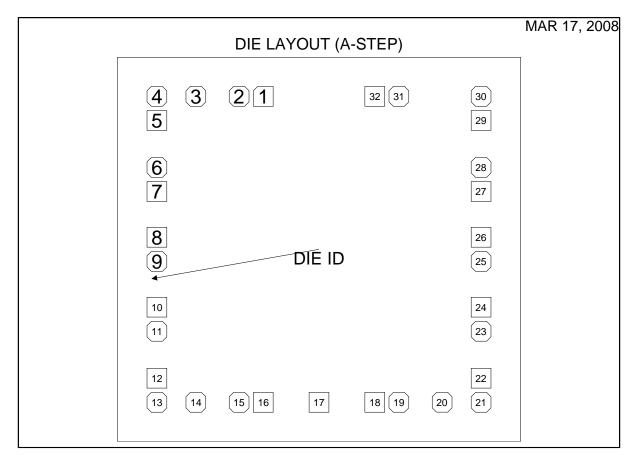


LMP2234A MDC MWC

Quad Micropower, Precision, RRO, Operational Amplifier with CMOS Input



DIE/WAFER CHARACTERISTICS

Fabrication Attributes		General Die Information		
Physical Die	LMP2234A	Bond Pad Opening	68.60µm x 68.60µm	
Identification		Size (min)		
Die Step	A	Bond Pad Metalization	AL 0.5%CU	
Physical Attributes		Passivation	PECVDOX NITRIDE	
Wafer Diameter	150mm	Back Side Metal	BAREBACK	
Die Size (Drawn)	1397.00µm x 1330.96µm	Back Side Connection	Floating	
	55.0mils x 52.4mils			
Thickness	254µm Nominal			
Min Pitch	158.60µm			
Note: All values are round	ded to the nearest micron.			
Special Assembly Requir	ements:			



LMP2234A MDC MWC

Quad Micropower, Precision, RRO, Operational Amplifier with CMOS Input

Signal Name	Pad Number	X/Y Coo	X/Y Coordinates		Pad Size	
		Х	Y	Х		Y
Out A	1	-193	530	68	х	68
NC	2	-276	530	68	х	68
NC	3	-426	530	68	х	68
NC	4	-561	530	68	х	68
In A-	5	-561	446	68	х	68
NC	6	-561	284	68	х	68
In A+	7	-561	200	68	х	68
V+	8	-561	41	68	х	68
NC	9	-561	-41	68	х	68
In B+	10	-561	-200	68	х	68
NC	11	-561	-284	68	х	68
In B-	12	-561	-446	68	х	68
NC	13	-561	-530	68	х	68
NC	14	-426	-530	68	х	68
NC	15	-276	-530	68	х	68
Out B	16	-193	-530	68	х	68
NC	17	0	-530	68	х	68
Out C	18	193	-530	68	х	68
NC	19	276	-530	68	х	68
NC	20	426	-529	68	х	68
NC	21	561	-530	68	х	68
In C-	22	561	-446	68	х	68
NC	23	561	-284	68	х	68
In C+	24	561	-200	68	х	68
NC	25	561	-41	68	х	68
V-	26	561	41	68	х	68
In D+	27	561	200	68	х	68
NC	28	561	284	68	х	68
In D-	29	561	446	68	х	68
NC	30	561	530	68	х	68
NC	31	276	530	68	х	68
Out D	32	193	530	68	х	68



