ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
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27-FEB-2004

SUBJECT: **ON Semiconductor Final Product/Process Change Notification 13325**

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

EFFECTIVE DATE: 27-Apr-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

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 MC10ELT21, MC10ELT20, MC10H121, MC10H123, and the MC10H604 product families.

ON Semiconductor is pleased to announce the Qualification and Process Certification of MOSAIC 1.0/1.5 process in 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.

This is the Final PCN only for the MC10ELT21, MC10ELT20, MC10H121, MC10H123, and the MC10H604 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 MC10ELT21 and MC100ELT21 where changes are listed below. A mistake will be corrected in the datasheet for the MC10ELT20 related to the TPLH values at 25 degrees C.

Old MC10ELT21 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 MC10H604 Limits:
IINH Limits for 10H and 100H ECL DC temperature ranges:
Change 0 degrees C was 225 uA and will be changed to 255 uA
Change 25, 85 degrees C was 145 uA and will be changed to 175 uA

Old MC10ELT20 Limits:
TPLH Limits for AC temperature range 25 degrees C:
OLD 25 degrees C was 0.9 nS min and 1.5 nS max
NEW 25 degrees C is 0.6 nS min and 1.25 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

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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 06, 2004 will be from the ONCR fab.

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AFFECTED DEVICE LIST (WITHOUT SPECIALS):

PART

MC10ELT20D
MC10ELT20DG
MC10ELT20DR2
MC10ELT20DR2G
MC10ELT20DT
MC10ELT20DTR2
MC10ELT21D
MC10ELT21DG
MC10ELT21DR2
MC10ELT21DR2G
MC10ELT21DT
MC10ELT21DTR2
MC10H121FN
MC10H121FNR2
MC10H121L
MC10H121M
MC10H121MEL
MC10H121P
MC10H123FN
MC10H123FNR2
MC10H123L
MC10H123P
MC10H604FN
MC10H604FNR2