

Notification Number:	20210217001A	Notification Date:	Feb. 26, 2021
Title:	Datasheet for TPS653850-Q1		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Aug. 24, 2021		
Change Type:	Electrical Specification		

Notification Details

Description of Change:

Texas Instruments Incorporated is announcing notification. The product datasheet(s) is being updated as summarized below. The following change history provides further details.



TPS653850-Q1
SLVSCZ4D – NOVEMBER 2016 – REVISED JANUARY 2021

Changes from Revision C (June 2018) to Revision D (January 2021)

Page

- Added the Functional Safety-Compliant status to the *Features* section. 1
- Updated the numbering format for tables, figures, and cross-references throughout the document..... 1
- Added a note in the *Electrical Characteristics — Supply Voltage and Current Consumption* section to clarify dependency of COLD_CRANK State exit on T_J, VDD6, VBAT_SAFING voltages and the slew rate of VBAT_SAFING recovery back to normal VBAT voltage levels..... 13
- Changed the VDD6 output current in normal operation in boost mode (POS 1.3b, 1.3c) in the *Electrical Characteristics — VDD6 Buck-Boost With Internal FETs* 14
- Added the POS 1.13b and added POS 1.13c VDD6 output voltage in low-power mode in the *Electrical Characteristics — VDD6 Buck-Boost With Internal FETs* table..... 14
- Changed the difference between VBATL_UV_{on} and VBATL_UV_{off} thresholds parameter, POS 7.3, in the *Electrical Characteristics — Voltage Monitor* table..... 19

- Removed POS 7.52a, 7.52b, 7.54 and 7.55 from the *Electrical Characteristics — Voltage Monitor* table (apply only to TPS653853-Q1 device). 19
- Made the following changes in the *Electrical Characteristics - Ignition and CAN Wakeup* section for clarity of device operation. Added a note about LBIST run impact on IGN deglitch. Added POS 8.1a, IGN_WUP falling threshold and clarified POS 8.1 IGN_WUP threshold is rising. Added POS 8.2a, CAN_WUP falling threshold and clarified POS 8.1 IGN_WUP threshold is rising. Changed POS 8.3, WUP_hyst, to tighten hysteresis. ... 21
- Changed the maximum external load current, I_{CP} , in the *Electrical Characteristics - Charge Pump Section* section. 21
- Updated SPI Timing Parameter Figure to clarify SDO behaviour at the beginning of the SPI frame. 25
- Changed the charge pump sub-block in the *TPS653850-Q1 Functional Block Diagram* section for clarity of device operation. 28
- Changed the description in the *Charge Pump* section to clarify device operation. 32
- Added a note about LBIST run impact on IGN deglitch in the *Wakeup* section to clarify device operation. Added clarification on IGN wake up from OFF state versus STAND-BY state behaviour and IGN_PWRL use in the *Wakeup* section to clarify device operation. 33
- Changed the monitoring detection thresholds for VDD5_OV, VDD3/5_UV and VDD3/5_OV minimums in the *Voltage Monitoring Overview: Supply Input and Outputs* table to match section 4.11 *Electrical Characteristics — Voltage Monitor*. 38
- Added a note not to run ABIST and LBIST at the same time in the *Built-In Self Tests* section. 40
- Changed the and clarified the timing formulas and timing diagrams in the *TMS570 Mode* and *PWM Mode* sections. 66
- Changed the *Device-Controller State Diagram* section for clarity. Changed the VDD6 output voltage and the COLD_CRANK state exit condition description in dependency on VDD6_LPM bit setting during COLD_CRANK state and exit condition. Clarified the wake up conditions from OFF state. 79
- Changed the VDD6 output voltage description in the *COLD_CRANK State* section to clarify dependency on VDD6_LPM bit setting. 81
- Added a note in the *COLD_CRANK State* section to clarify dependency of COLD_CRANK State exit on T_J , VDD6, VBAT_SAFING voltages and the slew rate of VBAT_SAFING recovery back to normal VBAT voltage levels. 81
- Added a note in the *COLD_CRANK State* section to clarify dependency of COLD_CRANK State exit on T_J , VDD6, VBAT_SAFING voltages and the slew rate of VBAT_SAFING recovery back to normal VBAT voltage levels. 81
- Clarified the commands in the *SPI Command Space* table. 92
- Changed the re-initialized value in the register description row to be consistent with the description in the bit fields for the *DEV_ID Register*. 98
- Changed the VDD6_LPM bit description in the *DEV_CFG_1 Register* to remove in-consistency of output voltages during various low-power states. 98
- Added a note not to run ABIST and LBIST at the same time in the *SAFETY_BIST_CTRL Register* section. 98
- Clarified the use of CAN_PWD command in the CANWU_L bit field of the *DEV_STAT Register*. 98
- Changed the guidelines the *Layout* section for clarity. 147
- Updated the thermal pad electrical connection note in the *Layout* section to add clarity. 151

The datasheet number will be changing.

Device Family	Change From:	Change To:
TPS653850-Q1	SLVSCZ4C	SLVSCZ4D

These changes may be reviewed at the datasheet links provided.

The document is not available on the TI website. Authorized customers have access to the revised version of the datasheet at mySecure or customers can re-request the datasheet via the product folder on ti.com.

Reason for Change:

To accurately reflect device characteristics.

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):			
No anticipated impact. This is a specification change announcement only. There are no changes to the actual device.			
Changes to product identification resulting from this notification:			
None.			
Product Affected:			
O3850QDCARQ1			

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