ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

11-May-2004

SUBJECT: ON Semiconductor Final Product/Process Change Notification #13464

TITLE: Wafer Fabrication Site Transfer for Selected Product Families to the COM1 Facility

EFFECTIVE DATE: 11-Jul-2004

AFFECTED CHANGE CATEGORY:
ON Semiconductor Fab Site

AFFECTED PRODUCT DIVISION: ECL Products

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Representative or
Keith Stapley <RXNN90@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Representative

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact Sales Representative or Tim Gurnett <R13617@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# 12874, located at www.onsemi.com, have been completed for the selected product families listed below.
ON Semiconductor is pleased to announce the continuation of the MOSAIC 35 FAB transfer process in their internal factory COM 1, located on the ON Semiconductor site in Phoenix, AZ, to manufacture MOSAIC 3 Bipolar Technology products. COM1 is an ISO9001 certified facility and currently manufactures the MOSAIC 5 product family. MOSAIC 3 products were previously fabricated in the Motorola Bipolar Manufacturing Center (BMC) in Mesa, Arizona. This is the Final PCN only for the selected 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, except where noted below. Reliability will continue to meet or exceed ON Semiconductor standards.

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In the course of reviewing the electrical data for the parts released in group 9, test methodology improvements indicate prior limits for propagation delays on the MC10E457 and 100E457, listed below were imprecisely set. A more accurate set of limits will be set and update on current data sheet:

10E457 & 100E457: (No changes to Diff and SE delays to Q)
SEL to Q propagation delay for min/max limits across temp.
Old limits: 0C = 300 to 775, 25C = 350 to 725, 85C = 350 to 725 Ps.
New limits: 0C = 525 to 825, 25C = 550 to 850, and 85C = 575 to 875 Ps.

COMSEL to Q propagation delay for min/max limits across temp.
Old limits: 0C = 325 to 800, 25C = 375 to 750, 85C = 375 to 750 Ps.
New limits: 0C = 550 to 850, 25C = 575 to 875, and 85C = 600 to 900 Ps.

Rise and Fall Time min/max limits across temp.
Old limits: 0C = 125 to 500, 25C = 150 to 450, 85C = 150 to 450 Ps.
New limits: 0C = 100 to 400, 25C = 100 to 400, and 85C = 100 to 400 Ps.

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

RELIABILITY DATA SUMMARY:
Reliability Test Results:
Below is a summary of the interim reliability results for the MC10EL16D.
A more detailed reliability report is available upon request.

Test	Conditions	Results
High Temp Op Life (HTOL)	Tj =150DegC for 2016 hours	0/558
High Temp Bake (HTB)	150DegC for 1008 hours	0/480
	175DegC for 504 hours	0/480
Preconditioning for MSL-1 (PC)	IR at 260DegC TC/HAST (SOIC8 PLCC28)	0/1120
	IR at 260DegC AC (SOIC8)	0/240
	IR at 220DegC AC (PLCC28)	0/320
PC-HAST	130DegC/85% RH/18.8 PSIG for 96 hours	0/556
PC-Autoclave (AC)	121DegC/100% RH/15 PSIG for 96 hours	0/560
PC-Temp Cycling (TC)	-65DegC to +150DegC; for 1000 cycles	0/479
	-65DegC to +150DegC; for 500 cycles	0/80
ESD per JEDEC Standard	Human Body Model(HBM)	MATCHES
	Machine Model (MM)	CONTROL
	Charge Device Model(CDM)	LOT
Destructive Physical Analysis (DPA)	Analysis done after PC-Temp Cycling	PASS
Intrinsic Reliability (IR)	Compare to BMC results for Stress migration, Electromigration & Hot Carrier Injection	MEETS OR EXCEEDS CRITERIA
Construction Analysis (CA)	Compare to BMC results	MEETS OR EXCEEDS CRITERIA

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Parameter Verification	Electrical Characterization/distribution summary of Critical Parameters	AVAIL

Qualification Vehicle Justification

Technology	Qualification Device	Reason Chosen
MOSAIC3	MC10EL16D	Smallest array, high volume, 8ld SOIC
	MC100E195FN	Medium array, AC test critical, 28ld PLCC
	MC10E016FN	Complex medium array, highest current, 28ld PLCC

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

ELECTRICAL CHARACTERISTIC SUMMARY: Characterization data available upon request.

CHANGED PART IDENTIFICATION:
Product marked after WW28, 2004 may contain COM1 die, but is dependent on the inventory usage of the current material. Customers are encouraged to contact ON Semiconductor to order samples.
After the PCN expiration date, customers may receive products manufactured with die from either the COM1 or BMC FAB. For the 100E457, 100E310. 100LVE310 and SC64046 product marked after WW21, 2004 will contain COM1 die.

AFFECTED DEVICE LIST(WITHOUT SPECIALS):

PART
MC100E111FN
MC100E111FNR2
MC100E143FN
MC100E143FNR2
MC100E310FN
MC100E310FNR2
MC100E404FN
MC100E404FNR2
MC100E457FN
MC100E457FNR2
MC100EL32D
MC100EL32DR2
MC100EL32DR2G
MC100EL32DT
MC100EL32DTR2
MC100EL51D
MC100EL51DG
MC100EL51DR2
MC100EL51DT
MC100EL51DTR2
MC100EL59DW
MC100LVE310FN
MC100LVE310FNR2
MC100LVEL32D
MC100LVEL32DR2
MC100LVEL32DR2G
MC100LVEL32DT
MC100LVEL32DTR2
MC10E107FN

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MC10E107FNR2
MC10E143FN
MC10E143FNR2
MC10E166FN
MC10E166FNR2
MC10E446FN
MC10E446FNR2
MC10E457FN
MC10E457FNR2
MC10EL32D
MC10EL32DG
MC10EL32DR2
MC10EL32DR2G
MC10EL32DT
MC10EL32DTR2
MC10SX1189D
MC10SX1189DR2
MCH12140D
MCH12140DR2
MCH12140DR2G
MCW100E111
MCW100EL32
MCW100EL51