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.

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PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of the Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

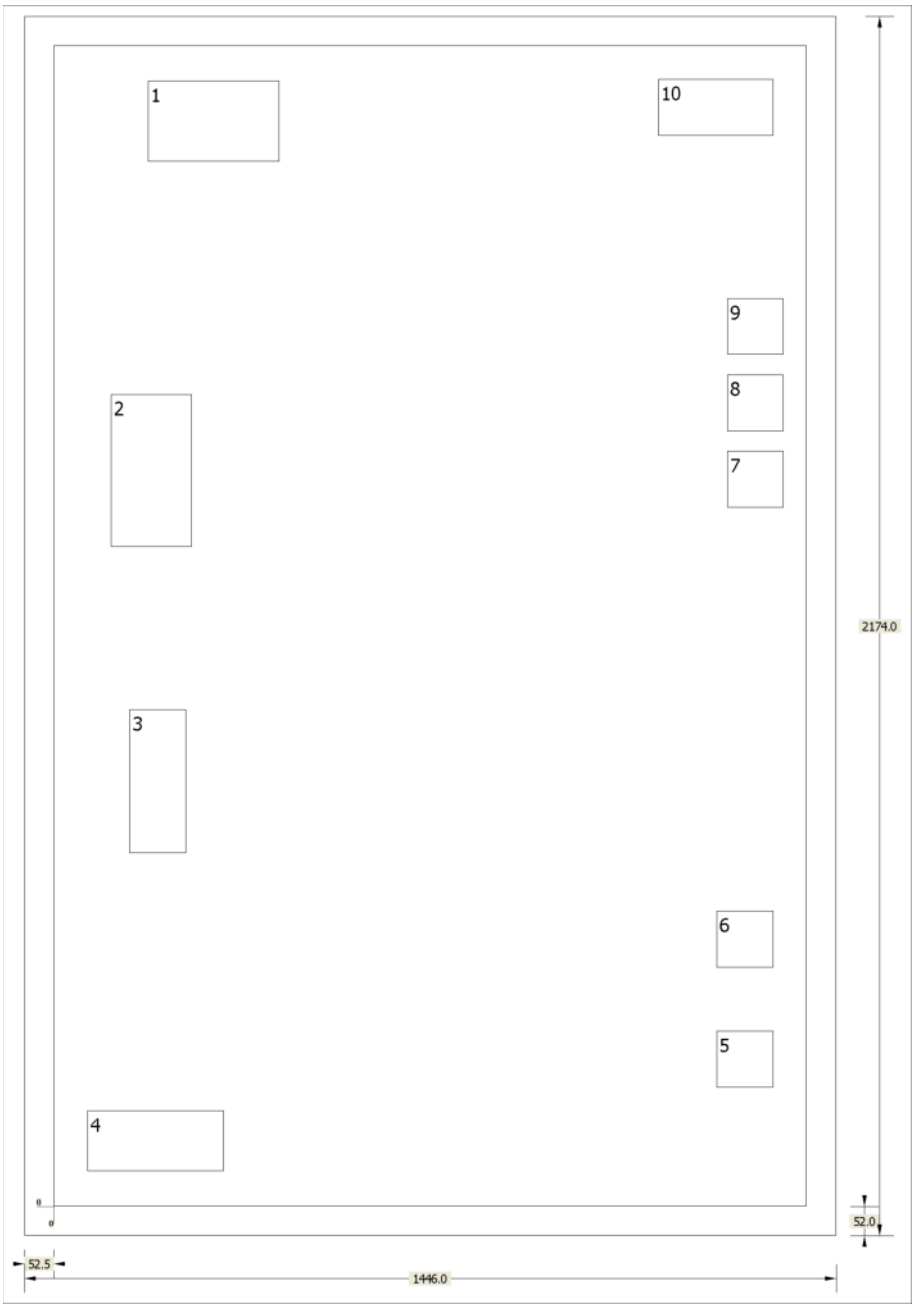
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This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

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



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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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PACKAGING INFORMATION

Orderable part number	Status (1)	Material type (2)	Package | Pins	Package qty | Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
UCC27201ATDA2	Active	Production	null (null) | 0	10 | TUBE	-	Call TI	Call TI	0 to 0	
UCC27201ATDA2.A	Active	Production	null (null) | 0	10 | TUBE	-	Call TI	Call TI	0 to 0	
UCC27201ATDA3	Active	Production	null (null) | 0	120 | TUBE	-	Call TI	Call TI	0 to 0	
UCC27201ATDA3.A	Active	Production	null (null) | 0	120 | TUBE	-	Call TI	Call TI	0 to 0	

(1) **Status:** For more details on status, see our product life cycle.

(2) **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the TI RoHS Statement for additional information and value definition.

(4) **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

(5) **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

(6) **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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OTHER QUALIFIED VERSIONS OF UCC27201A-DIE :

- Automotive : UCC27201A-Q1

NOTE: Qualified Version Definitions:

- Automotive - Q100 devices qualified for high-reliability automotive applications targeting zero defects

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