

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.



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.



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

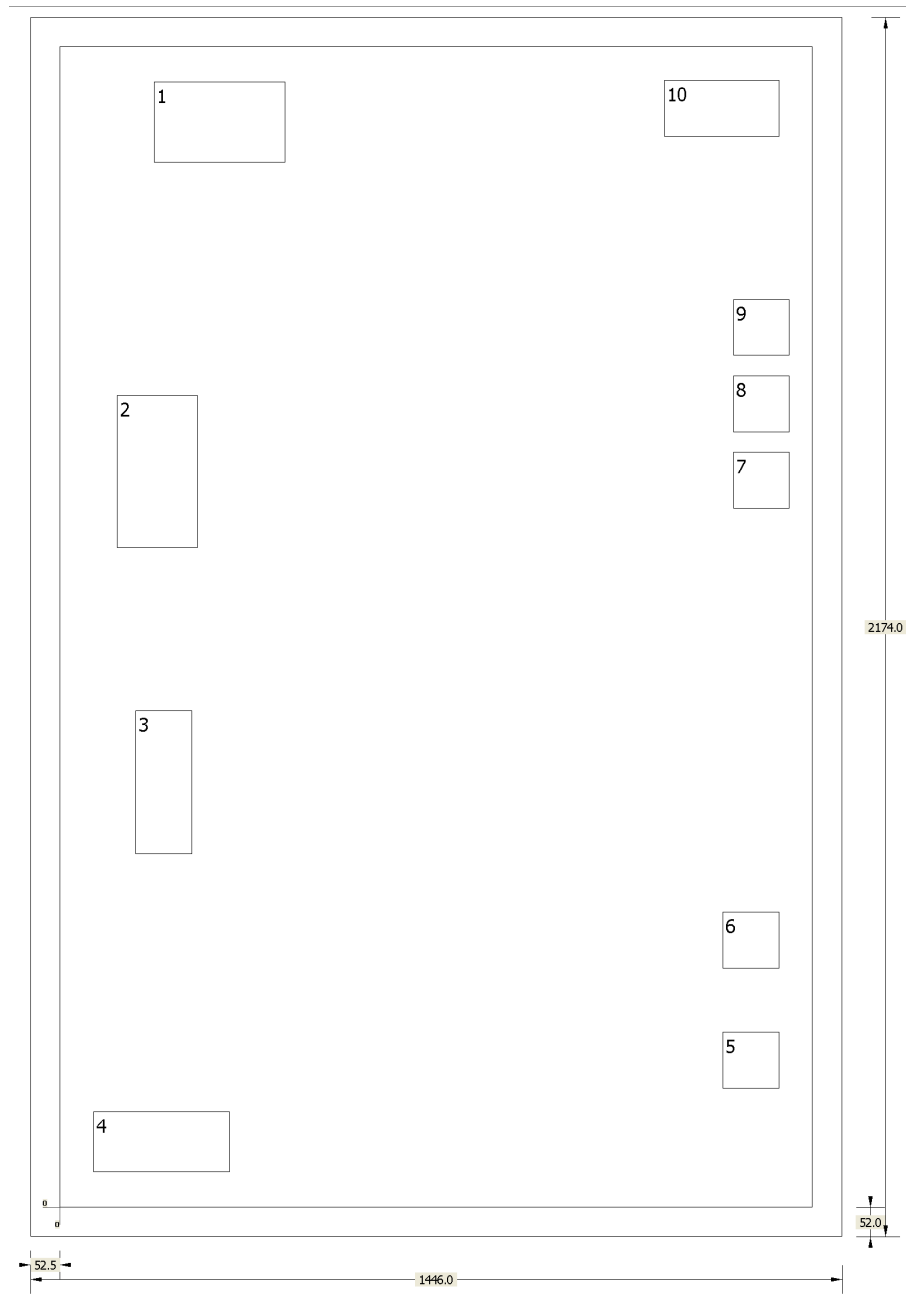


Table 1. Bond Pad Coordinates in Microns⁽¹⁾

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.



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PACKAGE OPTION ADDENDUM

5-Sep-2012

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.

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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.

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