

Preliminary Information

This document contains information on a product under development. The parametric information contains target parameters that are subject to change.



RI23109U

Personal Communication Services (PCS) TDMA Power Amplifier (1850-1919 MHz)

Developed for personal communications services and wireless local loop applications, this small and efficient power amplifier packs full PCS band coverage into a single package. It meets the stringent spectral linearity requirements of TDMA PCS transmission standards and achieves a power added efficiency greater than 37%. The device operates in the 1850 to 1910 MHz band, with an output power of 30dBm. It is designed to operate directly from four-cell nickel cadmium battery or a two cell lithium ion battery, eliminating the need for external switch.

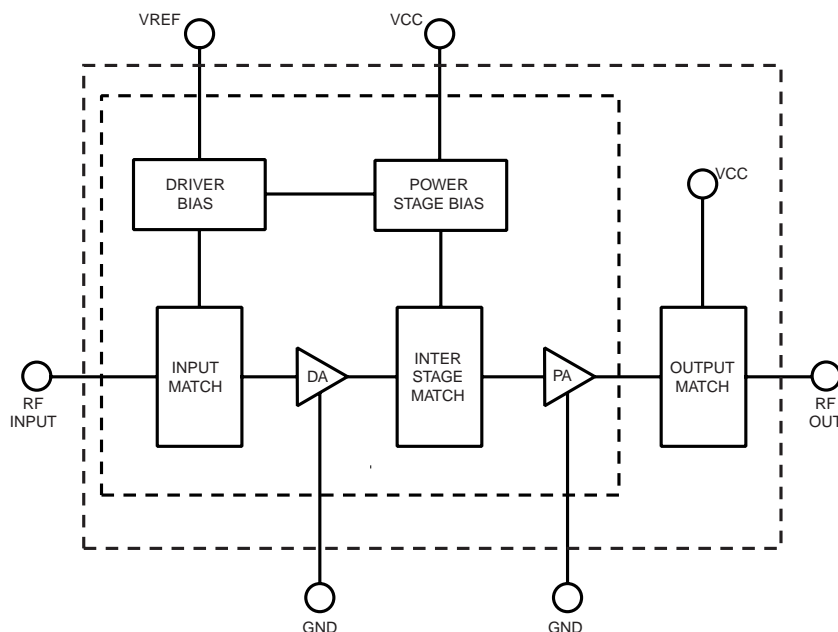
Distinguishing Features

- 3V Single Supply Operation
- Good Linearity
- Large dynamic range
- PCS band coverage (1850-1910 MHz)
- Surface Mount 8 pin LCC Package
- Power Down Control

Applications

- Personal Communications Services – TDMA
- Wireless Local Loop

Figure 1. Functional Block Diagram



Ordering Information

Model Number	Manufacturing Part Number	Product Revision	Package	Operating Temperature

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Technical Specifications

Table 1. Electrical Specifications⁽¹⁾

Parameter	Symbol	Min	Typ	Max	Unit
Frequency Range	Fo	1850		1910	MHz
Gain @ 0 dbm	Go	23	24	26	dB
Gain @ 30dbm	Gp	23	24	26	dB
Quiescent current	IccQ		120	140	mA
Output Power @ 3.0v	Po	28	29		dBm
Output Power @ 3.5v	Po	30			dBm
ACPR @ Po = 30 dBm,3.5v					
@ 30 KHz, Min @ 85c , Typ 25c		29	30		dBc
@ 60 KHz, Min @ 85c , Typ 25c		46	48		dBc
@ 90 KHz, Min @ 85c , Typ 25c		50	55		dBc
Power added Efficiency @ 30dBm,3.5v	PAED	38	40		%
Noise figure	NF		6	7	dB
Noise Power in RX band 1930 -1990MHz	Np		-136	-134	dBm/HZ
Input vswr			2.3:1		
Harmonics @ 30dBm ,f2,f3	Ho	30			dBc
Stability @ 3.5 v ,30dBm	St		5:1		
Ruggedness @ 30dbm	Ru		10:1		
NOTE(S): ⁽¹⁾ TDMA MODE ,VCC= 3.5V,VREF=3.1V ,FREQ' =1850 -1910 MHZ,Tc =- 30C to + 85C					

