

Notification Number:	20210217001	Notification Date:	Feb. 24, 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.

<http://www.ti.com/product/TPS653850-Q1>

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

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

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