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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**  
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**26-NOV-2003**

**SUBJECT: ON Semiconductor Final Product/Process Change Notification #13242**

**TITLE: Final Notification for IPCN# 11335, Wafer Capacity for MOSAIC5 Technology-  
Additional Devices**

**EFFECTIVE DATE: 26-Jan-2004**

**AFFECTED CHANGE CATEGORY: ON Semiconductor Fab Site**

**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  
Eric Glatfelter <R23606@onsemi.com>

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact Sales Office or Clarence Rebello <FFBWPN@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 Representative.

**DESCRIPTION AND PURPOSE:**

This is the Final Notification for additional devices related to IPCN 11335. 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 Notification for the MC10EP05, MC10EP56, and MC100EP40 devices from IPCN 11335. During the characterization of the part, the following datasheet changes were made:

MC10EP05:

tJitter Upper Limit at 85DegC changed to 1.5 ps.

MC100EP40:

Tr, Tf Lower Limit at 25DegC changed to 60 ps.

Tr, Tf Lower Limit at 85DegC changed to 70 ps.


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**RELIABILITY DATA SUMMARY:**

Reliability Test Results:

Below is a summary of the reliability results.

A more detailed reliability report is available upon request.

<b>Test</b>	<b>Conditions</b>	<b>Results</b>
High Temp Op Life (HTOL)	Tj =150DegC for 504 hours	0/479
High Temp Bake (HTB)	150DegC for 1008 hours	0/480
	175DegC for 504 hours	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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Construction Analysis (CA)	Compare to MOS6 results	MEETS OR EXCEEDS CRITERIA
Parameter Verification	Electrical Characterization/ distribution summary of Critical Parameters	AVAIL

**Qualification Vehicle Justification**

Technology	Qualification Device	Reason Chosen
MOSAIC5	MC10EP16DT	Smallest Array Base, TSSOP8
	MC100LVEP111FA	Largest Array Base, 32 pin TQFP

**Reliability Test Conclusions:**

Reliability test data is consistent with passing ON Semiconductor requirements.

**ELECTRICAL CHARACTERISTIC SUMMARY:**

Characterization data available upon request. Electrical Performance has not changed.

**CHANGED PART IDENTIFICATION:**

Product marked after WW04, 2004 may contain COM1 die.

**AFFECTED DEVICE LIST(WITHOUT SPECIALS):**

**PART**

MC100EP40DT  
MC100EP40DTR2  
MC10EP05D  
MC10EP05DR2  
MC10EP05DT  
MC10EP05DTR2  
MC10EP56DT  
MC10EP56DTR2