Table 2. Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Frequency Range	Fo	1850		1910	MHz
Reference Voltage	Vref	3.0	3.1	3.3	Volts
Supply Voltage	Vcc	3.0	3.5	4.2	Volts
Operating Temperature	Tc	- 30		+ 85	C

Table 3. Absolute Maximum Ratings⁽¹⁾

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	Vcc			5.0	V
Reference Voltage	Vref			3.7	V
Power input	Pin			8	dBm
Case Temperature	Tc	- 30		+ 100	C
Storage Temperature	Tstg	- 30		+125	C
NOTE(S): (1) NO DAMAGE - VCC=8.5V,Pin=8 dBm, 25C.					

Package Dimensions

Figure 2.

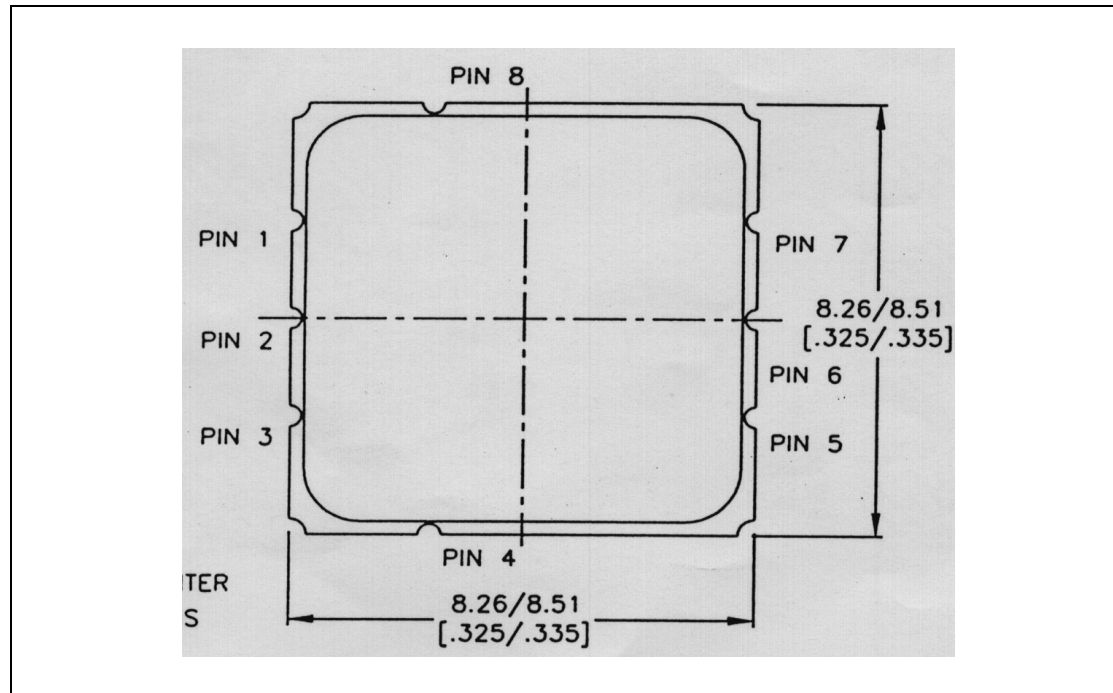


Figure 3.

