ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

02-MAR-2004

SUBJECT: ON Semiconductor Final Product/Process Change Notification #13324

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

EFFECTIVE DATE: 02-May-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 the MOSAIC 35 process in their internal factory, COM 1, located on the ON Semiconductor site in Phoenix, AZ. COM1 is an ISO9001 certified facility and currently manufactures other devices on the MOSAIC 35 and MOSAIC 5 product families. The MOSAIC 35 process is being used to manufacture MOSAIC 3 Bipolar Technology products. 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 #13324

In the course of reviewing the electrical data for the parts released in group 7, test methodology improvements indicate prior limits for propagation delays on the MC100EL56 & 100LVEL56 and edge speeds, (tr & tf), for the 10EL34 & 100EL34, listed below were imprecisely set.
A more accurate set of limits will be set and update on current data sheet:

100EL56 & LVEL56:
Both differential and single-ended propagation delay min/max limits across temp.
Old limits: -40C = 340 to 540, 25C = 360 to 560 and 85C = 380 to 580 Ps.
New limits: -40C = 400 to 600, 25C = 420 to 620 and 85C = 440 to 640 Ps.

10EL34 & 100EL34:
Both rise and fall time min/max limits across temp.
Old limits across temp: 275 to 525 Ps.
New limits across temp: 225 to 475 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
Parameter Verification	Electrical Characterization/distribution summary of Critical Parameters	AVAIL

Final Product/Process Change Notification #13324

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 WW17, 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 100EL56 and 100LVEL56, product marked after WW09, 2004 will contain COM1 die.

AFFECTED DEVICE LIST(WITHOUT SPECIALS):

PART
MC100EL05D
MC100EL05DR2
MC100EL05DR2G
MC100EL05DT
MC100EL05DTR2
MC100EL12D
MC100EL12DG
MC100EL12DR2
MC100EL12DR2G
MC100EL12DT
MC100EL12DTR2
MC100EL14DW
MC100EL14DWG
MC100EL14DWR2
MC100EL34D
MC100EL34DR2
MC100EL35D
MC100EL35DG
MC100EL35DR2
MC100EL35DT
MC100EL35DTR2
MC100EL52D
MC100EL52DR2
MC100EL52DT
MC100EL52DTR2
MC100EL56DW
MC100EL56DWG
MC100EL56DWR2
MC100LVEL14DW
MC100LVEL14DWG
MC100LVEL14DWR2
MC100LVEL14DWR2G

Final Product/Process Change Notification #13324

MC100LVEL56DW
MC100LVEL56DWR2
MC10EL05D
MC10EL05DR2
MC10EL05DR2G
MC10EL05DT
MC10EL05DTR2
MC10EL12D
MC10EL12DR2
MC10EL12DR2G
MC10EL12DT
MC10EL12DTR2
MC10EL34D
MC10EL34DR2
MC10EL35D
MC10EL35DG
MC10EL35DR2
MC10EL35DT
MC10EL35DTR2
MC10EL52D
MC10EL52DR2
MC10EL52DR2G
MC10EL52DT
MC10EL52DTR2
MCW100LVEL14
MCW100LVEL56
MCW10EL05