



PRODUCT AND PROCESS CHANGE NOTIFICATION

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ISSUE DATE: 16-Jan-2014
NOTIFICATION: 15955
TITLE: KINETIS K-Family 100MHz 5N22D Mask Revision and 4N22D Errata Update
EFFECTIVE DATE: 16-Apr-2014

DEVICE(S)

MPN
KK20DN512VMC10
MK10DN512VLK10
MK10DN512VLL10
MK10DN512VLQ10
MK10DN512VMC10
MK10DN512VMC10R
MK10DN512VMD10
MK10DX128VLQ10
MK10DX128VMD10
MK10DX256VLQ10
MK10DX256VMD10
MK20DN512VLK10
MK20DN512VLL10
MK20DN512VLQ10
MK20DN512VMC10
MK20DN512VMD10
MK20DX128VLQ10
MK20DX256VLK10
MK20DX256VLL10
MK20DX256VLQ10
MK20DX256VLQ10R
MK20DX256VMC10
MK20DX256VMD10
MK30DN512VLL10
MK30DN512VLQ10
MK30DX256VLQ10
MK40DN512VLK10
MK40DN512VLL10

MK40DN512VLQ10
MK40DN512VMD10
MK40DX128VMD10
MK40DX256VLQ10
MK40DX256VMD10
MK50DN512CLL10
MK50DN512CLQ10
MK50DN512CMC10
MK50DN512CMD10
MK50DN512CMD10R
MK50DX256CLK10
MK50DX256CLL10
MK50DX256CMC10
MK50DX256CMD10
MK51DN256CMD10
MK51DN512CLL10
MK51DN512CLQ10
MK51DN512CMC10
MK51DN512CMD10
MK51DX256CLK10
MK51DX256CLL10
MK51DX256CMC10
MK52DN512CLQ10
MK52DN512CMD10
MK53DN512CLQ10
MK53DN512CMD10
MK53DX256CLQ10
MK53DX256CMD10
MK60DN256VLL10
MK60DN256VLL10R
MK60DN256VLQ10
MK60DN256VMC10
MK60DN256VMD10
MK60DN512VLL10
MK60DN512VLL10R
MK60DN512VLQ10
MK60DN512VMC10
MK60DN512VMD10
MK60DX256VLL10
MK60DX256VLQ10
MK60DX256VMC10

MK60DX256VMD10

AFFECTED CHANGE CATEGORIES

- MASK SET REV (SAME FAB SITE)

DESCRIPTION OF CHANGE

Freescale Semiconductor is pleased to announce the qualification of 5N22D mask set for Kinetis K Series 100MHz product family.

With the enhancement made on this new mask set, the following errata have been eliminated:

1. 6189 FTFL: ERSSRC (Erase Sector) command does not change the Swap System status from UPDATE to UPDATE-ERASED on devices in this product family with 256KB of total P-Flash
2. 5751 FTFx: Launching the Read 1's Section command (RD1SEC) on an entire flash block results in access error (ACCER)
3. 5706 FTFx: MCU security is inadvertently enabled (secured) if a mass erase is executed when the flash blocks/halves are swapped. This issue only affects applications that use the flash swap feature
4. 6665 Operating requirements: Limitation of the device operating range

The new Kinetis 100 MHz devices (5N22D mask set) errata documentation has been added to the freescale.com website at:

http://cache.freescale.com/files/microcontrollers/doc/errata/KINETIS_5N22D.pdf

The Kinetis 100 MHz devices (4N22D mask set) errata documentation has been updated to include additional errata that have been identified. The updated version has been added to the freescale.com website at:

http://cache.freescale.com/files/microcontrollers/doc/errata/KINETIS_4N22D.pdf

Updates to the 4N22D mask set include the addition of the following new errata. Workarounds are available on the Errata Report:

