



---

**TV<sub>DD</sub> ratings for SPC560P34Lx, SPC560P40Lx microcontrollers  
datasheet addendum**

---

## Introduction

The aim of this document is to give recommendations for hardware designers using STMicroelectronics<sup>®</sup> SPC560P34Lx, SPC560P40Lx microcontrollers. It gives values of TV<sub>DD</sub> parameter respect to its description inside the 32-bit Power Architecture<sup>®</sup> based MCU with 320 KB Flash memory and 20 KB RAM for automotive chassis and safety applications (see [Section Appendix A: Reference document](#)) to the following silicon versions.

**Table 1. Devices affected by TV<sub>DD</sub> changes**

Part number	Package device marking mask identifier	MIDR1 register
SPC560P40Lx/P34Lx	AB - cut 1.1 (and older)	MAJOR_MASK[3:0]: 4'b0000 MINOR_MASK[3:0]: 4'b0001

# Contents

- 1 TV<sub>DD</sub> ratings ..... 4**
  - 1.1 TV<sub>DD</sub> ratings described on SPC560P34x, SPC560P40x datasheet (DocID 16100, Rev 6) ..... 4
  - 1.2 TV<sub>DD</sub> ratings for SPC560P34Lx, SPC560P40Lx ..... 4
- Appendix A Reference document ..... 5**
- Revision history ..... 6**

## List of tables

Table 1.	Devices affected by TV <sub>DD</sub> changes .....	1
Table 2.	Absolute maximum ratings .....	4
Table 3.	Update of absolute maximum ratings .....	4
Table 4.	Revision history .....	6

# 1 TV<sub>DD</sub> ratings

This section gives the values of TV<sub>DD</sub> parameter for SPC560P34Lx, SPC560P40Lx microcontrollers (see [Table 1: Devices affected by TV<sub>DD</sub> changes](#)) compared with values described in table Absolute maximum ratings of device datasheet (see [Table 2](#) and for further information see [Section Appendix A](#)).

The TV<sub>DD\_min</sub> has been limited to 500 [V/s] and a note to ensure a monotonic supply ramp has been added (see [Table 3: Update of absolute maximum ratings](#) and for further information see [Section Appendix A AN4057](#)).

## 1.1 TV<sub>DD</sub> ratings described on SPC560P34x, SPC560P40x datasheet (DocID 16100, Rev 6)

**Table 2. Absolute maximum ratings<sup>(1)</sup>**

Symbol	Parameter	Conditions	Min	Max <sup>(2)</sup>	Unit
TV <sub>DD</sub>	Slope characteristics on all V <sub>DD</sub> during power up <sup>(3)</sup> with respect to ground (V <sub>SS_HV</sub> )	—	3.0 <sup>(4)</sup>	500*10 <sup>3</sup> (0.5 [V/μs])	V/s

1. Functional operating conditions are given in the DC electrical characteristics. Absolute maximum ratings are stress ratings only, and functional operation at the maxima is not guaranteed. Stress beyond the listed maxima may affect device reliability or cause permanent damage to the device.
2. Absolute maximum voltages are currently maximum burn-in voltages. Absolute maximum specifications for device stress have not yet been determined.
3. Guaranteed by device validation.
4. Minimum value of TV<sub>DD</sub> must be guaranteed until V<sub>DD\_HV\_REG</sub> reaches 2.6 V (maximum value of V<sub>PORH</sub>).

## 1.2 TV<sub>DD</sub> ratings for SPC560P34Lx, SPC560P40Lx

**Table 3. Update of absolute maximum ratings<sup>(1)</sup>**

Symbol	Parameter	Conditions	Min	Max <sup>(2)</sup>	Unit
TV <sub>DD</sub> <sup>(3)</sup>	Slope characteristics on all V <sub>DD</sub> during power up <sup>(4)</sup> with respect to ground (V <sub>SS_HV</sub> )	—	500 <sup>(5)</sup>	500*10 <sup>3</sup> (0.5 [V/μs])	V/s

1. Functional operating conditions are given in the DC electrical characteristics. Absolute maximum ratings are stress ratings only, and functional operation at the maxima is not guaranteed. Stress beyond the listed maxima may affect device reliability or cause permanent damage to the device.
2. Absolute maximum voltages are currently maximum burn-in voltages. Absolute maximum specifications for device stress have not yet been determined.
3. Ensure a monotonic supply ramp starting at ground level.
4. Guaranteed by device validation.
5. Minimum value of TV<sub>DD</sub> must be guaranteed until V<sub>DD\_HV\_REG</sub> reaches 2.6 V (maximum value of V<sub>PORH</sub>).

## Appendix A Reference document

- 32-bit Power Architecture® based MCU with 320 KB Flash memory and 20 KB RAM for automotive chassis and safety applications (SPC560P34L1, SPC560P34L3, SPC560P40L1, SPC560P40L3, DocID 16100, Rev 6)
- SPC560Pxx, SPC56APxx power up HW guideline (AN4057, DocID 022842, Rev 1)

## Revision history

**Table 4. Revision history**

Date	Revision	Changes
19-Dec-2012	1	Initial release.
17-Sep-2013	2	Updated Disclaimer.

**Please Read Carefully:**

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

**UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.**

**ST PRODUCTS ARE NOT DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE ST PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER'S SOLE RISK, EVEN IF ST HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY ST AS BEING INTENDED FOR "AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL" INDUSTRY DOMAINS ACCORDING TO ST PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.**

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2013 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

[www.st.com](http://www.st.com)