ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

04-NOV-2003

SUBJECT: ON Semiconductor Final Product/Process Change Notification #13176

TITLE: Wafer Fabrication Site Transfer of the 100LVEL11, 100EL01, 100EL33 and 10EL51 Product Families to the Com1 Facility

EFFECTIVE DATE: 04-Jan-2004

AFFECTED CHANGE CATEGORY:
ON SEMICONDUCTOR ASSY SITE
SUBCONTRACTOR FAB SITE
WAFER PROCESS

AFFECTED PRODUCT DIVISION: Broadband Products Div

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 100LVEL11, 100EL01, 100EL33 and 10EL51 product families. 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 100LVEL11, 100EL01, 100EL33 and 10EL51 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.

ON Semiconductor

Final Product/Process Change Notification #13176

In the course of reviewing the electrical data for these released parts, test methodology improvements indicate prior limits for Clock to Q and Reset to Q propagation delays on the MC100EL33 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.

Old 100EL33 Limits:
Clock to Q (-40 C = 490 to 770 Ps, +25 C = 550 to 730 Ps and +85 C = 590 to 760 Ps)
Reset to Q (-40 C = 310 to 610 Ps, +25 C = 360 to 560 Ps and +85 C = 380 to 580 Ps)

New 100EL33 Limits:
Clock to Q (-40 C = 560 to 860 Ps, +25 C = 610 to 810 Ps and +85 C = 640 to 840 Ps)
Reset to Q (-40 C = 400 to 700 Ps, +25 C = 460 to 660 Ps and +85 C = 470 to 670 Ps)

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

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

Test	Conditions	Results
High Temp Op Life (HTOL)	Tj =150DegC	
	for 2016 hours	0/479
	for 1512 hours	0/80
High Temp Bake (HTB)	150DegC	
	for 1008 hours	0/480
	175DegC	
	for 504 hours	0/480
Preconditioning	IR at 260DegC TC/HAST (SOIC8 PLCC28)	0/1120
for MSL-1 (PC)	IR at 260DegC AC (SOIC8)	0/240
	IR at 220DegC AC (PLCC28)	0/320
PC-HAST	130DegC/85% RH/18.8 PSIG	
	for 96 Hrs	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
	for 500 cycles	0/80
ESD per JEDEC Standard	Human Body Model(HBM)	MATCHES
	Machine Model (MM)	CONTROL
	Charge Device Model(CDM)	LOT
Destructive	Analysis done after	PASS
Physical Analysis (DPA)	PC-Temp Cycling	
Intrinsic Reliability (IR)	Compare to BMC results for	MEETS
	Stress migration,	OR
	Electromigration	EXCEEDS
	& Hot Carrier Injection	CRITERIA

Final Product/Process Change Notification #13176

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:
For the 100EL01, 100EL33 and 10EL51 product marked after WW44, 2003 will contain COM1 die.
For the 100LVEL11 product marked after WW47 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.

AFFECTED DEVICE LIST(WITHOUT SPECIALS):

PART
MC100EL01D
MC100EL01DR2
MC100EL01DT
MC100EL01DTR2
MC100EL33D
MC100EL33DR2
MC100EL33DT
MC100EL33DTR2
MC100LVEL11D
MC100LVEL11DR2
MC100LVEL11DT
MC100LVEL11DTR2
MC10EL51D
MC10EL51DR2
MC10EL51DT
MC10EL51DTR2
MCW100EL01
MCW100LVEL11