LMP2234A MDC MWC

Quad Micropower, Precision, RRO, Operational Amplifier with CMOS Input

Notes					
THE CONTENTS OF THIS DOCUMENT		TH NATIONAL SEMICONDUCTOR CORPO			
NATIONAL MAKES NO REPRESENTA PUBLICATION AND RESERVES THE F	TIONS OR WARRANTIES WITH RESPECT RIGHT TO MAKE CHANGES TO SPECIF	TT TO THE ACCURACY OR COMPLETED ICATIONS AND PRODUCT DESCRIPTION THERWISE, TO ANY INTELLECTUAL PRO	NESS OF THE CONTENTS OF THIS NS AT ANY TIME WITHOUT NOTICE.		
EXCEPT WHERE MANDATED BY GOV NATIONAL ASSUMES NO LIABILITY F AND APPLICATIONS USING NATIONA	/ERNMENT REQUIREMENTS, TESTING OR APPLICATIONS ASSISTANCE OR B	OF ALL PARAMETERS OF EACH PROD UYER PRODUCT DESIGN. BUYERS ARE R DISTRIBUTING ANY PRODUCTS THAT	ORT NATIONAL'S PRODUCT WARRANTY. UCT IS NOT NECESSARILY PERFORMED. E RESPONSIBLE FOR THEIR PRODUCTS INCLUDE NATIONAL COMPONENTS,		
EXCEPT AS PROVIDED IN NATIONAL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, NATIONAL ASSUMES NO LIABILITY WHATSOEVER, AND NATIONAL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY RELATING TO THE SALE AND/OR USE OF NATIONAL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.					
LIFE SUPPORT POLICY					
NATIONAL'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE CHIEF EXECUTIVE OFFICER AND GENERAL COUNSEL OF NATIONAL SEMICONDUCTOR CORPORATION.					
As used herein: Life support devices or systems are devices which (a) are intended for surgical implant into the body, or (b) support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in a significant injury to the user. A critical component is any component in 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.					
National Semiconductor and the National Semiconductor logo are registered trademarks of National Semiconductor Corporation. All other brand or product names may be trademarks or registered trademarks of their respective holders.					
Copyright© 2007 National Semiconductor Corporation					
For the most current product information visit us at www.national.com					
IN U.S.A. Tel: 1 800 962 0673 / 18760 Fax: 1 207 541 6140	IN EUROPE Tel: 49 (0) 8141 35 1370 Fax: 49 (0) 8141 35 1666	IN ASIA PACIFIC Tel: (852) 2737 1826	IN JAPAN Tel: 81 3 5639 7560		

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products (also referred to herein as "components") are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of significant portions of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI components or services with statements different from or beyond the parameters stated by TI for that component or service voids all express and any implied warranties for the associated TI component or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards which anticipate dangerous consequences of failures, monitor failures and their consequences, lessen the likelihood of failures that might cause harm and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed a special agreement specifically governing such use.

Only those TI components which TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components which have *not* been so designated is solely at the Buyer's risk, and that Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components which meet ISO/TS16949 requirements, mainly for automotive use. Components which have not been so designated are neither designed nor intended for automotive use; and TI will not be responsible for any failure of such components to meet such requirements.

Products		Applications	
Audio	www.ti.com/audio	Automotive and Transportation	www.ti.com/automotive
Amplifiers	amplifier.ti.com	Communications and Telecom	www.ti.com/communications
Data Converters	dataconverter.ti.com	Computers and Peripherals	www.ti.com/computers
DLP® Products	www.dlp.com	Consumer Electronics	www.ti.com/consumer-apps
DSP	dsp.ti.com	Energy and Lighting	www.ti.com/energy
Clocks and Timers	www.ti.com/clocks	Industrial	www.ti.com/industrial
Interface	interface.ti.com	Medical	www.ti.com/medical
Logic	logic.ti.com	Security	www.ti.com/security
Power Mgmt	power.ti.com	Space, Avionics and Defense	www.ti.com/space-avionics-defense
Microcontrollers	microcontroller.ti.com	Video and Imaging	www.ti.com/video
RFID	www.ti-rfid.com		
OMAP Applications Processors	www.ti.com/omap	TI E2E Community	e2e.ti.com
Wireless Connectivity	www.ti.com/wirelessconne	ctivity	

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265 Copyright © 2012, Texas Instruments Incorporated