



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

06-APR-2004

SUBJECT: ON Semiconductor Final Product/Process Change Notification 13417

TITLE: Final Notification for Transfer of Mosaic 1 & 1.5 Devices to ONCR/Tesla Fab

EFFECTIVE DATE: 06-Jun-2004

AFFECTED CHANGE CATEGORY:

- ON Semiconductor Fab Site
- Wafer Process

AFFECTED PRODUCT DIVISION:

- Analog Products Div
- Logic Products

ADDITIONAL RELIABILITY DATA: Available

Contact your local ON Semiconductor Sales Representative or Keith Stapley, <RXNN90@onsemi.com>

SAMPLES: Contact Below

Contact your local ON Semiconductor Sales Representative or Josh Warner, <R47830@onsemi.com >

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact Sales Representative or Gregg Hooker, <FFMGNR@onsemi.com >

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 60 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact your local ON Semiconductor Sales Office.

DESCRIPTION AND PURPOSE:

This is the Final PCN to notify customers that the changes described in Initial PCN# 12671, located at www.onsemi.com, have been completed for the MC10H600, MC10H601, MC100H643, MC10H106, and the MC10H109 product families.

ON Semiconductor is pleased to announce the continuation of the MOSAIC 1.0/1.5 FAB transfer process to our internal factory ON Semiconductor Czech Republic (ONCR; Formerly Tesla), located in Roznov, Czech Republic, to manufacture MOSAIC 1.0/1.5 Bipolar Technology products. The ONCR Fab is an ISO9001 certified facility and currently manufactures the Analog product family. MOSAIC 1.0/1.5 products were previously fabricated in the Motorola Bipolar Manufacturing Center (BMC) in Mesa, Arizona.



Final Product/Process Change Notification #13417

This is the Final PCN only for the MC10H600, MC10H601, MC100H643, MC10H106, and the MC10H109 product families. Additional notifications will be issued separately for subsequent products when they have completed all qualification testing.

Device parameters will continue to meet all Data Book specifications, and reliability will continue to meet or exceed ON Semiconductor standards.

In the course of reviewing the electrical data for the parts released, test methodology improvements indicate prior limits for IINH were imprecisely set. A more accurate set of Minimum and Maximum limits will be corrected on the next revision of the datasheet to reflect these changes. Changes to released parts include MC10H600, MC10H601 and MC100H643 where changes are listed below.

Old MC10H600 Limits:

- IINH Limits for 10H and 100H ECL DC temperature ranges:
- Change IHH to IINH, but don't change the name of TTL DC IHH
- Change 0 degrees C from 225 uA to 255 uA
- Change 25 & 85 degrees C from 145 uA to 175 uA

Old MC10H601 Limits:

- IINH Limits for 10H and 100H ECL DC temperature ranges:
- Change 0 degrees C from 225 uA to 255 uA
- Change 25 & 85 degrees C from 145 uA to 175 uA

Old MC100H643 Limits:

- IINH Limits for 10H and 100H ECL DC temperature ranges:
- Change 0 degrees C from 225 uA to 255 uA
- Change TPLH Limits for 10H and 100H AC Characteristics for D:
- OLD 0 degrees C was 4.0 nS min and 5.0 nS max
- NEW 0 degrees C is 3.5 nS min and 5.5 nS max
- OLD 25 degrees C was 4.1 nS min and 5.1 nS max
- NEW 25 degrees C is 3.6 nS min and 5.6 nS max
- OLD 85 degrees C was 4.4 nS min and 5.4 nS max
- NEW 85 degrees C is 3.9 nS min and 5.9 nS max

Change TPLH Limits for 10H and 100H AC Characteristics for ENb:

- OLD 0 degrees C was 4.0 nS min and 5.0 nS max
- NEW 0 degrees C is 3.5 nS min and 5.5 nS max
- OLD 25 degrees C was 4.1 nS min and 5.1 nS max
- NEW 25 degrees C is 3.6 nS min and 5.6 nS max
- OLD 85 degrees C was 4.4 nS min and 5.4 nS max
- NEW 85 degrees C is 3.9 nS min and 5.9 nS max

There were no changes to the actual design or function of the parts.

RELIABILITY DATA SUMMARY:

Below is a summary of the reliability results.
A more detailed reliability report is available upon request.

Test	Conditions	Results
High Temp Op Life (HTOL)	Tj =150DegC for 2016 hours	0/394
	Tj =150DegC for 504 hours	0/79
High Temp Bake (HTB)	175DegC for 504 hours	0/320
	150DegC for 1008 hours	0/80



Final Product/Process Change Notification #13417

Preconditioning for MSL-1 (PC)	IR at 260DegC, TC, HAST, AC	0/718
	IR at 220DegC, TC, HAST, AC	0/320
PC-HAST	130DegC/85% RH/18.8 PSIG for 96 hours	0/315
Test	Conditions	Results
PC Autoclave (AC)	121DegC/100% RH/15 PSIG for 96 hours	0/320
PC-Temp Cycling (TC)	-65DegC to +150DegC; for 500 cycles	0/400
PC-Temp Cycling w/PC	-65DegC to +150DegC; for 500 cycles	0/80
Bond Pull Strength (BPS)	Per Factory Testing with CpK>= 1.33	PASS
Bond Shear Test (BS)	Per Factory Testing with CpK>= 1.33	PASS
ESD per JEDEC Standard	Human Body Model (HBM) Machine Model (MM) Charge Device Model (CDM)	MEETS CRITERIA
Destructive Physical Analysis (DPA)	Analysis done after PC-Temp Cycling	PASS
Construction Analysis (CA)	Compare to BMC results	MEETS OR EXCEEDS CRITERIA

Qualification Vehicle Justification

Technology	Qualification Device	Reason Chosen
MOSAIC1/1.5	MC10H605FN	Large Die, Highest Voltage, Schottky Diodes
	MC10H141FN	Complexity
	MC10H125P	Translator Function
	MC10ELT21D	Translator Function

Reliability Test Conclusions:
Reliability test data is consistent with passing ON Semiconductor requirements.

ELECTRICAL CHARACTERISTIC SUMMARY

Characterization data is available upon request.

CHANGED PART IDENTIFICATION

Product after work week 09, 2004 will be from the ONCR fab.



Final Product/Process Change Notification #13417

AFFECTED DEVICE LIST (WITHOUT SPECIALS):

PART

MC100H643FN
MC100H643FNR2
MC10H106FN
MC10H106FNR2
MC10H106L
MC10H106M
MC10H106MEL
MC10H106P
MC10H106PG
MC10H109FN
MC10H109FNR2
MC10H109L
MC10H109M
MC10H109MEL
MC10H109P
MC10H109PG
MC10H600FN
MC10H600FNR2
MC10H601FN
MC10H601FNR2