



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION

Generic Copy

Issue Date
13-Dec-2006

SUBJECT: ON Semiconductor Final Product/Process Change Notification #15688

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

PROPOSED FIRST SHIP DATE: 13-Feb-2007

AFFECTED CHANGE CATEGORY(S): ON Semiconductor Fab Site

AFFECTED PRODUCT DIVISION(S): Analog & Logic Products

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact your local ON Semiconductor Sales Office or GREGG HOOKER <gregg.hooker@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available

Contact your local ON Semiconductor Sales Office or MATT KAS <Matt.Kas@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. Device parameters will continue to meet all Data Book specifications, except where noted below.

**Final Product/Process Change Notification #15688**

Reliability will continue to meet or exceed ON Semiconductor standards. In the course of reviewing the electrical data for the parts released in group 11, test methodology improvements indicate prior limits for propagation delays on several parts listed below were imprecisely set. A more accurate set of limits will be set and updated on the current data sheet:

MC10E158 and MC100E158 AC Limits:

Tplh and Tphl Min/Typ/Max Limits across all temperature ranges:
Change D is 225/385/550 and will be changed to **250/500/650** ps
Change SEL is 400/600/775 and will be changed to **450/700/825** ps

MC100LVE210 AC Limits:

Tplh and Tphl Min/Max Limits across -40 degrees C temperature range:
Change Diff is 475/675 and will be changed to 475/**875** ps
Change SE is 400/700 and will be changed to 400/**850** ps
Tplh and Tphl Min/Max Limits across 25 and 85 degrees C temperature range:
Change Diff is 500/700 and will be changed to 500/**900** ps
Change SE is 450/750 and will be changed to **500/900** ps

MC10E150 and MC100E150 AC Limits:

Tplh and Tphl Min/Max Limits across all temperature ranges:
Change LEN is 375/700 and will be changed to 375/**800** ps

MC10E104 and MC100E104 AC Limits:

Tr and Tf Min/Typ/Max Limits across all temperature ranges:
Change Q is 275/425/700 and will be changed to **100/425/700** ps

MC10E175 and MC100E175 AC Limits:

Tplh and Tphl Min/Typ/Max Limits across all temperature ranges:
Change D to Q is 550/725/900 and changed to 550/**800/975** ps
Change D to Oddpar is 950/1250/1550 and changed to 950/**1400/1600** ps
Change LEN to Q is 525/700/900 and changed to 525/**800/975** ps
Change LEN to Oddpar is 525/700/900 and changed to 525/**800/975** ps
Change MR to Q is 525/700/900 and changed to 525/**800/975** ps
Change MR to Oddpar is 525/700/900 and changed to 525/**800/975** ps

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



Final Product/Process Change Notification #15688

RELIABILITY DATA SUMMARY:

Reliability Test Results:

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	0/558
High Temp Bake (HTB)	175DegC for 504 hours 150DegC for 1008 hours	0/480 0/480
Preconditioning For MSL-1 (PC)	IR at 260DegC, TC, HAST (SOIC, PLCC28) IR at 260DegC, AC (SOIC 8) IR at 220DegC, AC, (PLCC28)	0/1120 0/240 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
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)	MATCHES CONTROL LOT
Destructive Physical Analysis (DPA)	Analysis done after PC-Temp Cycling	PASS
Construction Analysis (CA)	Compare to BMC results	MEETS OR EXCEEDS CRITERIA
Intrinsic Reliability (IR)	Compare to BMC results for Stress migration, Electromigration & Hot Carrier Injection.	MEETS OR EXCEEDS CRITERIA
Qualification Vehicle Justification		
Technology	Qualification Device	Reason Chosen
MOSAIC3	MC10EL16D	Smallest array, High Volume, SOIC 8
	MC100E195FN	Medium array, AC test, PLCC 28
	MC10E016FN	Complex medium array, highest current, PLCC 28

**Final Product/Process Change Notification #15688**

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 WW07, 2007 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 FPCN expiration date, customers may receive products manufactured with die from either the COM1 or BMC FAB.

AFFECTED DEVICE LIST**PART**

MC10E171FN
MC10E171FNR2
MC10E171FNG
MC10E171FNR2G

MC100E141FN
MC100E141FNR2
MC100E141FNG
MC100E141FNR2G

MC100EL31D
MC100EL31DR2
MC100EL31DG
MC100EL31DR2G

MC100EL31DT
MC100EL31DTR2
MC100EL31DTG
MC100EL31DTR2G

MC100E158FN
MC100E158FNR2
MC100E158FNG
MC100E158FNR2G

MC100LVE210FN
MC100LVE210FNR2
MC100LVE210FNG
MC100LVE210FNR2G

MC100E175FN
MC100E175FNR2
MC100E175FNG
MC100E175FNR2G



Final Product/Process Change Notification #15688

AFFECTED DEVICE LIST

PART

MC100E104FN
MC100E104FNR2
MC100E104FNG
MC100E104FNR2G

MC100E150FN
MC100E150FNR2
MC100E150FNG
MC100E150FNR2G

MCW100E141
MCW100E104