HIGH FREQUENCY, HIGH-SIDE/LOW-SIDE DRIVER

FEATURES

- **Drives Two N-Channel MOSFETs in High-Side/Low-Side Configuration**
- **Maximum Boot Voltage**
- **Maximum VDD Voltage**
- **On-Chip RD Bootstrap Diode**
- **Under Voltage Lockout for High-Side and Low-Side Driver**

APPLICATIONS

- **Power Supplies for Telecom, Datacom, and Merchant Markets**
- **Half-Bridge Applications and Full-Bridge Converters**
- **Isolated Bus Architecture**
- **Two-Switch Forward Converters**
- **Active-Clamp Forward Converters**
- **High Voltage Synchronous-Buck Converters**
- **Class-D Audio Amplifiers**

DESCRIPTION

The UCC27201A is a high frequency N-Channel MOSFET driver that includes a bootstrap diode and high-side/low-side driver with independent inputs for maximum control flexibility. This allows for N-Channel MOSFET control in half-bridge, full-bridge, two-switch forward and active clamp forward converters. The low-side and the high-side gate drivers are independently controlled and matched to 1-ns between the turn-on and turn-off of each other. The UCC27201A is based on the popular UCC27201 drivers, but offers some enhancements. In order to improve performance in noisy power supply environments the UCC27201A has an enhanced ESD input structure and also has the ability to withstand a maximum of -18 V on its HS pin.

ORDERING INFORMATION(1)

PRODUCT	PACKAGE DESIGNATOR	PACKAGE	ORDERABLE PART NUMBER	PACKAGE QUANTITY
UCC27201A	TD	Bare die in gel pack(2)	UCC27201ATDA2	10
			UCC27201ATDA3	120

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.

(2) Processing is per the Texas Instruments commercial production baseline and is in compliance with the Texas Instruments Quality Control System in effect at the time of manufacture. Electrical screening consists of DC parametric and functional testing at room temperature only. Unless otherwise specified by Texas Instruments AC performance and performance over temperature is not warranted. Visual Inspection is performed in accordance with MIL-STD-883 Test Method 2010 Condition B at 75X minimum.

This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

BARE DIE INFORMATION

DIE THICKNESS	BACKSIDE FINISH	BACKSIDE POTENTIAL	BOND PAD METALLIZATION COMPOSITION	BOND PAD THICKNESS
10.5 mils.	Silicon with backgrind	GND	Al-Cu (0.5%)	598 nm

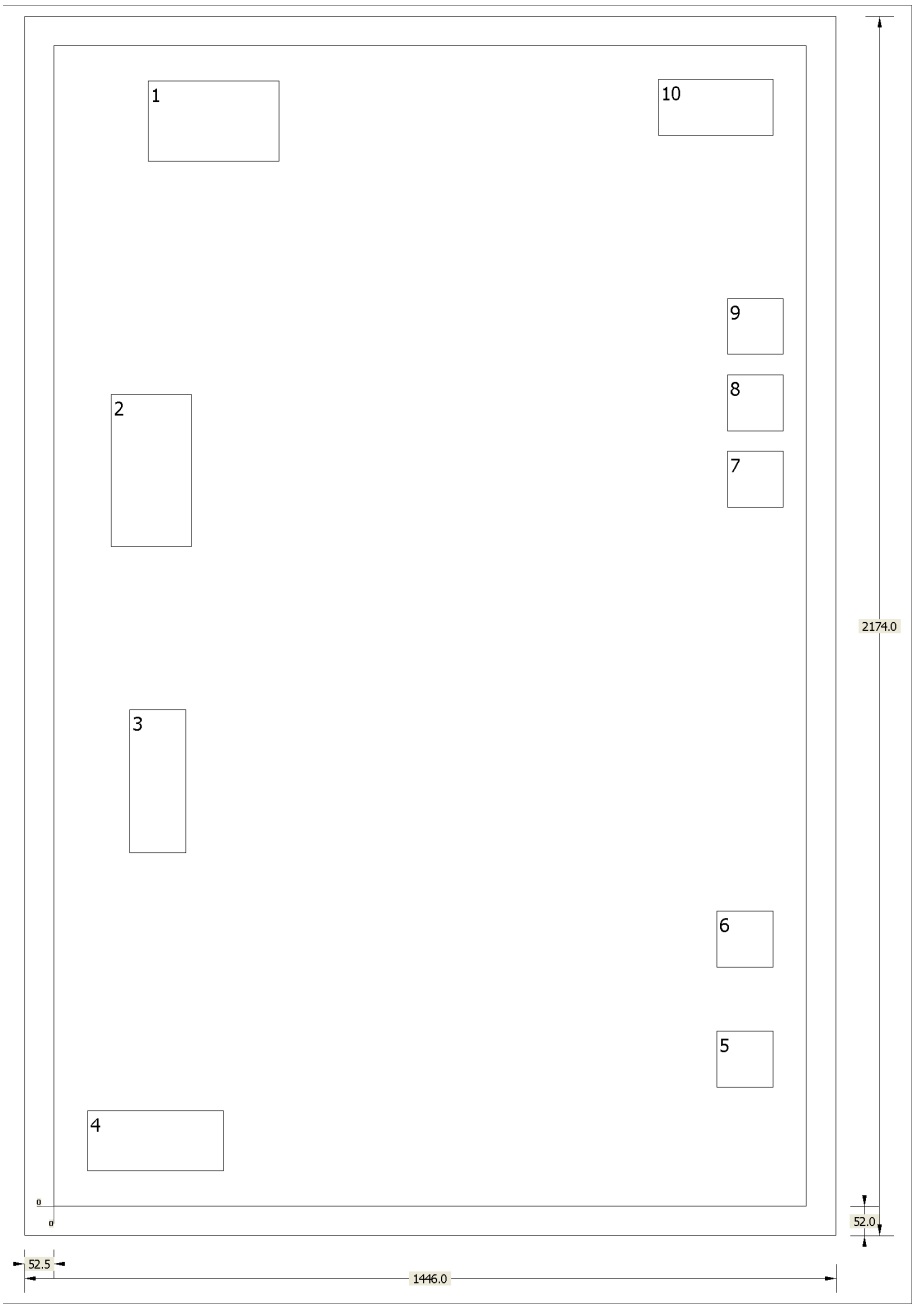

Table 1. Bond Pad Coordinates in Microns(1)

DESCRIPTION	PAD NUMBER	X MIN	Y MIN	X MAX	Y MAX
VDD	1	167.58	1863	401.58	2007
HB	2	102.24	1175.94	246.24	1447.74
HO	3	135	629.82	235.8	886.32
HS	4	59.58	62.82	302.58	170.82
HI	5	1180.8	212.13	1281.6	312.93
LI	6	1180.8	426.42	1281.6	527.22
GND	7	1199.7	1245.87	1300.5	1346.67
GND	8	1199.7	1381.86	1300.5	1482.66
GND	9	1199.7	1518.66	1300.5	1619.46
LO	10	1077.3	1908.9	1281.6	2009.7

(1) Substrate GND.

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/ Ball Finish	MSL Peak Temp (3)	Samples (Requires Login)
UCC27201ATDA2	ACTIVE			0	10	TBD	Call TI	N / A for Pkg Type	
UCC27201ATDA3	ACTIVE			0	144	TBD	Call TI	N / A for Pkg Type	

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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/wirelessconnectivity		

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265