

Differences between the FM25040A and the FM25040B

Applies to 5V 4Kb SPI F-RAM Devices



DESCRIPTION

This document points out the differences between the FM25040A and FM25040B devices. The two devices are identical in terms of pinouts and read/write functionality. In terms of speed, both operate up to 20MHz and have the same timing specifications.

DROP-IN REPLACEMENT OR NOT

From a software point of view, the two devices are identical. The two devices are read/write compatible. Both devices use the same one-byte address. From a hardware point of view, the key difference between the two devices is the FM25040B's lower operating current. The summary table below highlights the differences.

COMPATIBILITY CHART

FM25040A Feature or Spec		... is FM25040B compatible?
Packages		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.

DETAILED COMPARISON TABLE

Differences are highlighted in yellow.

	FM25040A	FM25040B	Comments
Package Types	SOIC-8	SOIC-8	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	400µA @ 1MHz 8.0mA @ 20MHz	250µA @ 1MHz 4.0mA @ 20MHz	The 25040B offers lower active current.
Standby Current	10µA	10µA	Same
Read/Write Function	-	-	Same 1-byte addressing, same op-codes
Clock Freq	20 MHz	20 MHz	Same
Data Retention	45 yrs (+85°C)	38 yrs (+75°C)	Nearly the same
Endurance	1E+12	1E+12	Same
OTHER			
V_{DD} Rise/Fall Time	-	30µs/V, 100µs/V	Added power ramp specs
t_{PU} Power Up Time	-	10 ms	Added first access timing spec