

Migrating from FM24V02 to FM24V02A – KBA96041

Question : Is FM24V02A a drop-in replacement for the FM24V02 device? What all are differences between the new (FM24V02A) and the old (FM24V02) parts?

Answer: The FM24V02A is a new silicon revision of the existing FM24V02 device and is a drop-in replacement for the FM24V02 device. The software can read the device ID to differentiate between FM24V02A and FM24V02. The device ID for the FM24V02A is 004201h and for the FM24V02 is 004200h. Apart from this change, there is no change in firmware required to migrate. However, the two silicon revisions have the following features/parameters differences, which should be evaluated before migrating from the older silicon to the newer silicon.

Features/ Parameters	FM24V02	FM24V02A
Device ID	004200h	004201h
Surface mount lead soldering temperature	260 °C for 10 seconds	260 °C for 3 seconds
Electrostatic discharge voltage (Human Body Model)	3500 V	2000 V
Electrostatic discharge voltage (Charged Device Model)	1250 V	500 V
Output LOW voltage (for $V_{OL} = 0.2$ V, max)	$I_{OL} = 150 \mu A$ for $V_{DD} \geq 2.0$ V	Not specified
Output LOW voltage (for $V_{OL} = 0.4$ V, max)	$I_{OL} = 2$ mA for $V_{DD} \geq 2.7$ V	$I_{OL} = 2$ mA for $V_{DD} \geq 2.0$ V
Output LOW voltage (for $V_{OL} = 0.6$ V, max)	Not specified	$I_{OL} = 6$ mA for $V_{DD} \geq 2.0$ V
Data in hold ($t_{HD:DAT}$), Max @ 3.4 MHz I^2C	Not specified	70 ns
Input rise time (t_R), Min @ 3.4 MHz I^2C	Not specified	10 ns
Input fall time (t_F), Min @ 3.4 MHz I^2C	Not specified	10 ns
Input fall time (t_F), Min @ 1.0 MHz I^2C	Not specified	20 * ($V_{DD} / 5.5$ V)
ACK output valid time ($t_{VD:ACK}$)	Not specified	Specified, meets NXP I^2C spec
Output fall time from V_{IH} min to V_{IL} max	Not specified	Specified, meets NXP I^2C spec
Power-up V_{DD} (min) to first access (START condition)	250 μs	1000 μs