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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**

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**01-DEC-2004**

**SUBJECT: ON Semiconductor Final Product/Process Change Notification #13828**

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

**EFFECTIVE DATE: 01-Feb-2005**

**AFFECTED CHANGE CATEGORY(S): ON Semiconductor Fab Site**

**AFFECTED PRODUCT DIVISION(S): Analog Products & ECL Products**

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Office or Don Warring <RRGA60@onsemi.com>

**SAMPLES:** Contact Below

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

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact Sales Office 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](http://www.onsemi.com), have been completed for the MC100ELT22, MC100ELT23, MC10H016, MC10H136, MC10H332, MC10H350, MC10H351, MC10H640, MC10H104, MC100ELT20, MC10ELT25, MC100ELT25, MC10H101, MC10H107, MC10H115, MC10H158, MC10H174, MC10H186, MC100H640, MC10H645, MC10H209, MC100H607, MC10H680, MC100H604, MC10H602, MC100H601, MC100H646, MC10H210, MC100H680, MC10H160, MC100H641, MC10H189, MC100ELT28 and the MC10H117 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 above listed 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.

**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
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

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Reliability Test Conclusions:

Reliability test data is consistent with passing ON Semiconductor requirements.

**ELECTRICAL CHARACTERISTIC SUMMARY**

In the course of reviewing the electrical data for the parts released, test methodology improvements indicate prior limits for I<sub>INH</sub> were imprecisely set. A more accurate set of limits will be corrected on the next revision of the datasheet to reflect these changes. Changes to released parts are listed below.

Old MC100ELT23 Limits:

I<sub>INH</sub> 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 MC10H640 Limits:

I<sub>INH</sub> Limits for 10H and 100H PECL DC temperature ranges:

Change I<sub>IH</sub> to I<sub>INH</sub>, but don't change the name of TTL DC I<sub>IH</sub>

Change 0 degrees C from 225 uA to 255 uA

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

Old MC100ELT25 Limits:

I<sub>INH</sub> Limits for PECL DC temperature ranges for the 10ELT and 100ELT:

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 MC10H607 Limits:

I<sub>INH</sub> Limits for 10H and 100H PECL DC temperature ranges:

Change I<sub>IH</sub> to I<sub>INH</sub>, but don't change the name of TTL DC I<sub>IH</sub>

Change 0 degrees C from 225 uA to 255 uA

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

Old MC10H680 Limits:

I<sub>INH</sub> Limits for ECL DC and 100H PECL DC temperature ranges:

Change I<sub>IH</sub> to I<sub>INH</sub>, but don't change the name of TTL DC I<sub>IH</sub>

Change 0 degrees C from 225 uA to 255 uA

Change 25 & 75 degrees C from 145 uA to 175 uA

Old MC10H604 Limits:

I<sub>INH</sub> Limits for ECL DC and 100H PECL DC temperature ranges:

Change I<sub>IH</sub> to I<sub>INH</sub>, but don't change the name of TTTL DC I<sub>IH</sub>

Change 0 degrees C from 225 uA to 255 uA

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

Old MC10H602 Limits:

I<sub>INH</sub> Limits for 10H ECL and 100H DC temperature ranges:

Change I<sub>IH</sub> to I<sub>INH</sub>, but don't change the name of TTL DC I<sub>IH</sub>

Change 0 degrees C from 225 uA to 255 uA

Change 25 & 75 degrees C from 145 uA to 175 uA

Old MC100H601 Limits:

I<sub>INH</sub> Limits for 10H ECL and 100H DC temperature ranges:

Change I<sub>IH</sub> to I<sub>INH</sub>, but don't change the name of TTL DC I<sub>IH</sub>

Change 00 degrees C from 225 uA to 255 uA

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

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Old MC10H646 Limits:

IINH Limits for 10H PECL DC and 100H PECL 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

Old MC100H641 Limits:

IINH Limits for 10H PECL DC and 100H PECL 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

Old MC100ELT28 Limits:

IINH Limits for PECL DC temperature ranges for the 10ELT and 100ELT:

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

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

**CHANGED PART IDENTIFICATION**

Product marked after WW48 2004 may contain ONCR die, but is dependent on the inventory usage of the current remaining material.

