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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**  
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**25-MAR-2003**

**SUBJECT: ON Semiconductor Final Product/Process Change Notification #12613**

**TITLE: Final Notification for Minigate SC88A New Die Design/Layout**

**EFFECTIVE DATE: 25-May-2003**

**AFFECTED CHANGE CATEGORY: Design Change**

**AFFECTED PRODUCT DIVISION: Logic Products Div**

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Representative or Laura Rivers <S20636@onsemi.com>

**SAMPLES:** Contact your local ON Semiconductor Sales Representative  
or Dianne Von Borstel <RPDR20@onsemi.com>

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact Sales Representative or Dianne Von Borstel <RPDR20@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:**

As part of ON Semiconductor's continuous improvement program, we are pleased to announce a new die design/layout for the MC74HC1G08, MC74HC1G32, MC74VHC1G08, MC74VHC1G32, and MC74VHC1GT08 device types. The new die will continue to be processed on the same 0.6um CMOS process as the previous design. The new design uses the same layout rules as the previous design.

Electrical performance and datasheet specifications will not change.



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**RELIABILITY DATA SUMMARY:**

**Reliability Test Summary: Package SC88A (SOT353)**

**Device = 1 lot each MC74VHC1G08DFT2, MC74VHC1G32DFT2, and MC74VHC1GT08DFT2**

| <b>Test</b>                     | <b>Conditions</b>                     | <b>Interval</b> | <b>SS</b>         |
|---------------------------------|---------------------------------------|-----------------|-------------------|
| High Temperature Operating Life | TJ =150DegC, c = 0, Room,<br>TA = TBD | 504 hours       | 0/80 x 3 lots     |
| High Temperature Bake           | 150DegC                               | 1008 hours      | 0/80 x 3 lots     |
| Pre-Conditioning                | IR at 260DegC, TC, HAST, AC           |                 | 0/250 x 3 lots    |
| PC-HAST                         | 131DegC/80% RH, Cycled bias           | 96 Hrs          | 0/80 x 3 lots     |
| PC-Autoclave                    | 121DegC/100% RH/15 PSIG               | 96 hours        | 0/80 x 3 lots     |
| PC-Temperature Cycling          | -65DegC to +150DegC                   | 500 cycles      | 0/80 x 3 lots     |
| Bond Pull Strength              | Condition C Post-Mold                 | 30 bonds        | = 5 units x 1 lot |
| Ball Shear                      | Ball bond shear or push off           | 30 bonds        | = 5 units x 1 lot |
| Destructive Physical Analysis   | AEC Q101                              | after PC-TC     | 3 units           |
| Resistance to Solder Heat       | 310 degrees C                         |                 | 0/30 x 1 lot      |

**ELECTRICAL CHARACTERISTIC SUMMARY:**

All devices on this new design meet or exceed the following:

ESD: >2000V HBM; >200V MM

Exception VHC1G32: >2000V HBM; >150V MM

Latch-up: >500mA

Electrical performance did not change.

Characterization report available upon request.

**CHANGED PART IDENTIFICATION:**

Devices with date codes after 0503 may be sourced from die with the new design.

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

**PART**

MC74HC1G08DFT1, MC74HC1G08DFT2, MC74HC1G08DTT1,  
MC74HC1G32DFT1, MC74HC1G32DFT2, MC74HC1G32DTT1,  
MC74VHC1G08DFT1, MC74VHC1G08DFT2, MC74VHC1G08DTT1,  
MC74VHC1G32DFT1, MC74VHC1G32DFT2, MC74VHC1G32DTT1,  
MC74VHC1GT08DFT1, MC74VHC1GT08DFT2, MC74VHC1GT08DTT1