

## Differences between the FM25C160 and the FM25C160B

*Applies to 5V 16Kb SPI F-RAM Devices*



### DESCRIPTION

This document points out the differences between the FM25C160 and FM25C160B 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 two-byte address. From a hardware point of view, the key difference between the two devices is the FM25C160B's lower operating current. The summary table below highlights the differences.

### COMPATIBILITY CHART

FM25C160 Feature or Spec	... is FM25C160B 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.

	<u>FM25C160</u>	<u>FM25C160B</u>	<u>Comments</u>
<b>Package Types</b>	SOIC-8	SOIC-8	Same "green" SOIC package
<b>Package Outlines</b>	SOIC-8	SOIC-8	Same outline and board footprint
<b>Pinout</b>	-	-	Same
<b>Temperature Range</b>	-40C to +85C	-40C to +85C	Same
<b>Operating Voltage Range</b>	4.5 to 5.5V	4.5 to 5.5V	Same
<b>Active Supply Current</b>	400 $\mu$ A @ 1MHz 8.0mA @ 20MHz	250 $\mu$ A @ 1MHz 4.0mA @ 20MHz	The 25C160B offers lower active current.
<b>Standby Current</b>	10 $\mu$ A	10 $\mu$ A	Same
<b>Read/Write Function</b>	-	-	Same 2-byte addressing, same op-codes
<b>Clock Freq</b>	20 MHz	20 MHz	Same
<b>Data Retention</b>	45 yrs (+85°C)	38 yrs (+75°C)	Nearly the same
<b>Endurance</b>	1E+12	1E+12	Same
<b>OTHER</b>			
<b>V<sub>DD</sub> Rise/Fall Time</b>	-	30 $\mu$ s/V, 100 $\mu$ s/V	Added power ramp specs
<b>t<sub>PU</sub> Power Up Time</b>	-	10 ms	Added first access timing spec