



Product Change Notification

Product Change Notification Number: CC084601

Date: November 17, 2008

Title: CryptoRF LV Capacitor Breakdown Fix

Product Identification:

[See Attachment A](#)

Reason for Change:

☒ Design

☐ Manufacturing Location

☐ Processing

☒ Quality/Reliability

☐ Logistics

☐ Material

Change Description:

On each of these RF chips, low voltage capacitors are used for on-chip power supply decoupling. The current process has a sharp corner on the oxide isolation trench. At the edges of the poly-active capacitors, where the poly steps over the trench edge, the capacitor can break down, resulting in the excessive standby (ISB) current. This material is currently being screened at wafer probe, through an ISB supply current test. By resizing two masks, BN+ and LVOX, we are now depositing a thicker oxide and etching less at the edge of the capacitor, eliminating this oxide breakdown risk.

The change in total capacitance with this process change is negligible, so circuit operation/chip performance is unchanged. Multiple short-loop experimental split lots were processed to verify the change, and the yield loss has been eliminated. As a final safeguard against unintended consequences, HTOL testing was performed. This change does not affect the non-volatile memory portion of the chip.

Identification Method to Distinguish Change:

None, part numbers remain the same.

Qualification Data:

☒ available

☐ will be available in WW

☐ not applicable

Samples:

☐ available

☐ will be available in WW

☒ not applicable

Quantifiable Impact on Quality & Reliability:

None. 2016 hours of HTOL stress testing on 100 units of the AT88RF319 product, with zero failures.

Proposed First Ship Date*: February 17, 2009

**The Proposed First Ship Date is the forecasted date that a customer may expect to receive changed product. This is determined by the estimated date of inventory depletion on the PCN issue date. This may be affected by fluctuations in supply and demand. Consequently, although customers should be prepared to receive changed product on this date, Atmel will continue to ship pre-changed product until a time in which inventory has been depleted. This may result in pre-changed product being shipped to customers after this forecasted date.*

Atmel Contact: pcnadm@atmel.com

Atmel will deem this change accepted unless specific conditions of acceptance are provided in writing within 30 days from the date of this notice. All correspondence must be sent to the Quality Contact e-mail address listed above.

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Attachment A

Part Number	Part Number	Part Number
AT88SC0104CRF-MV1	AT88SC0204CRF-MV1	AT88SC0404CRF-MV1
AT88SC0104CRF-MVA1	AT88SC0204CRF-MVA1	AT88SC0404CRF-MVA1
AT88SC0104CRF-MX1	AT88SC0204CRF-MX1	AT88SC0404CRF-MX1
AT88SC0104CRF-MY1	AT88SC0204CRF-MY1	AT88SC0404CRF-MY1
AT88SC0104CRF-WA1	AT88SC0204CRF-WA1	AT88SC0404CRF-WA1
AT88SC0104CRF-WC1	AT88SC0204CRF-WC1	AT88SC0404CRF-WC1
AT88SC0808CRF-MV1	AT88SC1616CRF-MV1	AT88SC3216CRF-MV1
AT88SC0808CRF-MVA1	AT88SC1616CRF-MVA1	AT88SC3216CRF-MVA1
AT88SC0808CRF-MX1	AT88SC1616CRF-MX1	AT88SC3216CRF-MX1
AT88SC0808CRF-MY1	AT88SC1616CRF-MY1	AT88SC3216CRF-MY1
AT88SC0808CRF-WA1	AT88SC1616CRF-WA1	AT88SC3216CRF-WA1
AT88SC0808CRF-WC1	AT88SC1616CRF-WC1	AT88SC3216CRF-WC1
AT88SC6416CRF-MV1		
AT88SC6416CRF-MVA1		
AT88SC6416CRF-MX1		
AT88SC6416CRF-MY1		
AT88SC6416CRF-WA1		
AT88SC6416CRF-WC1		