To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

Send any inquiries to http://www.renesas.com/inquiry.

Date: Dec.26.2008

RENESAS TECHNICAL UPDATE

Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Renesas Technology Corp.

Product Category	MPU&MCU		Document No.	TN-SH7-A669B/E	Rev.	2.00
Title	Turning on and off power supply of SH7785		Information Category	Technical Notification		
Applicable Product	SH7785	Lot No. All lots	Reference Document	SH7785 Hardware Manual Rev.1.0 (REJ09B0261-0100)		

"D3. Turning On and Off Between the Same Power Supply Series" within the Renesas technical update (TN-SH7-A669A/E) of "Turning On and Off Power Supply" will be revised as follows. The additional restriction regarding both VDDQ-PLL1 and VDDQ-PLL2 which are VDD33 are pointed out by the bold characters.

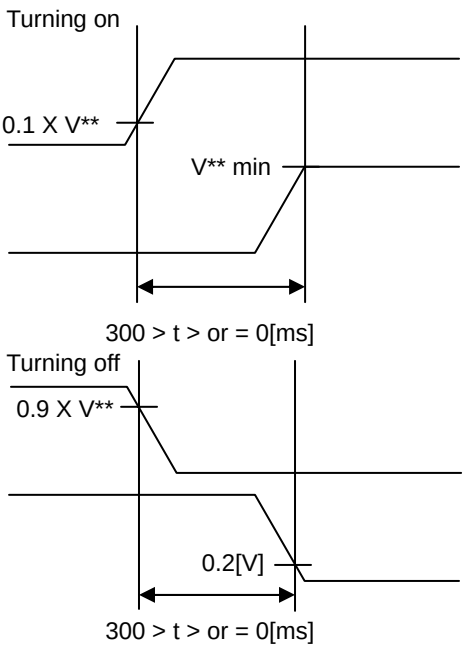
D. Turning On and Off Power Supply

D.1 Turning On and Off Between Each Power Supply Series

The order of the power supply between the 1.0V series power supply (VDD10: VDD and VDD-PLL1 to 2 and VDDA-PLL1), the 1.8V series power supply (VDD18: VDD-DDR) and the 3.3V series power supply (VDD33: VDDQ and VDDQ-PLL1 to 2 and VDDQ-TD*) is as follows.

Note: * ~~If VDDQ-TD is connected to VDDQ.~~ In case that VDDQ-TD is connected to GND(0V), there is no restriction for the power supply sequence of VDDQ-TD. But if it is connected to the power, please set the power supply of it within VDDQ+0.3[V].

- Turning On Power Supply
  There is no restriction for the order of the power supply between each power supply series (VDD10, VDD18, VDD33). Within 300 ms after turning on one power supply series, turn on all the other power supply series.
- Turning Off Power Supply
  There is no restriction for the order of the power supply between each power supply series.
  (VDD10, VDD18, VDD33). Within 300 ms after turning off the one power supply series, turn off all the other power supply series.



VDD10: VDD, VDD-PLL1 to 2, VDDA-PLL1
VDD18: VDD-DDR (except DDR2-SDRAM backup to turning on)
VDD33: VDDQ, VDDQ-PLL1 to 2, VDDQ-TD*

Note: * ~~If VDDQ-TD is connected to VDDQ.~~ In case that VDDQ-TD is connected to GND(0V), there is no restriction for the power supply sequence of VDDQ-TD. But if it is connected to the power, please set the power supply of it within VDDQ+0.3[V].

V**:
VDD10, VDD18 (~~transition from DDR power supply backup~~ except DDR2-SDRAM power supply backup mode), VDD33

V**:
VDD10, VDD18 (~~transition from DDR power supply backup~~ except DDR2-SDRAM power supply backup mode), VDD33

