



# Simtek Corporation

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## Product Change Notification

**PCN10023 Dated: 24 August 2005**

### ISSUE

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Lot to lot variation in Moisture Sensitivity Level performance at 260C in 28 lead, 330mil SOIC package and 28/32 lead, 300mil SOIC packages.

As a result of extensive testing of different package lots of the 28 lead, 330mil SOIC package and 28/32 lead, 300mil SOIC packages, [package designators "S", "SF", "N", and "NF"], it has become clear that there is an unacceptable level of variation in performance between lots at the 260C reflow temperature at the MSL1 rating, based on the J-STD-020C specification. As of this date there have been no reported field failures from customers using the 260C peak temperature reflow out of a total of approximately 250K devices shipped.

Simtek is changing its recommended rating for this package from MSL1 at 260C to MSL4 at 260C.

### PRODUCT AFFECTED

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The products affected by this issue are:

STK10C\*\*-SF, STK11C\*\*-SF, STK14C\*\*-SF, STK15C\*\*-SF, STK22C\*\*-SF,  
STK11C\*\*-(3)NF, STK14C\*\*-(3)NF, STK15C\*\*-NF, STK22C\*\*-NF, STK14CA\*-NF

These are all lead-free packages using matte tin termination plating. Products packaged in the Sn/Pb alloy termination plating, with the "S", "N" designator are not affected by this issue.

### CAUSE

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The packaging materials in current use for the SOIC package do not perform consistently at 260C reflow temperatures. While most lots meet the MSL1 requirement at 260C peak reflow temperature, some exhibit delamination in the paddle area after the required pre-conditioning and 3 reflow pass requirement of J-STD-020C.

### REMEDY

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Simtek is working with its Assembly services supplier to define a suitable set of materials that will perform consistently in this package type at the 260C peak reflow temperature.

A package qualification has been started using a material combination thought to be appropriate to this reflow temperature. Results, material detail and lifetest data are expected to be available for customer review in September 2005.

Samples and reliability information will be made available in this timeframe.

If the new materials prove acceptable, all Simtek products built using the SOIC package will be converted. In this case, shipments using the new materials will begin early in the 4<sup>th</sup> quarter of 2005.