

---

## STM32G4 Series lifetime estimates

### Introduction

This application note presents lifetime usage estimates for STM32G4 Series microcontrollers (see applicable products on the table below). The presented profiles are dependent on voltage scaling of the device (VOS) and the maximum supported junction temperature ( $T_j$ ).

The product lifetime estimates presented in this document are estimated and do not represent the guaranteed lifetime for the product.

**Table 1. Applicable products**

Type	Product lines
Microcontrollers	STM32G4x1 STM32G4x3 STM32G4x4

## 1 General information

---

This document presents the STM32G4 Series lifetime usage estimates. These estimates are qualified depending on frequencies, voltage and junction temperature.

The frequencies and applied voltages are provided in the device datasheets.

The STM32G4 Series microcontrollers are Arm<sup>®</sup>-based devices.

*Note:* Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.



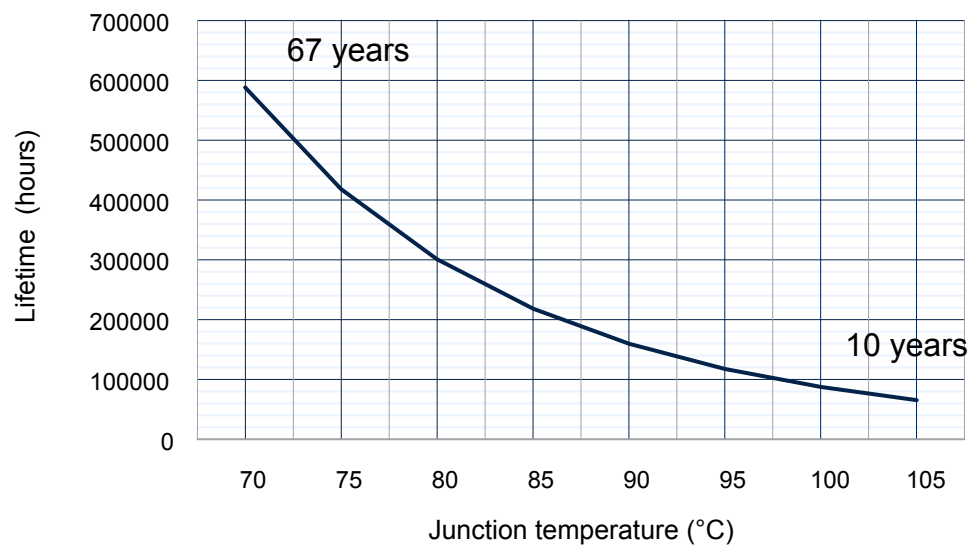
## 2 STM32G4 Series lifetime usage estimation