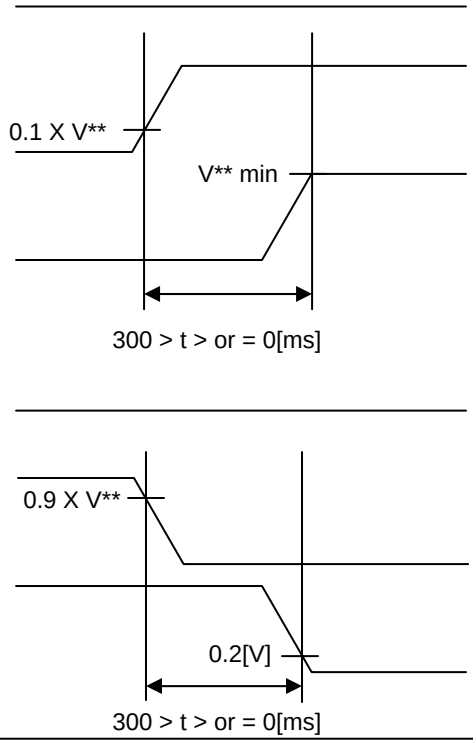
Figure D.1 Sequence of Turning On and Off Each Power Supply

D.2 Power-On and Power –Off Sequences for Power Supplies with Different Potentials in DDR2-SDRAM Power Supply Backup Mode

The power-on and power-off sequences for the 1.0 V power supply (VDD10 using pins VDD, VDD-PLL1, VDDA-PLL1, and VDD-PLL2), 1.8 V power supply (VDD18 using pin VDD-DDR), and 3.3 V power supply (VDD33 using pins VDDQ, VDDQ-PLL1, VDDQ-PLL2, and VDDQ-TD*) in DDR2-SDRAM power supply backup mode are as follows.

Note: * ~~If VDDQ-TD is connected to VDDQ.~~ In case that VDDQ-TD is connected to GND(0V), there is no restriction for the power supply sequence of VDDQ-TD. But if it is connected to the power, please set the power supply of it within VDDQ+0.3[V].

- Power-On Sequence
  There is no restriction on the sequence in which the above power supplies are powered on. Ensure that all the power supplies start within 300 ms of the start of a power supply other than VDD-DDR.
- Power-Off Sequence
  There is no restriction on the sequence in which the above power supplies are powered off. Ensure that all the power supplies stop within 300 ms of the stop of a power supply other than VDD-DDR.



VDD18 = ON

VDD10: VDD, VDD-PLL1 to 2, VDDA-PLL1
VDD33: VDDQ, VDDQ-PLL1 to 2, VDDQ-TD*

Note: * ~~If VDDQ-TD is connected to VDDQ.~~ In case that VDDQ-TD is connected to GND(0V), there is no restriction for the power supply sequence of VDDQ-TD. But if it is connected to the power, please set the power supply of it within VDDQ+0.3[V].

V**: VDD10, ~~VDD18,~~ VDD33

VDD18 = ON

V**:
VDD10, VDD33

Figure D.2 Power-On and Power-Off Sequences for Power Supplies with Different Potentials in DDR2-SDRAM Power Supply Backup Mode

D.3 Turning On and Off Between the Same Power Supply Series

The order of the power supply in the VDD10 series, the VDD18 series and the VDD33 series power supply is as follows.

~~Figure D.3 is an explanation chart of VDD10. The regulation of the potential difference is the same VDD10 as the other(VDD10,VDD33).~~ The order of the power supply in the VDD10 series and the VDD18 series power supply has no restriction.

- Turning On Power Supply
  There is no restriction for the order of the power supply between ~~each~~ same power supply series except ~~that the potential difference of the one power supply series is less than 0.3V~~ VDD33. In case that VDDQ-TD is connected to GND(0V), there is no restriction for the power supply sequence of VDDQ-TD. But if it is connected to the power, please set the power supply of it within VDDQ+0.3[V]. **And please set the power supply of VDDQ-PLL1 and VDDQ-PLL2 within VDDQ+0.3[V].**

- Turning Off Power Supply
  There is no restriction for the order of the power supply between ~~each~~ same power supply series except ~~that the potential difference of the one power supply series is less than 0.3V~~ VDD33. In case that VDDQ-TD is connected to GND(0V), there is no restriction for the power supply sequence of VDDQ-TD. But if it is connected to the power, please set the power supply of it within VDDQ+0.3[V]. **And please set the power supply of VDDQ-PLL1 and VDDQ-PLL2 within VDDQ+0.3[V]**

"Figure D.3 Sequence of Turning On and Off VDD10 Power Supply Series" is removed.