ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

17-DEC-2003

SUBJECT: ON Semiconductor Final Product/Process Change Notification #13268

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

EFFECTIVE DATE: 17-Feb-2004

AFFECTED CHANGE CATEGORY:
ON Semiconductor Fab Site
Wafer Process

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 Qualification and Process Certification of MOSAIC 35 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.

Final Product/Process Change Notification #13268

In the course of reviewing the electrical data for the parts released in group 5, test methodology improvements indicate prior limits for propagation delays 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.

10/100E016:
TPHL/TPLH for all paths, min/max limits will be set to 500 Ps to 900 Ps.
Old limits varied on each path, differential, single ended and reset were 550 to 625 (min) to 1000 (max).

RISE and FALL min/max limits will be set to 200 Ps to 700 Ps.
Old limits were 300 Ps to 800 Ps for all temperatures.

10/100E452:
TPHL/TPLH for MR to Q, max limits will be set to 900 Ps.
Old max limit was 850 Ps.

10E151:
TPHL/TPLH for CLK and MR to Q, min/max limits will be set to 575 Ps to 900 Ps.
Old limits were 475 Ps to 800 Ps for CLK and 475 Ps to 850 Ps for MR, at all temperatures.

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

Final Product/Process Change Notification #13268

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
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 WW07, 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 10E142, 10E151, 10E404, 10E416 10E452, 100E016 and 100E452, product marked after WW51, 2003 will contain COM1 die.

AFFECTED DEVICE LIST(WITHOUT SPECIALS):

PART
MC100E016FN
MC100E016FNR2
MC100E452FN
MC100E452FNR2
MC10E016FN
MC10E016FNR2
MC10E142FN
MC10E142FNR2
MC10E151FN
MC10E151FNR2
MC10E404FN
MC10E404FNR2
MC10E416FN
MC10E416FNR2
MC10E452FN
MC10E452FNR2
MCW100E016
MCW100E452
MCW10E016
MCW10E142
MCW10E151
MCW10E452