

Differences between the FM25CL64 and the FM25CL64B

Applies to 3V 64Kb SPI F-RAM Devices



DESCRIPTION

This document points out the differences between the FM25CL64 and FM25CL64B devices. The two devices are identical in terms of pinout, packages, 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 two-byte address. From a hardware point of view, the key differences between the two devices are the FM25CL64B's higher standby current. The summary table below highlights the differences.

COMPATIBILITY CHART

FM25CL64 Feature or Spec is FM25CL64B compatible?
Packages		Yes
Pinout		Yes
Temperature Range		Yes
Operating Voltage		Yes
Operating Current		Yes
Standby Current		No
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.

	<u>FM25CL64</u>	<u>FM25CL64B</u>	<u>Comments</u>
Package Types	SOIC8, DFN8	SOIC8, DFN8	Same “green” SOIC package, same DFN package (4x4.5mm)
Package Outlines	SOIC8, DFN8	SOIC8, DFN8	Same outlines and board footprints
Pinout	-	-	Same
Temperature Range	-40C to +85C	-40C to +85C	Same
Operating Voltage Range	2.7 to 3.65V	2.7 to 3.65V	Same
Active Supply Current	350 μ A @ 1MHz 7.0mA @ 20MHz	200 μ A @ 1MHz 3.0mA @ 20MHz	The 25CL64B-G offers lower active current especially at higher freq.
Standby Current	1 μ A	6 μ A (max) 3 μ A (typ)	FM25CL64B has higher I _{SB} , typical is 3 μ A.
Read/Write Function	-	-	Same 2-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	“Unlimited”	1E+14	FM25CL64B-G is virtually unlimited at 20MHz (85 yrs for a 64-byte loop)

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