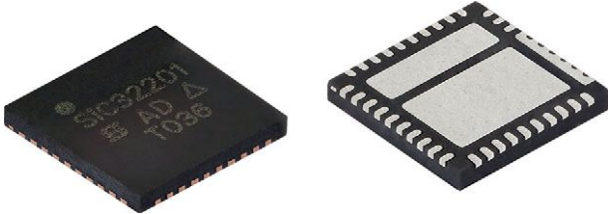


0.45 mΩ, Integrated OR-ing Switch With OR-ing Controller, Lossless Current Sense, and Temperature Report

(Datasheet in Brief)



DESCRIPTION

The SiC32201 is a highly integrated smart OR-ing solution featuring an advanced lossless current sensing design. Compared to conventional designs with shunt resistors, OR-ing MOSFETs and other discrete and ICs, the SiC32201 reduces the overall solution size and component count while increasing power density and efficiency.

The SiC32201 integrates a 0.45 mΩ n-channel OR-ing MOSFET, a MOSFET driver, forward and reverse voltage detection for OR-ing control and precision current and temperature sensing. Its internal fast reverse current protection circuit significantly reduces the reverse current level during the OR-ing input short fault, improving system bus voltage stability.

The SiC32201 is optimized for 12 V operation. It operates over the voltage range of 9 V to 20 V and can be paralleled to support different power range requirements. The current through the OR-ing switch is reported at the I_{MON} pin. The T_{MON} pin reflects the highest temperature of the parallel parts. It also flags overtemperature and insufficient OR-ing MOSFET gate drive.

The SiC32201 is available in the compact, thermally enhanced 6 mm x 6 mm PowerPAK[®] MLP66-40L package.

APPLICATION CIRCUIT

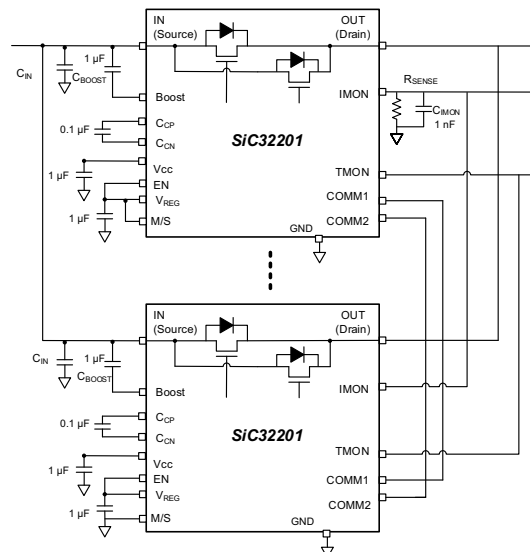


Fig. 1 - Typical Application Circuit

FEATURES

- High efficiency
 - Integrated 0.45 mΩ n-channel current sense MOSFET
 - Lossless current sense without shunt resistor
- Compact
 - Integrated current sensing and reporting circuits
 - Integrated OR-ing control and OR-ing FET driver
- Versatile
 - Guaranteed precise current reporting, ± 2 % for ≥ 10 A Load current. I_{MON} offset is ± 10 μA at 0.5 A load current
 - Can be paralleled for different power ranges
 - Device temperature reporting through T_{MON}. Highest temperature reported when multiple T_{MON} pins are connected together
- Protection and alert
 - Fast response to reverse condition, 200 ns/typ. OR-ing FET off time
 - Reverse detection indicated pulling COMM1 low
 - T_{MON} pulled high, alert junction temperature is higher than 120 °C or internal charge pump UVLO

APPLICATIONS

- High availability system power
- N+1 redundant power supplies
- Telecom infrastructure
- Server and networking



