Differences between the FM24C04A and FM24C04B

Compares 4Kb 5V I^2C F-RAM Devices

DESCRIPTION

This document points out the differences between the FM24C04A and FM24C04B devices. The two devices are identical in terms of pinout, package dimensions and composition, read/write functionality, WP pin operation, and address pin functionality.

DROP-IN REPLACEMENT OR NOT

From a software point of view, the two devices are identical. The summary table below highlights the differences.

COMPATIBILITY CHART

FM24C04A Feature or Spec		**… is FM24C04B compatible?**
Package		Yes
Pinout		Yes
Temperature Range		Yes
Operating Voltage		Yes
Operating Current		Yes
Standby Current		Yes
R/W Function		Yes
Timing/Freq		Yes
Data Retention		Yes*
Endurance		Yes

* See table on next page.

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DETAILED COMPARISON TABLE

Differences are highlighted in yellow.

	FM24C04A	FM24C04B	Comments
Package Types	-	-	Same, "green" SOIC package
Package Outlines	SOIC-8	SOIC-8	Same outline and board footprint
Pinout	-	-	Same
Temperature Range	-40C to +85C	-40C to +85C	Same
Operating Voltage Range	4.5 to 5.5V	4.5 to 5.5V	Same
Active Supply Current	150µA @ 100kHz 1000µA @ 1MHz	100µA @ 100kHz 400µA @ 1MHz	The 24C04B-G offers lower active current at all clock rates.
Standby Current	10µA	10µA	Same
Read/Write Function	-	-	Same 1-byte addressing, same Slave IDs, same Device Select bits.
Clock Freq	1 MHz	1 MHz	Same
Data Retention *	45 yrs (+85ºC)	38 yrs (+75ºC)	Nearly the same
Endurance	1E+12	1E+12	FM24C04B-G is virtually unlimited at 1MHz (1700 yrs for a 64-byte loop)

OTHER			
V_{DD} Rise/Fall Time	-	30µs/V, 100µs/V	Added power ramp specs to 24C04B
t_{PU} Power Up Time	-	10 ms	Added first access timing spec to 24C04B
V_{IH} (max)	V_{DD}+0.5V	V_{DD}+0.3V	