
Atmel AVR542: Migration from ATmega325P/3250P/329P/3290P to ATmega325PA/3250PA/329PA/3290PA



8-bit Atmel Microcontrollers

Application Note

1 Introduction

In order to optimize the manufacturing process and to further reduce current consumption, an optimized version of Atmel® ATmega325P/3250P/329P/3290P has been introduced.

The Atmel ATmega325PA/3250PA/329PA/3290PA is a functionally identical, drop-in replacement for the ATmega325P/3250P/329P/3290P. All devices are subject to the same qualification process and same set of production tests.

ATmega325P/3250P/329P/3290P and ATmega325PA/3250PA/329PA/3290PA have separate datasheets. This application note outlines the differences between the two devices and the datasheets. There is also a detailed change log to assist the user at the end of the ATmega325PA/3250PA/329PA/3290PA datasheet. Remember to always use the latest revision of the device datasheet.

Minor differences in typical characteristics are not discussed in this document as long as the low and high limits remain the same. For detailed information about the typical characteristics, see sections "Electrical Characteristics" and "Typical Characteristics" of the device datasheets.

Note: This application note serves as a guide to ease migration. For complete device details, always refer to the most recent version of the ATmega325PA/3250PA/329PA/3290PA datasheet.

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2 Changes in characteristics

This section outlines major differences in characteristics that may have an effect on the application in which the device is used. For detailed information, refer to the most recent version of the device datasheets.

2.1 Current consumption

Active and idle mode current consumption of the device has been reduced significantly. [Table 2-1](#) and [Table 2-2](#) present typical current consumption figures at room temperature. All values are taken from device datasheets, unless otherwise noted.

Table 2-1. Typical Current Consumption of Device at Room Temperature

Mode	Condition	ATmega325P ATmega3250P	ATmega325PA ATmega3250PA	Change
Active	V _{CC} = 2V, f = 1MHz	0.5mA	0.37mA	-26%
	V _{CC} = 3V, f = 4MHz	2.6mA	2.4mA	-8%
	V _{CC} = 5V, f = 8MHz	9mA	5.3mA	-41%
Idle	V _{CC} = 2V, f = 1MHz	0.14mA	0.14mA	0%
	V _{CC} = 3V, f = 4MHz	0.75mA	0.60mA	-20%
	V _{CC} = 5V, f = 8MHz	2.9mA	1.6mA	-45%

Table 2-2. Typical Current Consumption of Device at Room Temperature

Mode	Condition	ATmega329P ATmega3290P	ATmega329PA ATmega3290PA	Change
Active	V _{CC} = 2V, f = 1MHz	0.5mA	0.37mA	-26%
	V _{CC} = 3V, f = 4MHz	2.6mA	2.4mA	-8%
	V _{CC} = 5V, f = 8MHz	9mA	5.3mA	-41%
Idle	V _{CC} = 2V, f = 1MHz	0.14mA	0.14mA	0%
	V _{CC} = 3V, f = 4MHz	0.75mA	0.60mA	-20%
	V _{CC} = 5V, f = 8MHz	2.9mA	1.6mA	-45%

3 Datasheet changes

For a summary of changes, see the datasheet revision history at the end of the Atmel ATmega325PA/3250PA/329PA/3290PA datasheet.



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