



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

02-JUN-2004

SUBJECT: ON Semiconductor Final Product/Process Change Notification 13495

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

EFFECTIVE DATE: 02-Aug-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 Don Warring <RRGA60@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 MC100ELT21, MC10H161, MC10H135, MC100H602, MC10H159, MC10H105, MC10H103, and the MC10H100 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.



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This is the Final PCN only for the MC100ELT21, MC10H161, MC10H135, MC100H602, MC10H159, MC10H105, MC10H103, and the MC10H100 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 the MC100ELT21, and the MC100H602, where changes are listed below.

Old MC100ELT21 Limits:

IINH Limits for PECL DC temperature ranges:

Change -40 degrees C was 150 uA and will be changed to 255 uA

Change 25, 85 degrees C was 150 uA and will be changed to 175 uA

Old MC100H602 Limits:

IINH Limits for 10H and 100H ECL DC temperature ranges:

Change IIH to IINH, but don't change the name of TTL DC IIH

Change 0 degrees C from 225 uA to 255 uA

Change 25 & 85 degrees C from 145 uA to 175 uA

Change TPHL Limits for 100H602 AC Characteristics for MR:

OLD 0 degrees C was 2.0 nS min and 3.4 nS max

NEW 0 degrees C is 2.7 nS min and 4.1 nS max

OLD 25 degrees C was 2.1 nS min and 3.5 nS max

NEW 25 degrees C is 2.8 nS min and 4.2 nS max

OLD 85 degrees C was 2.5 nS min and 3.9 nS max

NEW 85 degrees C is 3.2 nS min and 4.6 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
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
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



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Test	Conditions	Results
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 22 2004 will be from the ONCR fab.

AFFECTED DEVICE LIST (WITHOUT SPECIALS):

- PART**
 MC100ELT21D
 MC100ELT21DR2
 MC100ELT21DR2G
 MC100ELT21DT
 MC100ELT21DTR2
 MC100H602FN
 MC10H100L
 MC10H100M
 MC10H100MEL
 MC10H100P
 MC10H103FN
 MC10H103FNR2
 MC10H103L



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MC10H103M
MC10H103MEL
MC10H103P
MC10H103PG
MC10H105FN
MC10H105FNR2
MC10H105L
MC10H105M
MC10H105MEL
MC10H105P
MC10H105PG
MC10H135FN
MC10H135FNR2
MC10H135L
MC10H135M
MC10H135P
MC10H135PG
MC10H159FN
MC10H159FNR2
MC10H159L
MC10H159M
MC10H159MEL
MC10H159P
MC10H159PG
MC10H161FN
MC10H161FNR2
MC10H161L
MC10H161M
MC10H161MEL
MC10H161P
MC10H161PG