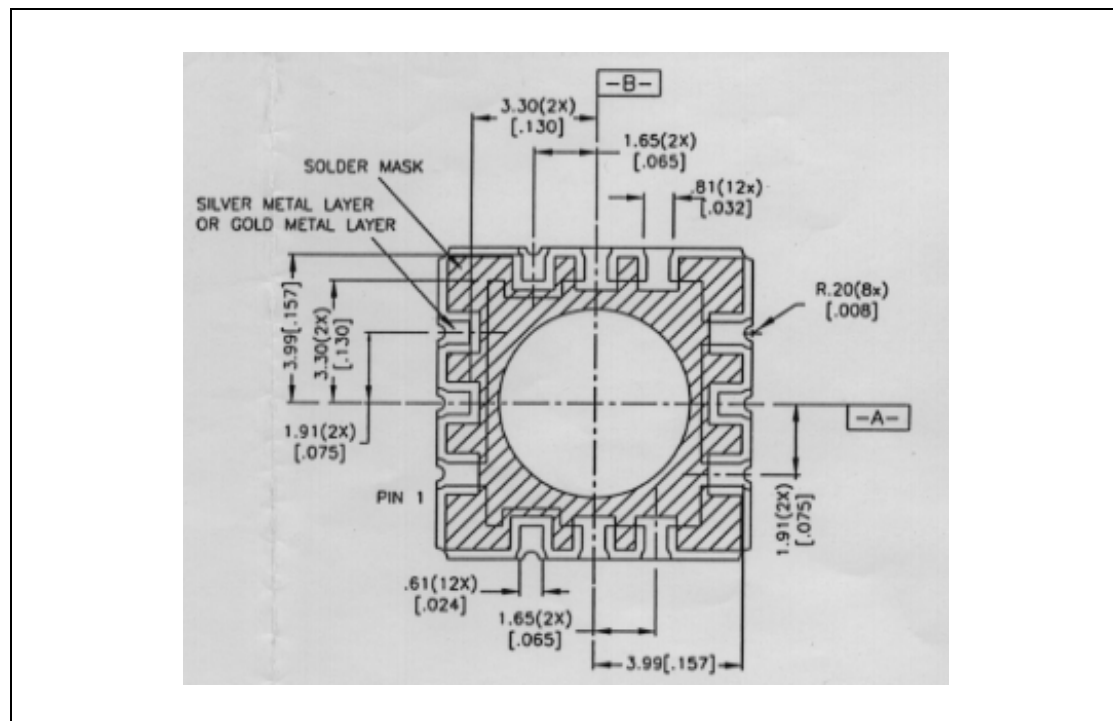


Figure 4.

