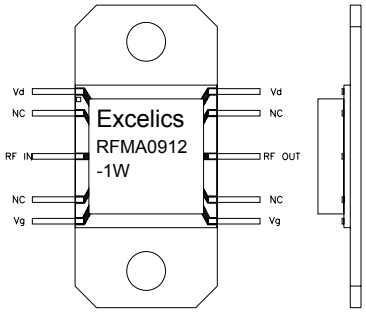
RFMA0912-1W

UPDATED 2/01/2005

9.50 – 11.70 GHz Power Amplifier MMIC

FEATURES

- **9.50 – 11.70GHz Operating Frequency Range**
- **30.0dBm Output Power at 1dB Compression**
- **31.0 dB Typical Power Gain @ 1dB Gain Compression**
- **-41dBc Typical OIM3 @ each tone Pout 19.0dBm**



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)

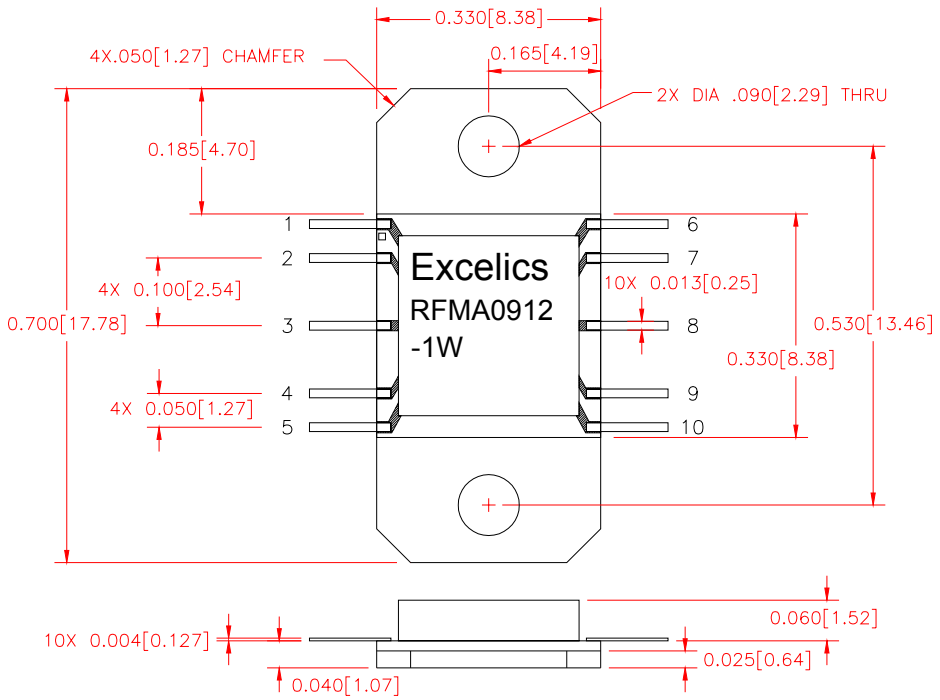
SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	9.5		11.7	GHz
P1dB	Output Power at 1dB Gain Compression	29	30		dBm
G1dB	Gain @1dB gain compression	28	31		dB
OIMD3	Output 3rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 19dBm	-38	-41		dBc
Input RL	Input Return Loss		-10	-8	dB
Output RL	Output Return Loss		-6		dB
Idd	Drain Current		900	1050	mA
Vdd	Drain Supply Voltage		7	8	V
Vgg	Gate Supply Voltage		-5		V
Rth	Thermal Resistance (Au-Sn Eutectic Attach)		7	7.5	°C/W
Tb	Operating Base Plate Temperature	- 30		+ 80	°C

MAXIMUM RATINGS AT 25°C

SYMBOL	CHARACTERISTIC	ABSOLUTE	CONTINUOUS[1,2]
Vdd	Drain Supply Voltage	12V	8V
Vgg	Gate Supply Voltage	-8V	-3 V
Idd	Drain Current	Idss	1.9A
Igg	Gate Current	132mA	22 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 < $(T_{CH} - T_{HS})/R_{TH}$; where T_{HS} = ambient temperature

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
RFMA0912-1W-01	Vd	NC	RF IN	NC	Vg	Vd	NC	RF OUT	NC	Vg
RFMA0912-1W-01A	NA	Vd	RF IN	Vg	NA	NA	Vd	RF OUT	Vg	NA
RFMA0912-1W-01B	Vd	NA	RF IN	NA	Vg	Vd	NA	RF OUT	NA	Vg
RFMA0912-1W-01C	GND	GND	RF IN	Vg	GND	GND	GND	RF OUT	Vd	NC

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

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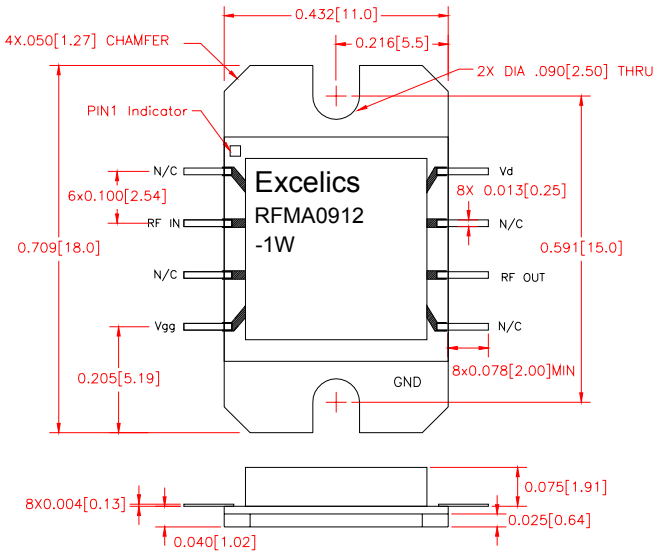
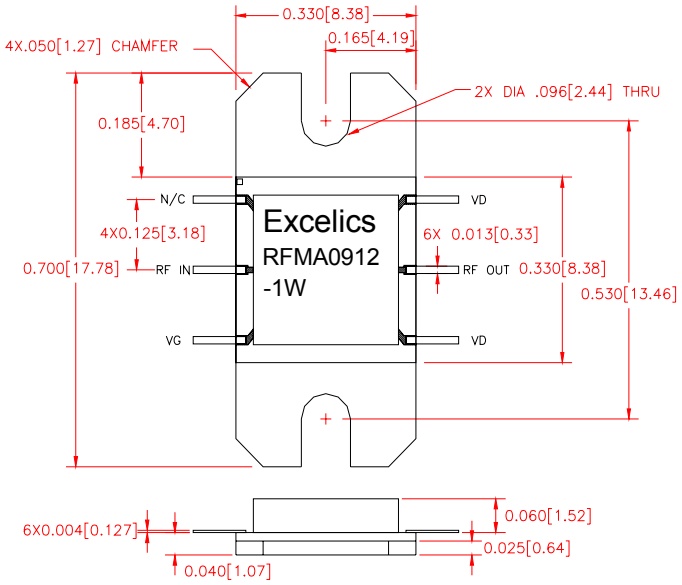
02 Package Outline



All dimensions in inches [mm]

03 Package Outline



All dimensions in inches [mm]

ORDERING INFORMATION

Part Number	
RFMA0912-1W-01	Refer 01 Package Outline
RFMA0912-1W-01A	Refer 01 Package Outline
RFMA0912-1W-01B	Refer 01 Package Outline
RFMA0912-1W-01C	Refer 01 Package Outline
RFMA0912-1W-02	Refer 02 Package Outline
RFMA0912-1W-03	Refer 03 Package Outline