not Connected
3. NA: Not Available

UPDATED 01/03/2005

02 Package Outline



All dimensions in inches [mm]

ORDERING INFORMATION

Part Number	
RFMA1314-1W-01	Refer 01 Package Outline
RFMA1314-1W-01A	Refer 01 Package Outline
RFMA1314-1W-01B	Refer 01 Package Outline
RFMA1314-1W-02	Refer 02 Package Outline