- 6804 CJTAG: Performing a mode change from Standard Protocol to Advanced Protocol may reset the CJTAG
- 6990 CJTAG: possible incorrect TAP state machine advance during Check Packet
- 6939 Core: Interrupted loads to SP can cause erroneous behavior
- 6358 ENET: Write to Transmit Descriptor Active Register (ENET_TDAR) is ignored
- 6189 FTFL: ERSSRC (Erase Sector) command does not change the Swap System status from UPDATE to UPDATE-ERASED on devices in this product family with 256KB of total P-Flash
- 4710 FTM: FTMx_PWMLOAD register does not support 8-/16-bit accesses
- 6484 FTM: The process of clearing the FTMx_SC[TOF] bit does not work as expected under a certain condition when the FTM counter reaches FTM_MOD value
- 5641 FlexCAN: Module does not transmit a message that is enabled to be transmitted at a specific moment during the arbitration process.
- 6573 JTAG: JTAG TDO function on the PTA2 disables the pull resistor
- 7027 UART: During ISO-7816 T=0 initial character detection invalid initial characters are

stored in the RxFIFO

7028 UART: During ISO-7816 initial character detection the parity, framing, and noise error flags can set

6472 UART: ETU compensation needed for ISO-7816 wait time (WT) and block wait time (BWT)

4647 UART: Flow control timing issue can result in loss of characters if FIFO is not enabled

7029 UART: In ISO-7816 T=1 mode, CWT interrupts assert at both character and block boundaries

7090 UART: In ISO-7816 mode, timer interrupts flags do not clear

7031 UART: In single wire receive mode UART will attempt to transmit if data is written to UART_D

5704 UART: TC bit in UARTx_S1 register is set before the last character is sent out in ISO7816 T=0 mode

7091 UART: UART_S1[NF] and UART_S1[PE] can set erroneously while UART_S1[FE] is set

7092 UART: UART_S1[TC] is not cleared by queuing a preamble or break character

6933 eDMA: Possible misbehavior of a preempted channel when using continuous link mode

REASON FOR CHANGE

The new mask set (5N22D) addresses the fixed errata listed above and the errata documentation for the Kinetis 100 MHz devices (4N22D) has been updated.

ANTICIPATED IMPACT OF PRODUCT CHANGE(FORM, FIT, FUNCTION, OR RELIABILITY)

There have been no changes made to the current production device. There is a new mask set (5N22D) available with fixes in place. The errata describe existing conditions identified on current production devices. There are potential software and/or hardware implications to customers.

Freescale will consider specific conditions of acceptance of this change submitted within 30 days of receipt of this notice on a case by case basis. To request further data or inquire about the notification, please enter a [Service Request](#).

For sample inquiries - please go to www.freescale.com

QUAL DATA AVAILABILITY DATE: 14-Nov-2013

QUALIFICATION STATUS: COMPLETED

QUALIFICATION PLAN:

No Change to 4N22D. Refer to the attached qualification report for 5N22D.

RELIABILITY DATA SUMMARY:

No Change to 4N22D. Refer to the attached qualification report for 5N22D.

ELECTRICAL CHARACTERISTIC SUMMARY:

No Change to 4N22D. Electrical characterization was done on 5N22D and meets electrical specifications

CHANGED PART IDENTIFICATION:

There is no change to the orderable part number, part marking for mask set information will be changed from 4N22D to 5N22D.

5N22D samples may be ordered with the following sample part number:

KK20DN512VMC10 - MAP 121 8*8*0.8P0.65

KK60DN512VLL10 - LQFP 100 14SQ1.4P0.5

SAMPLE AVAILABILITY DATE: 29-Jan-2014

ATTACHMENT(S):

External attachment(s) FOR this notification can be viewed AT:

[15955_5N22D_144_MAPBGA_Customer_Qual_Report_12_5_2013.pdf](#)

[15955_KINETIS_5N22D.pdf](#)

[15955_KINETIS_4N22D.pdf](#)
