ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

12-FEB-2004

SUBJECT: ON Semiconductor Final Product/Process Change Notification #13309

TITLE: Final Notification for Transfer of MOSAIC 1 & 1.5 Devices to ONCR/Tesla Fab

EFFECTIVE DATE: 12-Apr-2004

AFFECTED CHANGE CATEGORY: ON Semiconductor Fab Site

AFFECTED PRODUCT DIVISIONS:
Analog Products
Logic 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
or Josh Warner <R47830@onsemi.com>

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact Sales Representative or Gregg Hooker <FFMGNR@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# 12671, located at www.onsemi.com, have been completed for the MC10H641, MC10H643, and MC10H646 product families.

ON Semiconductor is pleased to announce the Qualification and Process Certification of MOSAIC 1.0/1.5 process in our internal factory ON Semiconductor Czech Republic (ONCR; Formerly Tesla), located in Roznov, Czech Republic, to manufacture MOSAIC 1.0/1.5 Bipolar Technology products. The ONCR Fab is an ISO9001 certified facility and currently manufactures the Analog product family. MOSAIC 1.0/1.5 products were previously fabricated in the Motorola Bipolar Manufacturing Center (BMC) in Mesa, Arizona.

This is the Final PCN only for the MC10H641, MC10H643, and MC10H646 product families. Additional notifications will be issued separately for subsequent products when they have completed all qualification testing.

Final Product/Process Change Notification #13309

Device parameters will continue to meet all Data Book specifications as stated below. Reliability will continue to meet or exceed ON Semiconductor standards.

In the course of reviewing the electrical data for the parts released, test methodology improvements indicate prior limits for Iinh 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. Changes to released parts include MC10H641FN and MC10H643FN, and the MC10H646FN where changes are listed below.

Old MC10H641FN Limits:
IINH Limits for temperature ranges 0 degrees C:
Old 0 degrees C for 10/100 PECL DC was 225 uA
New 0 degrees C for 10/100 PECL DC is 255 uA

Old MC10H643FN Limits:
IINH Limits for temperature ranges 0 degrees C:
Old 0 degrees C for 10/100 PECL DC was 225 uA
New 0 degrees C for 10/100 PECL DC is 255 uA

Old MC10H646FN Limits:
IINH Limits for temperature ranges 0 degrees C:
Old 0 degrees C for 10/100 PECL DC was 225 uA
New 0 degrees C for 10/100 PECL DC is 255 uA

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

RELIABILITY DATA SUMMARY:
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 Tj =150DegC for 1008 hours Tj =150DegC for 504 hours	0/79 0/239 0/80
High Temp Bake (HTB)	175DegC for 504 hours	0/320
Preconditioning for MSL-1 (PC)	IR at 260DegC, TC, HAST, AC IR at 220DegC, TC, HAST, AC	0/480 0/320
PC-HAST	130DegC/85% RH/18.8 PSIG for 96 hours	0/237
PC-Autoclave (AC)	121DegC/100% RH/15 PSIG for 96 hours	0/240
PC-Temp Cycling (TC)	-65DegC to +150DegC; for 500 cycles	0/400
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)	MEETS CRITERIA

Final Product/Process Change Notification #13309

Destructive Physical Analysis (DPA)	Analysis done after PC-Temp Cycling	PASS
Construction Analysis (CA)	Compare to BMC results	MEETS OR EXCEEDS CRITERIA

Qualification Vehicle Justification

Technology	Qualification Device	Reason Chosen
MOSAIC1/1.5	MC10H605FN	Large Die, Highest Voltage, Schottky Diodes
	MC10H141FN	Complexity
	MC10H125P	Translator Function

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 after work week 06, 2004 will be from the ONCR fab.

AFFECTED DEVICE LIST (WITHOUT SPECIALS):

PART

MC10H641FN
MC10H641FNR2
MC10H643FN
MC10H643FNR2
MC10H646FN
MC10H646FNR2