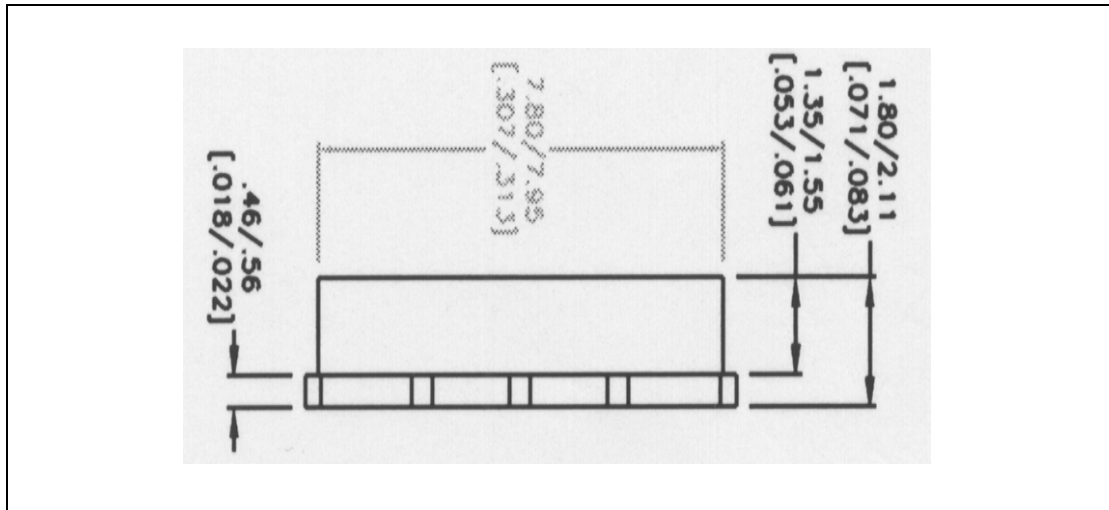


Table 4. Pin Description

Pin #	Function
1	GND
2	RF IN
3	VREF
4	VCC1 ⁽¹⁾
5	GND
6	RF OUT
7	GND
8	VCC2 ⁽¹⁾

NOTE(S):
⁽¹⁾ VCC supply lines may be connected together.
 2. Backside ground is required for proper operation.



Further Information
literature@conexant.com
1-800-854-8099 (North America)
33-14-906-3980 (International)

Web Site
www.conexant.com

World Headquarters
Conexant Systems, Inc.
4311 Jamboree Road
P. O. Box C
Newport Beach, CA
92658-8902
Phone: (949) 483-4600
Fax: (949) 483-6375

U.S. Florida/South America
Phone: (813) 799-8406
Fax: (813) 799-8306

U.S. Los Angeles
Phone: (805) 376-0559
Fax: (805) 376-8180

U.S. Mid-Atlantic
Phone: (215) 244-6784
Fax: (215) 244-9292

U.S. North Central
Phone: (630) 773-3454
Fax: (630) 773-3907

U.S. Northeast
Phone: (978) 692-7660
Fax: (978) 692-8185

U.S. Northwest/Pacific West
Phone: (408) 249-9696
Fax: (408) 249-7113

U.S. South Central
Phone: (972) 733-0723
Fax: (972) 407-0639

U.S. Southeast
Phone: (770) 246-8283
Fax: (770) 246-0018

U.S. Southwest
Phone: (949) 483-9119
Fax: (949) 483-9090

APAC Headquarters
Conexant Systems
Singapore, Pte. Ltd.
1 Kim Seng Promenade
Great World City
#09-01 East Tower
Singapore 237994
Phone: (65) 737 7355
Fax: (65) 737 9077

Australia
Phone: (61 2) 9869 4088
Fax: (61 2) 9869 4077

China
Phone: (86 2) 6361 2515
Fax: (86 2) 6361 2516

Hong Kong
Phone: (852) 2827 0181
Fax: (852) 2827 6488

India
Phone: (91 11) 692 4780
Fax: (91 11) 692 4712

Korea
Phone: (82 2) 565 2880
Fax: (82 2) 565 1440

Europe Headquarters
Conexant Systems France
Les Taissounieres B1
1681 Route des Dolines
BP 283
06905 Sophia Antipolis
Cedex
France
Phone: (33 4) 93 00 33 35
Fax: (33 4) 93 00 33 03

Europe Central
Phone: (49 89) 829 1320
Fax: (49 89) 834 2734

Europe Mediterranean
Phone: (39 02) 9317 9911
Fax: (39 02) 9317 9913

Europe North
Phone: (44 1344) 486 444
Fax: (44 1344) 486 555

Europe South
Phone: (33 1) 41 44 36 50
Fax: (33 1) 41 44 36 90

Middle East Headquarters
Conexant Systems
Commercial (Israel) Ltd.
P. O. Box 12660
Herzlia 46733, Israel
Phone: (972 9) 952 4064
Fax: (972 9) 951 3924

Japan Headquarters
Conexant Systems Japan
Co., Ltd.
Shimomoto Building
1-46-3 Hatsudai,
Shibuya-ku, Tokyo
151-0061 Japan
Phone: (81 3) 5371-1567
Fax: (81 3) 5371-1501

Taiwan Headquarters
Conexant Systems, Taiwan
Co., Ltd.
Room 2808, 333
International Trade Building
Keelung Road, Section 1
Taipei 110, Taiwan, ROC
Phone: (886 2) 2720 0282
Fax: (886 2) 2757 6760