5245 Hellyer Avenue
San Jose, CA 95138
U.S.A.
(408) 414-9200

Control No. PCN-23352 **October 20, 2023**

PRODUCT/PROCESS CHANGE NOTIFICATION

TYPE OF CHANGE: ☒ **Design** ☐ **Manufacturing** ☐ **Other**

This notification is provided in accordance with Power Integrations policy of major change notification. If you have any questions or need further assistance, please contact your regional Power Integrations sales office.

DESCRIPTION OF CHANGE

A minor change to the secondary controller of InnoSwitch3-EP products listed below where the output pull-down resistance in the data sheet will be changed from 12.1 ohms to 3.95 ohms.

REASON FOR CHANGE

Prevent auto-restart during an ESD event.

PRODUCTS AFFECTED

INN3670C-H604-TL, INN3670C-H605-TL, INN3670C-H606-TL, INN3670C-H615-TL, INN3672C-H601-TL, INN3672C-H602-TL, INN3672C-H606-TL, INN3673C-H601-TL, INN3673C-H602-TL, INN3674C-H084-TL, INN3674C-H601-TL, INN3674C-H602-TL, INN3674C-H606-TL, INN3674C0253-H606-TL, INN3674C0271-H601-TL, INN3675C-H601-TL, INN3675C-H602-TL, INN3675C-H603-TL, INN3675C-H604-TL, INN3675C-H605-TL, INN3675C-H606-TL, INN3675C0253-H606-TL, INN3675C0271-H606-TL, INN3676C-H084-TL, INN3676C-H601-TL, INN3676C-H602-TL, INN3676C-H603-TL, INN3676C-H604-TL, INN3676C-H605-TL, INN3676C-H606-TL, INN3676C0253-H606-TL, INN3677C-H601-TL, INN3677C-H602-TL, INN3677C-H603-TL, INN3677C-H604-TL, INN3677C-H605-TL, INN3677C-H606-TL, INN3678C-H605-TL, INN3678C-H606-TL, INN3678C0209-H606-TL,INN3678C0253-H606-TL, INN3679C-H605-TL, INN3679C-H606-TL, INN3692C-H606-TL, INN3694C-H084-TL, INN3694C-H606-TL, INN3696C-H084-TL, INN3696C-H606-TL

QUALIFICATION STATUS

Please refer to Appendix 1 for the qualification data.

EFFECT ON CUSTOMER

There will be no adverse impact in manufacturers' applications for customers.

EFFECTIVE DATE

January 22, 2024.

SAMPLE AVAILABILITY

Samples are available 8 weeks from the date of request. Please send the request for samples within two weeks after receipt of this notification to the local Power Integrations sales office.

Reliability Engineering Qualification Report

Qualification Project: E224408

Project Title: InnoSwitch3-EP Seconday Controller IC Minor Change Qualification
Qual Summary: Reliability testing was performed on InnoSwitch3-EP products to qualify a minor change to the secondary controller implemented to prevent auto-restart during an ESD event. DOPL, PTC, HBM ESD, CDM ED and Latch-up tests were performed on representative products with passing results. Product electrical characterization was completed with acceptable results. Based on these results, the secondary controller change for InnoSwitch3-EP products is qualified.
Qualification Vehicles: INN3677CQ, INN3696CQ

Reliability Test Descriptions and Conditions

Test Name	Conditions	Reference Specification
DOPL (Dynamic Operating Life Test)	Tj=125°C, Vd(peak)=580V	EIA/JESD22-A108
PTC (Power Temperature Cycling)	-40°C to +125°C, air to air, biased	EIA/JESD22-A105
HBM ESD (Human Body Model ESD)	±500, ±1000, ±1500, ±2000V	ANSI/ESDA/JEDEC JS-001-2017
CDM ESD (Charged Device Model ESD)	±500, ±750, ±1000V	ANSI/ESDA/JEDEC JS-002-2018
LU (Latch-up)	±100mA current injection; 1.5X Vsupply Over-voltage	JESD78
MSL3 Preconditioning	24-hr 150°C Bake + 40-hr 60°C, 60% RH Soak + 3 Passes 260°C Solder Reflow	IPC/JEDEC J-STD-020

DOPL (Dynamic Operating Life)

Product	Lot #	Package	Test Duration	No. Failures/Sample Size
INN3677C	MAL029B	InSOP-24D	MSL3 + 1000 hours	0 / 45

PTC (Power Temperature Cycling)

Product	Lot #	Package	Test Duration	Failures/Sample Size
INN3677C	MAL029B	InSOP-24D	MSL3 + 1000 Cycles	0 / 45
INN3696C	M9A509E	InSOP-24D	MSL3 + 1000 Cycles	0 / 45

HBM ESD (Human Body Model ESD)

Product	Lot #	Package	Stress Voltages	Failures/Sample Size/Stress Voltage
INN3677C	MAL029B	InSOP-24D	±500, ±1000, ±1500, ±2000V	0 / 3
INN3696C	M9A509E	InSOP-24D	±500, ±1000, ±1500, ±2000V	0 / 3

CDM ESD (Charged Device Model ESD)

Product	Lot #	Package	Stress Voltages	Failures/Sample Size/Stress Voltage
INN3677C	MAL029B	InSOP-24D	±500, ±750, ±1000V	0 / 3
INN3696C	M9A509E	InSOP-24D	±500, ±750, ±1000V	0 / 3

LU (Latch-up)

Product	Lot #	Package	Stress Voltages	Failures/Sample Size
INN3677C	MAL029B	InSOP-24D	±100mA current injection; 1.5X Vsupply Over-voltage	0 / 6
INN3696C	M9A509E	InSOP-24D	±100mA current injection; 1.5X Vsupply Over-voltage	0 / 6

Conclusion: Based on these results, the updated secondary controller is now qualified for InnoSwitch3-EP products.

CUSTOMER ACKNOWLEDGEMENT

Power Integrations requests you acknowledge the receipt of the above-mentioned PCN. If no acknowledgment is received within 30 days of this notification, Power Integrations will assume the change is acceptable. Lack of any additional response within 90 days of this notification further constitutes acceptance of the change.

Power Integrations reserves the right to ship either version manufactured after the effective date.

If you have any questions or need further assistance, please contact your regional Power Integrations sales office. Otherwise, please check the box below, acknowledging the receipt of the PCN.

The indicated Product/Process Change Notification was received by the undersigned authority.

Name/Title:_____

Signature:_____ Date:_____

Email Address/Phone#:_____

Company/Location:_____

CUSTOMER COMMENTS

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Please email this signed form to pcn@power.com specifying the PCN# in the subject.