**AFFECTED DEVICE LIST (WITHOUT SPECIALS)****PART**

MC100ELT20D  
MC100ELT20DR2  
MC100ELT20DR2G  
MC100ELT20DT  
MC100ELT20DTR2  
MC100ELT22D  
MC100ELT22DG  
MC100ELT22DR2  
MC100ELT22DR2G  
MC100ELT22DT  
MC100ELT22DTR2  
MC100ELT23D  
MC100ELT23DG  
MC100ELT23DR2  
MC100ELT23DR2G  
MC100ELT23DT  
MC100ELT23DTR2  
MC100ELT25D  
MC100ELT25DR2  
MC100ELT25DR2G  
MC100ELT25DT  
MC100ELT25DTR2  
MC100ELT28D  
MC100ELT28DG  
MC100ELT28DR2  
MC100ELT28DT  
MC100ELT28DTR2  
MC100H601FN  
MC100H601FNG



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MC100H601FNR2  
MC100H601FNR2G  
MC100H604FN  
MC100H604FNG  
MC100H604FNR2  
MC100H604FNR2G  
MC100H607FN  
MC100H607FNR2  
MC100H640FN  
MC100H640FNR2  
MC100H641FN  
MC100H641FNR2  
MC100H641FNR2G  
MC100H646FN  
MC100H646FNR2  
MC100H680FN  
MC10ELT25D  
MC10ELT25DG  
MC10ELT25DR2  
MC10ELT25DR2G  
MC10ELT25DT  
MC10ELT25DTR2  
MC10H016FN  
MC10H016FNR2  
MC10H016L  
MC10H016P  
MC10H101FN  
MC10H101FNR2  
MC10H101L  
MC10H101M  
MC10H101MEL  
MC10H101P  
MC10H104FN  
MC10H104FNR2  
MC10H104L  
MC10H104M  
MC10H104MEL  
MC10H104P  
MC10H104PG  
MC10H107FN  
MC10H107FNR2  
MC10H107L  
MC10H107M  
MC10H107MEL  
MC10H107P  
MC10H107PG  
MC10H115FN  
MC10H115FNR2  
MC10H115L  
MC10H115M  
MC10H115MEL  
MC10H115P  
MC10H115PG  
MC10H117FN  
MC10H117FNR2  
MC10H117L



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MC10H117M  
MC10H117MEL  
MC10H117P  
MC10H117PG  
MC10H136FN  
MC10H136FNG  
MC10H136FNR2  
MC10H136L  
MC10H136P  
MC10H136PG  
MC10H158FN  
MC10H158FNR2  
MC10H158FNR2G  
MC10H158L  
MC10H158M  
MC10H158MEL  
MC10H158P  
MC10H160FN  
MC10H160L  
MC10H160M  
MC10H160MEL  
MC10H160P  
MC10H160PG  
MC10H174FN  
MC10H174FNR2  
MC10H174M  
MC10H174MEL  
MC10H174P  
MC10H174PG  
MC10H186FN  
MC10H186FNR2  
MC10H186L  
MC10H186P  
MC10H186PG  
MC10H189FN  
MC10H189FNR2  
MC10H189L  
MC10H189M  
MC10H189MEL  
MC10H189P  
MC10H209FN  
MC10H209FNR2  
MC10H209L  
MC10H209MEL  
MC10H209P  
MC10H210FN  
MC10H210FNR2  
MC10H210L  
MC10H210M  
MC10H210MEL  
MC10H210P  
MC10H210PG  
MC10H332FN  
MC10H332FNR2  
MC10H332P  
MC10H350FN



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MC10H350FNG  
MC10H350FNR2  
MC10H350FNR2G  
MC10H350L  
MC10H350M  
MC10H350MEL  
MC10H350P  
MC10H350PG  
MC10H351FN  
MC10H351FNG  
MC10H351FNR2  
MC10H351M  
MC10H351MEL  
MC10H351P  
MC10H602FN  
MC10H602FNR2  
MC10H640FN  
MC10H640FNR2  
MC10H640FNR2G  
MC10H645FN  
MC10H645FNR2  
MC10H680FN  
MC10H680FNG  
MC10H680FNR2  
MC10H680FNR2G  
MCW100ELT22  
MCW100ELT23  
MCW10ELT24  
MCW10ELT25  
MCW10H101  
MCW10H102  
MCW10H103  
MCW10H104  
MCW10H105  
MCW10H107  
MCW10H109  
MCW10H113  
MCW10H115  
MCW10H116  
MCW10H124  
MCW10H125  
MCW10H131  
MCW10H136  
MCW10H141  
MCW10H158  
MCW10H164  
MCW10H176  
MCW10H350  
MCW10H351  
MCW10H642