

Differences in FM25L256 and FM25L256B

256Kb 3V SPI FRAM Devices



DESCRIPTION

There are differences between the FM25L256 and FM25L256B 3V SPI 256Kb FRAM devices. As of March 2007, the FM25L256 was declared “not recommended for new designs”, and the alternative device is the FM25L256B device.

The command set (op-codes), the addressing, the write-protection scheme, the package/pinout are no different between the original and “B” part. For the rev “B” part, the ESD ratings have been improved on the Human Body Model (4kV) and Machine Model (200V). The data retention time remains the same on the “B” part at 10 years. Note that the V_{DD} Fall Time specification is changed to allow a faster V_{DD} fall time above 2V, but requires that V_{DD} does not fall too quickly below 2V.

For the 3V rev “B” device, the operating voltage and operating temperature ranges have been improved and unified. The 3V device is no longer split into two different temperatures and voltage ranges.

The FM25L256B device is offered only in the “green”/RoHS package. However, this lead-free package is compatible with standard Sn-Pb solder systems.

The DFN package marking scheme has changed on the “B” part. The part number marking is now “5L25BG” instead of “RG5L25”.

COMPARISON TABLE

Differences are highlighted in yellow.

	FM25L256	FM25L256B	Comments
Temp. Range	Comm. (0 to +70C) Ext. (-25 to +85C)	-40C to +85C	Rev “B” has one temp range
Operating Voltage Range	2.7 to 3.6V, but split Comm/Ext	2.7 to 3.6V	Rev “B” has one voltage range
Package Outlines	SOIC-8	SOIC-8	Same outline and board footprint
Clock Freq	25 MHz (Comm.) 20 MHz (Ext.)	20 MHz	Retained ext. temp. freq on rev “B”
Active Supply Current	0.3mA @ 1MHz 5mA @ 20MHz	0.5mA @ 1MHz 10mA @ 20MHz	Higher current on rev “B”. At a nominal 5MHz, “B” part is 2.5mA and power is only 8.25mW.
Standby Current	10µA	10µA	Same
Package Types	-S, -G, -DG	-G, -DG	No leaded (Pb) package on rev “B”
V_{DD} Fall Time	100µs/V	50µs/V ($V_{dd}>2V$) 1ms/V ($V_{dd}<2V$)	Rev “B” allows faster power down rates where it is most important.