



IC Upgrade for SIP32101/SIP32102/SIP32103

DESCRIPTION OF CHANGE: To meet higher quality standard, and improve performance and reliability, Vishay Siliconix is moving the SiP3210x family to a new automotive grade FAB TPSCo

TPSCo is a company, 51% owned by Tower Semiconductor Ltd. and 49% owned by Panasonic Semiconductor Solutions. TPSCo has three manufacturing facilities in Hokuriku, Japan which have been producing large scale integrated circuits for over 35 years. More than 500 million ICs for automotive products (Grade 0, 1 & 2) have been produced by TPSCo fabs since inception.

With the change to the new Foundry, the die was re-designed to further improve the robustness. As this part is primarily used as a bidirectional on or off switch, it is critical that turn off times are as short as possible and there is sufficient enable hysteresis to prevent spurious turn on of the switch during transient conditions.

The existing design has a turn off time [td(off) + tfall] of 3.4ms. This has been reduced to 0.22ms in the new design. The new design also has an EN hysteresis of 200mV versus 50mV for the old design.

These improvements have been made with a minor increase in quiescent current for the device.

The key parametric changes comparing the new and old design are shown in the table below:

| Parameters | Test Conditions | Current | | New | | units |
|------------|-------------------------------------|---------|-----|------|-----|-------|
| | | Typ | Max | Typ | Max | |
| IQ_OFF | VPA = VPB = 2.3V to 5.5V | 0.01 | 300 | 110 | 400 | nA |
| IQ_ON | VPA = VPB = 2.3V to 5.5V | 0.015 | 300 | 110 | 400 | nA |
| IQ_ON | VPA = VPB = 2.3V to 5.5V (SiP32103) | 8.2 | 15 | 8.2 | 15 | µA |
| td(on) | Vin = 4.2V, RL = 10Ω, CL = 0.1uF | 0.5 | | 0.8 | | ms |
| trise | Vin = 4.2V, RL = 10Ω, CL = 0.1uF | 1 | | 1 | | ms |
| td(off) | Vin = 4.2V, RL = 10Ω, CL = 0.1uF | 2.4 | | 0.12 | | ms |
| tfall | Vin = 4.2V, RL = 10Ω, CL = 0.1uF | 1 | | 0.1 | | ms |

All other datasheet parameters remain unchanged resulting in a part that is form, fit and functionally compatible to the old design with improved robustness as described.

CLASSIFICATION OF CHANGE: Wafer Fab change

REASON FOR CHANGE: Upgrade to automotive qualified wafer fabrication facility

EXPECTED INFLUENCE ON PERFORMANCE/QUALITY/RELIABILITY: Better performance, quality and reliability.

PRODUCT CATEGORY: ICs

PART NUMBERS AFFECTED: SIP32101DB-T1-GE1, SIP32102DB-T1-GE1, SIP32102DB-T5-GE1, SIP32103DB-T1-GE1

And Evaluation boards: SIP32101EVB, SIP32102EVB, SIP32103EVB

VISHAY BRAND(s): Vishay-Siliconix



Product Change Notification



Product Group: Vishay Siliconix/ December 7, 2016/PCN-SIL-0382016

TIME SCHEDULE: Shipment of products will begin from March 7, 2017

SAMPLE AVAILABILITY: Please contact your regional Vishay Sales office for sample availability.

QUALIFICATION DATA: Additional data available upon request.

IDENTIFICATION: The marking on the parts will be differentiated as below

| Part Numbers | Current Marking | New Marking TPSCO |
|-------------------|-----------------|-------------------|
| SIP32101DB-T1-GE1 | 32101 | 32101A |
| SIP32102DB-T1-GE1 | 32102 | 32102A |
| SIP32102DB-T5-GE1 | 32102 | 32102A |
| SIP32103DB-T1-GE1 | 32103 | 32103A |

This PCN is for notification purposes only. Your response is not required. If you have any questions, please contact your local Vishay Sales Office.

ISSUED BY: Isabelle Ciacchella, Vishay Siliconix IC Product Marketing.
E-mail address: isabelle.ciacchella@Vishay.com

For further information, please contact your regional Vishay office.

The Americas

Vishay Americas
2201 Laurelwood Road
Santa Clara, Ca 95004
T: 408-970-8000
F: 408-567-8942
business-americas@vishay.com

Europe

Vishay Electronic GmbH
Geheimrat-Rosenthal-Strasse 100
D-95100
Selb, Germany
T: 49-9287-71 0
F: 49-9287-70435
Europe@vishay.com

Asia

Vishay Intertechnology Asia Pte. Ltd
25 Tampines Street 92
#02-00 Keppel Building
Singapore 528877
T: 65-6788-6668
F: 65-6788-0988
business-asia@vishay.com

Vishay Intertechnology, Inc.

Corporate Headquarters 63 Lincoln Highway, Malvern, PA 19355-2143 U.S.A. Phone (610) 644-1300 Fax (610) 296-0657 www.vishay.com

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Procedure #