



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

Control No. PCN-21322

September 3, 2021

PRODUCT/PROCESS CHANGE NOTIFICATION

TYPE OF CHANGE: Design Manufacturing Other

This notification is provided in accordance with Power Integrations policy of product/process 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 in the InnoSwitch3-AQ product family listed "Product Affected". Wafer Fab, Assembly and Test processes, Bill of Materials (except for the die with the design modification) and Test programs remain unchanged.

REASON FOR CHANGE

Enhanced noise immunity.

PRODUCTS AFFECTED

INN3977CQ-TL, INN3996CQ-TL

QUALIFICATION STATUS

See Appendix 1 for the qualification report.

EFFECT ON CUSTOMER

No adverse impact is expected in customers' applications. The product will be guaranteed to meet the datasheet limits.

EFFECTIVE DATE

December 3, 2021. This date is subject to change. Products fabricated before the change will continue to be shipped until depleted.

SAMPLE AVAILABILITY

Available upon request. Please send requests for samples within two weeks after receipt of this notification to the local Power Integrations sales office. For manufacturers that request samples, an accommodation will be made in order to allow time of customer's qualification in a case-specific manner.

CONFIDENTIAL



Reliability Engineering
Qualification Report

Qualification Project: E212301/02

Project Title: InnoSwitch3-AQ Secondary IC Minor Change Qualification
Qual Summary: Reliability testing was performed per the AEC-Q100 to qualify a metal mask change for improved noise immunity in the secondary IC of InnoSwitch3-AQ products. Per AEC-Q100 requirements for circuit re-routing changes not involving peripheral circuitry, PTC, HBM ESD, CDM ESD, LU, ED and CHAR were performed as tests applicable to the change. One qualification lot each of INN3977CQ-TL and INN3996CQ-TL were subjected to these tests with passing results obtained. ED and CHAR data was collected and is not presented here, but is available upon request. Based on these results, the secondary IC changes for InnoSwitch3-AQ products is qualified.
Qualification Vehicle: INN3977CQ-TL, INN3996CQ-TL

Reliability Test Descriptions and Conditions

Test Name	Conditions	Reference Specification
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	AEC-Q100-002
CDM ESD (Charged Device Model ESD)	±500, ±750, ±1000V	AEC-Q100-011
LU (Latch-up)	±100mA current injection; 1.5X Vsupply Over-voltage	AEC-Q100-004
ED (Electrical Distributions)	Per AEC-Q100-009 Standard	AEC-Q100-009
CHAR (Characterization)	Per AEC-Q100-003 Standard	AEC-Q100-003
MSL3 Preconditioning	24-hr 150°C Bake +40-hr 60°C, 60% RH Moisture Soak + 3 Passes 260°C Solder Reflow	IPC/JEDEC J-STD-020

PTC (Power Temperature Cycling)

Product	Lot #	Package	Test Duration	Failures/Sample Size	ATE Test Temperatures
INN3977CQ-TL	MAL029B	InSOP-24D	MSL3 + 1000 Cycles	0 / 45	Room / Hot
INN3996CQ-TL	M9A509E	InSOP-24D	MSL3 + 1000 Cycles	0 / 45	Room / Hot

HBM ESD (Human Body Model ESD)

Product	Lot #	Package	Stress Voltages	Failures/Sample Size/Stress Voltage	ATE Test Temperatures
INN3977CQ-TL	MAL029B	InSOP-24D	±500, ±1000, ±1500, ±2000V	0 / 3	Room / Hot
INN3996CQ-TL	M9A509E	InSOP-24D	±500, ±1000, ±1500, ±2000V	0 / 3	Room / Hot

CONFIDENTIAL

CDM ESD (Charged Device Model ESD)

Product	Lot #	Package	Stress Voltages	Failures/Sample Size/Stress Voltage	ATE Test Temperatures
INN3977CQ-TL	MAL029B	InSOP-24D	±500, ±750, ±1000V	0 / 3	Room / Hot
INN3996CQ-TL	M9A509E	InSOP-24D	±500, ±750, ±1000V	0 / 3	Room / Hot

LU (Latch-up)

Product	Lot #	Package	Stress Voltages	Failures/Sample Size/Stress Voltage	ATE Test Temperatures
INN3977CQ-TL	MAL029B	InSOP-24D	±100mA current injection; 1.5X Vsupply Over-voltage	0 / 6	Room / Hot
INN3996CQ-TL	M9A509E	InSOP-24D	±100mA current injection; 1.5X Vsupply Over-voltage	0 / 6	Room / Hot

Conclusion:

Based on passing qualification results, the secondary IC changes for InnoSwitch3-AQ products is qualified.

CONFIDENTIAL

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

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

CONFIDENTIAL