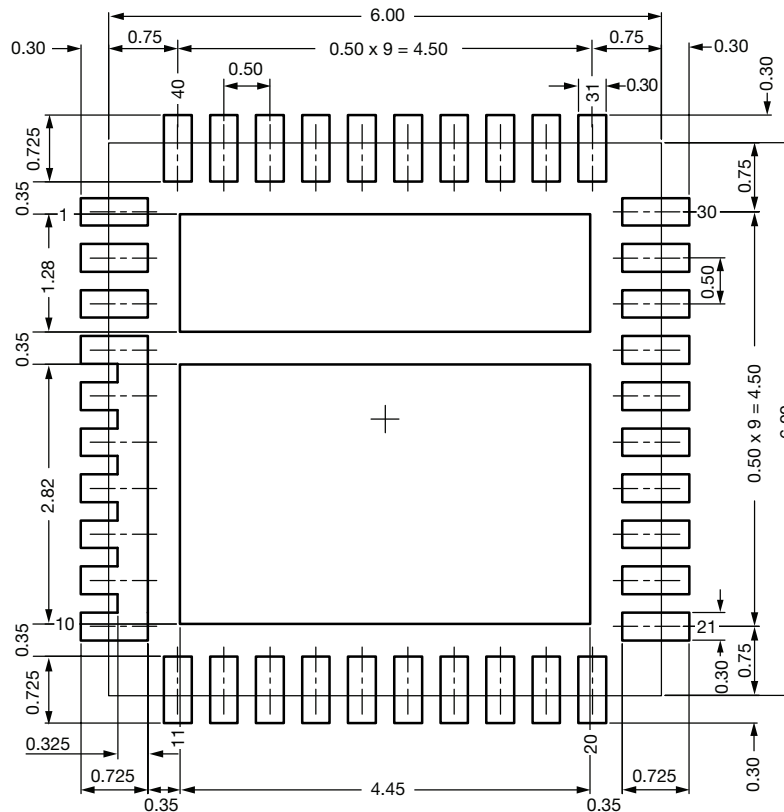
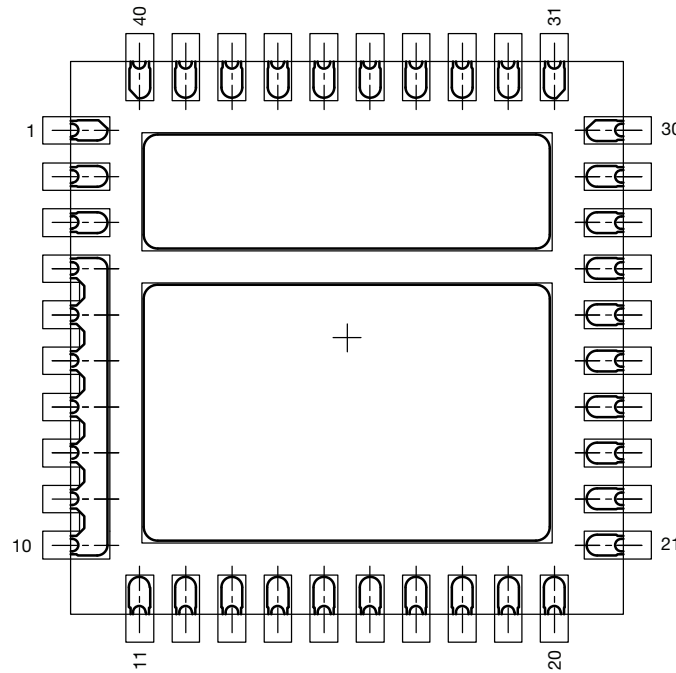
PRODUCT SUMMARY	
Part number	SiC32201
Description	0.45 mΩ, integrated OR-ing switch with OR-ing controller, lossless current sense, and temperature report
Configuration	Parallelable
Slew rate time (μs)	-
On delay time (μs)	-
Input voltage min. (V)	9
Input voltage max. (V)	18
On-resistance at input voltage min. (mΩ)	-
On-resistance at input voltage max. (mΩ)	0.45
Quiescent current at input voltage min. (μA)	-
Quiescent current at input voltage max. (μA)	1800
Output discharge (yes / no)	No
Reverse blocking (yes / no)	Yes
Continuous current (A)	100
Package type	PowerPAK® MLP66-40L
Package size (W, L, H) (mm)	6.0 x 6.0 x 0.75
Status code	1
Product type	OR-ing switch
Applications	Redundant power supply, server, data center, cloud computing

To request the full version of the datasheet, please contact: ICmarketing@vishay.com

Vishay Siliconix maintains worldwide manufacturing capability. Products may be manufactured at one of several qualified locations. Reliability data for Silicon Technology and Package Reliability represent a composite of all qualified locations. For related documents such as package / tape drawings, part marking, and reliability data, see www.vishay.com/ppg?77592.



Recommended Land Pattern PowerPAK® MLP40-66



ECN: S22-0378-Rev. A, 02-May-2022
DWG: 3007



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.