



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

18-OCT-2002

SUBJECT: ON Semiconductor Final Product/Process Change Notification #12595

TITLE: Final Notification for IPCN#11335, Wafer Capacity Addition for MOSAIC5 Technology – Group 1

EFFECTIVE DATE: 17-Dec-2002

AFFECTED CHANGE CATEGORY: ON Semiconductor Fab Site & Wafer Process

AFFECTED PRODUCT DIVISION: Broadband Products

ADDITIONAL RELIABILITY DATA: Available

Contact your local ON Semiconductor Sales Office or Keith Stapley <RXNN90@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office or Nellie Hernandez <RGX650@onsemi.com>

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact Sales Office or Tim Gurnett <R13617@onsemi.com>

DISCLAIMER:

Final Product/Process Change Notification (FPCN) - Final Notification completing the notification process. Distributed at least 60 days from the effective date 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:

ON Semiconductor is pleased to announce the Qualification and Process Certification of the COM1 wafer fabrication facility located in Phoenix, Arizona to manufacture MOSAIC5 Bipolar technology products. MOSAIC5 products were previously fabricated in the Motorola MOS6 wafer fabrication facility in Mesa, Arizona.

This is the Final PCN for the listed devices. During the next several quarters, additional devices will be released, after completion of qualification. The effective date of this change will be 60 days from the issuance of this PCN for the devices listed. A Final PCN update notification will be announced for each group of parts as samples and electrical characterization data become available.

Device parameters will continue to meet all Data Book specifications, and reliability will continue to meet or exceed ON Semiconductor standards.

In the course of reviewing the electrical data for the LVEP111 and LVEP16 devices, typographical errors found in the data sheets will be corrected to match Low Voltage Family specification as provided by Design. VOL (max) limit will be changed to -1600 mV. With recent improvements of evaluation hardware and test methodology a more accurate measurement was observed regarding rise and fall times. Lower specifications limits will be adjusted to match the measured values across temperature for the 10EP11, 100EP11, 10EP16 and LVEP16 devices. There were no changes to the actual design or function of the parts.



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RELIABILITY DATA SUMMARY:

RELIABILITY WILL CONTINUE TO MEET OR EXCEED ON SEMICONDUCTOR STANDARDS.

Test	Conditions	Results
High Temp Op Life (HTOL)	Tj =150DegC for 504 hours	0/479
High Temp Bake (HTB)	150DegC for 1008 hours 175DegC for 504 hours	0/480 0/480
Preconditioning for MSL-1 (PC)	IR at 235DegC, TC, HAST, AC (Only for EP16 device)	0/957
Preconditioning for MSL-2 (PC)	IR at 235DegC, TC, THB, AC (Only for EP111 device)	0/720
PC-HAST	130DegC/85% RH/18.8 PSIG for 96 Hrs (Only for EP16 device)	0/240
PC-THB	85DegC/85% RH/18.8 PSIG for 1008 Hrs (Only for EP111 device)	0/240
PC-Autoclave (AC)	121DegC/100% RH/15 PSIG for 96 hours	0/480
PC-Temp Cycling (TC)	-65DegC to +150DegC; for 500 cycles	0/635
Bond Pull Strength (BPS)	Per Factory Testing with CpK>= 1.33	MEETS OR EXCEEDS CRITERIA
Bond Shear Test (BS)	Per Factory Testing with CpK>= 1.33	MEETS OR EXCEEDS CRITERIA
ESD per JEDEC Standard	Human Body Model (HBM) Machine Model (MM) Charge Device Model (CDM)	MEETS OR EXCEEDS CRITERIA
Destructive Physical Analysis (DPA)	Analysis done after PC-Temp Cycling	MEETS OR EXCEEDS CRITERIA
Intrinsic Reliability (IR)	Compare to MOS6 results for Stress migration, Electromigration & Hot Carrier Injection	MEETS OR EXCEEDS CRITERIA
Critical Parameter Shifts Analysis (CPA)	Datalog units and examine VOH and VOL before and after test on all HTOL and Temp cycled units	MEETS OR EXCEEDS CRITERIA
Skew Analysis (SA)	Examine 5 units from each group for tskew before and after HTOL and Temp Cycle tests	MEETS OR EXCEEDS CRITERIA



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<u>Test</u>	<u>Conditions</u>	<u>Results</u>
Construction Analysis (CA)	Compare to MOS6 results	MEETS OR EXCEEDS CRITERIA
Parameter Verification	Electrical Characterization/distribution summary of Critical Parameters	AVAIL

Qualification Vehicle Justification

<u>Technology</u>	<u>Qualification Device</u>	<u>Reason Chosen</u>
MOSAIC5	MC10EP16DT	Smallest Array Base, TSOP8
	MC100LVEP111FA	Largest Array Base, 32 pin TQFP

ELECTRICAL CHARACTERISTIC SUMMARY:

Electrical Characterization data is available upon request.

CHANGED PART IDENTIFICATION:

Product marked after WW51, 2002 may contain COM1 die. 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 MOS6 FAB. (example: xxx0251 and xxZY for small 4 character code packages, per application Note AND8002D).

AFFECTED DEVICE LIST(WITHOUT SPECIALS):

PART

- MC100EP11D
- MC100EP11DR2
- MC100EP11DT
- MC100EP11DTR2
- MC100EPT22D
- MC100EPT22DR2
- MC100EPT22DT
- MC100EPT22DTR2
- MC100LVEP111FA
- MC100LVEP111FAR2
- MC100LVEP16D
- MC100LVEP16DR2
- MC100LVEP16DT
- MC100LVEP16DTR2
- MC10EP11D
- MC10EP11DR2
- MC10EP11DT
- MC10EP11DTR2
- MC10EP16D
- MC10EP16DR2
- MC10EP16DT
- MC10EP16DTR2
- MCW100EP11
- MCW100EPT22
- MCW100LVEP111
- MCW10EP11
- MCW10EP16