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The TI Enhanced Plastic Product Family – Quality & Reliability Support Statement

In response to customer needs, Texas Instruments has released the Enhanced Plastic (EP) product family. EP products provide a means to facilitate, not replace, OEM qualification of COTS devices through baseline control and enhanced qualification pedigree.

Enhanced Plastic (EP) devices are TI catalog products comprehending devices from multiple families including Digital Signal Processors (DSP), Analog and Mixed-Signal, Digital Logic, ASIC, Microcontrollers, and Programmable Logic. Enhanced Plastic (EP) devices offer several advantages over standard COTS products:

- Stand-alone datasheets
- A controlled baseline - one assembly/test site and one wafer fabrication site
- Enhanced product change notification (PCN) via electronic distribution
 - Die revisions
 - Assembly process changes
 - Material changes such as mold compound and lead finish
 - Electrical performance
 - Manufacturing location
- Extended temperature up to and including -55°C to +125°C
- Qualification pedigree to assure reliable operation over specified temperature range
- Assurance from TI that the device will perform to datasheet electrical specifications in environments that require extended temperatures

TI EP package qualification comprehends performance at extended temperatures with package element concerns such as glass transition temperature and thermal expansion coefficients taken into account. Electrical testing is warranted to meet the data sheet over the specified temperature range. Device characterization and statistical process controls are used to ensure performance over the specified temperature range. Assembly, test and qualification changes require approval of the TI Technical Review Board (TRB).

TI will provide EP product reliability reports upon request. These include the results of periodic monitors as well as initial product qualification. Supplemental information on the device/product baseline will also be supplied. See <http://www.ti.com/sc/ep> for an example report. In addition, for those products where long term high-temperature storage and/or extended use at maximum recommended operating conditions may result in a reduction of overall device life (noted in the EP datasheet), additional derating information for extended temperatures is provided. See http://www.ti.com/ep_quality for additional EP Quality and Reliability Information.

For EP devices, TI will provide change notification via the TI electronic parts change notification (PCN) system if a change has the potential to affect form, fit, function, or reliability. In other words, changes to the baseline will be communicated prior to implementation. Distributors will be independently notified to facilitate notification of their customers.

In the event a proposed change does affect form, fit, function or reliability, TI will take steps to minimize the impact on the customer. This may include continuing production of the established baseline after commercial production has changed, establishing a wafer bank of the current die revision, and/or offering a lifetime buy on the configuration in question.

In the event a customer experiences a failure of a TI EP part, TI provide device analysis and application support as needed. A formal Device Analysis Report will be provided upon request. In the event TI analysis determines the device in question does not perform as defined by the TI EP datasheet, TI will take perform root cause analysis and take appropriate corrective action. A Corrective Action Report (8D Report) will be provided upon request and other affected customers of record notified.

TI's new products will offer an alternative to upsampling for customers who believe that a plastic packaged part is suitable for their particular application. Although the EP products receive additional testing and process verification over and above their commercial counterparts, they may still not be suitable for all environments. For those applications that require a ceramic/hermetic packaged integrated circuit, TI has an expansive product line to meet their needs. More information on EP products is available on the Texas Instruments website at <http://www.ti.com/sc/ep>.

The TI EP product line is a new concept in the semiconductor industry and will evolve based upon customer requirements. Please feel free to contact the undersigned if there are any additional questions or if you wish to further discuss the topics addressed above.

Sincerely,
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