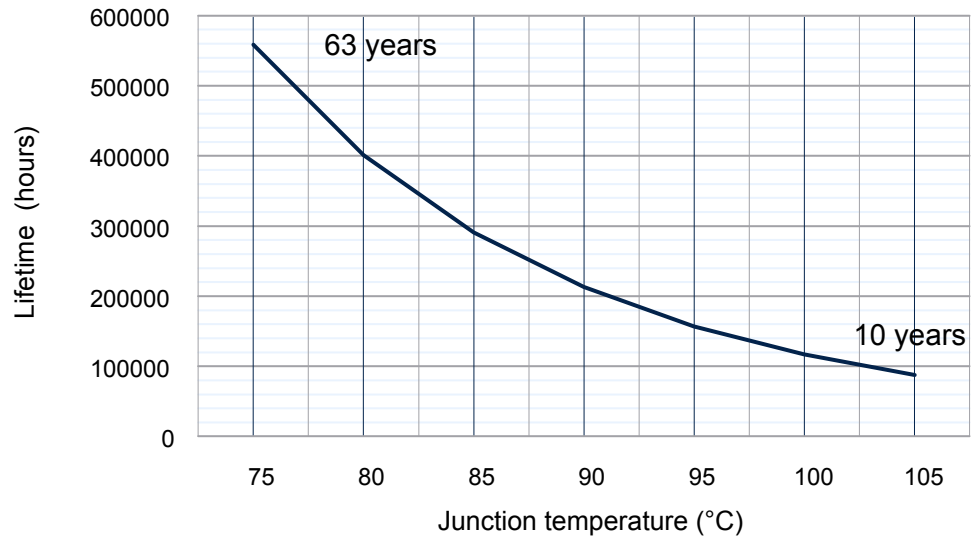
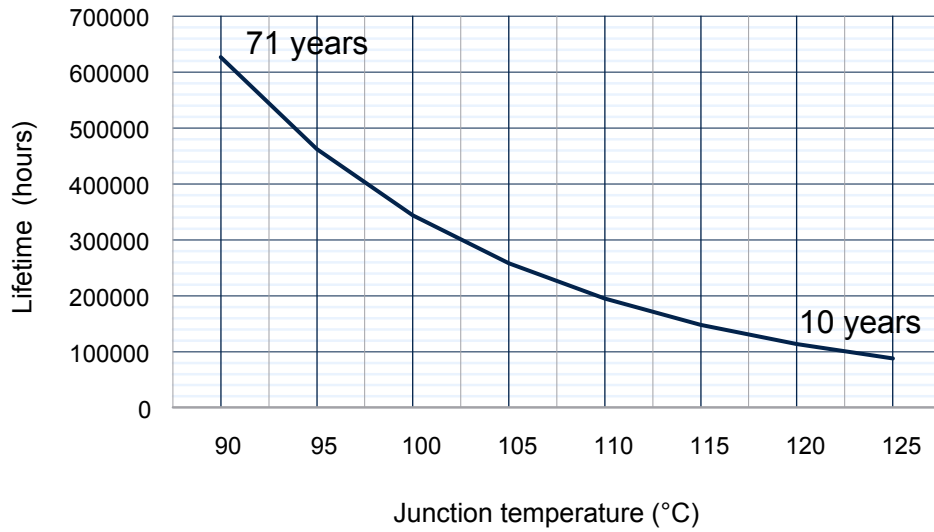
This section presents data and tables representing the lifetime usage estimation for STM32G4 Series devices for typical use conditions.

**Table 2. STM32G4 Series lifetime usage estimation for typical use conditions**

	Lifetime (years)	Operating ratio (%)	V <sub>DD</sub> nominal (V)	V <sub>CORE</sub> nominal (V)	Junction temperature (T <sub>J</sub> ) (°C)
Range 1 Boost mode (Max cpu clock = 170 MHz)	10	100	3.3	1.28	100
Range 1 normal mode (Max cpu clock = 150 MHz)	10	100	3.3	1.2	105
Range 2 (Max cpu clock = 26 MHz)	10	100	3.3	1	125

**Figure 1. Lifetime estimation range 1 boost mode**



**Figure 2. Lifetime estimation range 1 normal mode**

**Figure 3. Lifetime estimation range 2**


## Revision history

**Table 3. Document revision history**

Date	Version	Changes
17-Nov-2021	1	Initial release.

## Contents

<b>1</b>	<b>General information .....</b>	<b>2</b>
<b>2</b>	<b>STM32G4 Series lifetime usage estimation .....</b>	<b>3</b>
	<b>Revision history .....</b>	<b>5</b>
	<b>Contents .....</b>	<b>6</b>
	<b>List of tables .....</b>	<b>7</b>
	<b>List of figures.....</b>	<b>8</b>

## List of tables

<b>Table 1.</b>	Applicable products . . . . .	1
<b>Table 2.</b>	STM32G4 Series lifetime usage estimation for typical use conditions . . . . .	3
<b>Table 3.</b>	Document revision history . . . . .	5

## List of figures

<b>Figure 1.</b>	Lifetime estimation range 1 boost mode . . . . .	3
<b>Figure 2.</b>	Lifetime estimation range 1 normal mode . . . . .	4
<b>Figure 3.</b>	Lifetime estimation range 2 . . . . .	4



**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, please refer to [www.st.com/trademarks](http://www.st.com/trademarks). All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2021 STMicroelectronics – All rights reserved