

Differences between the FM24C16A and FM24C16B

Compares 16Kb 5V I²C F-RAM Devices



DESCRIPTION

This document points out the differences between the FM24C16A and FM24C16B devices. The two devices are identical in terms of pinout, package dimensions and composition, read/write functionality, WP pin operation, and address pin functionality.

DROP-IN REPLACEMENT OR NOT

From a software point of view, the two devices are identical. The summary table below highlights the differences.

COMPATIBILITY CHART

FM24C16A Feature or Spec is FM24C16B compatible?
Package		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>FM24C16A</u>	<u>FM24C16B</u>	<u>Comments</u>
Package Types	-	-	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	150µA @ 100kHz 1000µA @ 1MHz	100µA @ 100kHz 400µA @ 1MHz	The 24C16B-G offers lower active current at all clock rates.
Standby Current	10µA	10µA	Same
Read/Write Function	-	-	Same 1-byte addressing, same Slave IDs, same Device Select bits.
Clock Freq	1 MHz	1 MHz	Same
Data Retention *	45 yrs (+85°C)	38 yrs (+75°C)	Nearly the same
Endurance	1E+12	1E+12	FM24C16B-G is virtually unlimited at 1MHz (1700 yrs for a 64-byte loop)
OTHER			
V_{DD} Rise/Fall Time	-	30µs/V, 100µs/V	Added power ramp specs to 24C16B
t_{PU} Power Up Time	-	10 ms	Added first access timing spec to 24C16B
V_{IH} (max)	V _{DD} +0.5V	V _{DD} +0.3V	