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PRODUCT CHANGE NOTIFICATION

Number: PCN-07041

Date: 06-Feb-2007

In accordance with Power Integrations standard procedure for notification of product and manufacturing changes, we take this opportunity to provide you the notification as described below.

DESCRIPTION OF THE CHANGE: The Controller circuitry of the TinySwitch-III product family has been modified to make several improvements in the device functionality. Key modifications and the effects on the existing applications are described below. There will be no change in the product parameter limits specified in the current datasheet.

- 1. BP/M pin shutdown function enhancement:** Internal sense circuitry was modified to eliminate the need for a 30Ω resistor in series with the BP/M pin capacitor in applications that use a 10 μF BP/M pin capacitor. The 30Ω resistor had been required in certain applications where very low input voltage tests (typically $V_{DC} < 30V$) are conducted.

Effect on existing applications that use products previously shipped: None. The new device will still work correctly in circuit boards already using an external 30Ω resistor in series with the BP/M pin capacitor. No external circuit change is therefore required.

- 2. Noise immunity improvement of OVP latch:** The controller circuitry was modified to provide better noise tolerance to prevent inadvertent latching shutdown in designs that have poor grounding of the Bypass pin capacitor.

Effect on existing applications that use products previously shipped: None.

- 3. Prevention of output glitch:** Power cycle testing in some applications may result in a non-monotonic change in the output of the supply. The controller design was enhanced to prevent such a glitch.

Effect on existing applications that use products previously shipped: None.

EFFECT ON PRODUCTS PREVIOUSLY SHIPPED: None

EFFECT ON PRODUCT QUALITY: None. There will be no change in the product parameter limits specified in the current datasheet. Reliability testing has been done to qualify the affected material. A qualification report is enclosed. See page 2.

THE FOLLOWING PART TYPES have been modified: TNY274-TNY280

PACKAGE TYPE (S) AFFECTED: DIP-8C and SMD-8C

REASON FOR CHANGE: Ease of system implementation.

QUALIFICATION REPORT: Please see page 2 of this document.

EFFECTIVE DATE: 06 May 2007.

Please forward an acknowledgment of this notice and any other questions to your area sales manager



*Reliability
Engineering
**Qualification
Report***

*Qual Report #: **E065111***

Date Created: 1/18/2007

Author: Nick Stanco

Product Engineer: Henry Fong

Project Title: Qualification TinySwitch-III design modification

Summary: Reliability testing was conducted on one lot of TNY278PN for qualification of the design modification. DOPL, MM ESD, HBM ESD and Latch-up tests were all completed with passing results. Parameter analysis and temperature characterization were performed with acceptable results. Based on these results, the revised silicon die is now qualified for all TinySwitch-III products (TNY274 through TNY280) in all previously qualified packages.

Qualification Vehicles: TNY278PN

Reason for Qualification: Modifications done in the controller circuit

Material Affected: All TinySwitch-III products.

Reliability Test Descriptions and Conditions

Test Name	Conditions	Reference Specification
DOPL (Dynamic Operating Life Test)	T _j =150°C, V _{d(peak)} =560V	EIA/JESD22-A108-C
HBM ESD (Human Body Model)	±1000V to ±2500V	JESD22-A114-D
MM ESD (Machine Model)	±100V to ±250V	JESD22-A115-A
Latch-up	+125°C, ±100mA minimum	JESD78A

Reliability Test Results

Test Name	TNY278PN Lot 44358A (Rejects /Sample Size)	Conditions
DOPL (Dynamic Operating Life)	0/47	168 Hours, 125°C
HBM ESD	0/3 Per Voltage	Passed Up to ±2500V
MM ESD	0/3 Per Voltage	Passed Up to ±250V
Latch-up	0/6	Passed ±200 mA at 150°C

Conclusion: Based on acceptable reliability and product characterization results, the revised silicon die is now qualified for all TinySwitch-III products.

Approvals

Approved By	Signature	Date
Reliability Engineer:	On File	On File
Product Engineering Manager:	On File	On File
Assembly Engineering Manager:	On File	On File
Director of Technology Development:	On File	On File
Reliability Engineering Manager:	On File	On File
Director of Quality:	On File	On File