

Differences between Grade 1 Versions of the FM25640 and the FM25640B

Applies to 5V Grade 1 64Kb SPI F-RAM Devices



DESCRIPTION

This document points out the differences between the Grade 1 versions of the FM25640 and the FM25640B devices. The two devices are identical in terms of package/pinout, DC/AC parameters, and read/write functionality. The endurance is improved on the FM25640B-GA. The data retention is different.

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 two-byte address. From a hardware point of view, the key difference between the two devices is the FM25640B-GA's lower operating current. The summary table below highlights the differences.

COMPATIBILITY CHART

FM25640-GA Feature or Spec	... is FM25640B-GA 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	No*
Endurance	Yes

* See table on next page.

DETAILED COMPARISON TABLE

Differences are highlighted in yellow.

	<u>FM25640-GA</u>	<u>FM25640B-GA</u>	<u>Comments</u>
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 +125C	-40C to +125C	Same
Operating Voltage Range	4.5 to 5.5V	4.5 to 5.5V	Same
Active Supply Current	750 μ A @ 1MHz 2.7mA @ 14MHz	750 μ A @ 1MHz 2.7mA @ 14MHz	Same
Standby Current	10 μ A (+85C) 30 μ A (+125C)	10 μ A (+85C) 30 μ A (+125C)	Same
Read/Write Function	-	-	Same 2-byte addressing, same op-codes
Clock Freq	4 MHz	4 MHz	Same
AC Timing Parameters	-	-	All spec limits are the same
Data Retention	9000 hrs (+125C) 17 yrs (+55°C)	1000 hrs (+125C) 10000 hrs (+105C) 17 yrs (+55°C)	Nearly the same
Endurance	1E+12	1E+13	The 25640B offers improved endurance
OTHER			
V_{DD} Rise/Fall Time	-	30 μ s/V, 100 μ s/V	Added power ramp specs
t_{PU} Power Up Time	-	10 ms	Added first access timing spec