

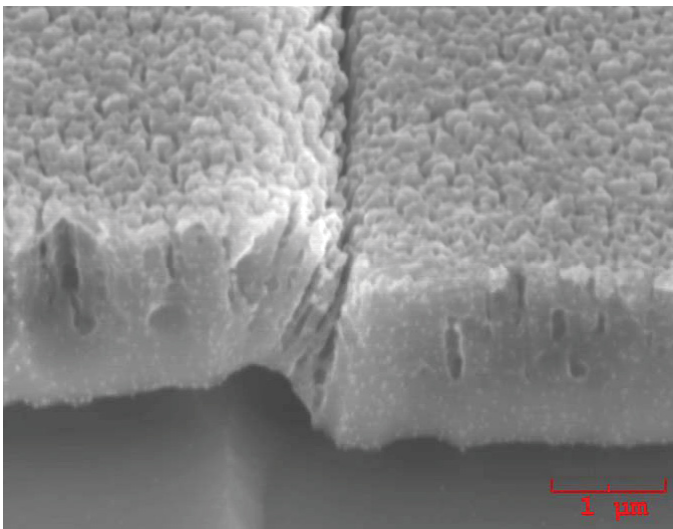
EEE Parts Bulletin

Electrical, Electronic, and Electromechanical

A periodic newsletter of the JPL/OSMS Assurance Technology Program Office (ATPO), NASA EEE Parts Assurance Group (NEPAG), and Section 514, of the Jet Propulsion Laboratory.

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A Look at Failure: Metallization Step Coverage Anomaly



SEM reveals unusual porosity of aluminum metallization with less than desirable step coverage on an IC in a hybrid MIL-STD-1553 device. MIL-STD-883, method 2018 requires at least 50% of the nominal metallization cross section area to be maintained across an oxide step. JPL's Failure Analysis Lab.

DSCC now DLA Land and Maritime

To emphasize the fact it is part of DLA (Defense Logistics Agency), DSCC (Defense Supply Center Columbus) has changed its name to DLA Land and Maritime.

GIDEP Alerts/Advisories

Contact your GIDEP Representative for a copy of:

Suspect Counterfeit	Exceeds 100 alerts – contact your GIDEP representative for details.
Misc.	APM-P-11-001 Integrated Circuit, Ultra Low Power Voltage Detectors and Micro-processor Supervisory Circuits

MDA Advisories

Contact Lori Risse 818-354-5131

Lessons Learned	MDA-LL-2010-014 Passivation and Heat Treatment Processes
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GIDEP: Rule Change for Counterfeit Parts Alerts

A recent change to the rules governing the release of suspect-counterfeit GIDEP alerts has netted nearly 200 alerts since inception on September 2010. This temporary rule change that expired December 15 did not require suppliers of suspect counterfeit parts to be identified on the alert notice. This is a marked increase of 800% over the normal flow of counterfeit related GIDEP alerts. At this point, it is not clear if the increase in alerts is due to duplicate alerts because both the supplier and multiple users release alerts on the same counterfeit unbeknownst to each other, or if vendors report more frequently as the guise of anonymity frees them from potential economic repercussions. Unfortunately, the lack of vendor/distributor information detrimentally affects the main weapon against counterfeits: Control over the distribution chain. At the same time, the increased report volume is taxing to the alert system without a clear benefit. GIDEP is assessing the effectiveness of the rule change, and you are encouraged to contact Jose' Pantaleon with your feedback at 818-354-1949.

Counterfeit Parts and Congress The recently enacted Senate Authorization Bill for NASA directs NASA to implement counterfeit electronic part avoidance techniques, a tracking database, and a training program. There is also an instruction for NASA to coordinate with other government agencies to share information regarding counterfeit avoidance. Contact Mike Sampson 301-614-6233.

EEPROM Failures for Data Retention

Recently, several 128k x 8 bit EEPROMs, part number 5962-3826718QMA, installed on a board at Marshall Space Flight Center experienced data retention errors during room temperature testing. A particular suspect die lot has been identified, and a GIDEP Alert will soon be issued. Contact Pat McManus 256-544-3383.

State of the Art (SOTA) Recalls

SOTA began issuing recall notices for select batches of metal film surface mount resistors (M55342, M32159 types) due to risk of open circuit failure resulting from complete or partial detachment of the end termination after solder assembly. SOTA's notification to affected

customers requests the parts be returned for replacement. A GIDEP has not yet been issued, but could be forthcoming. Contact Jay Brusse 301-286-2019, or Ray Smith 818-393-7547.

Task Group Update: G-12 TG10-01 Class Y for MIL-PRF-38535

(Xilinx Virtex-4 FPGAs and similar devices)

The charter of Class Y Task Group is to develop screening and qualification requirements for complex non-hermetic microcircuits for space.

Under the direction of Mike Sampson from NASA GSFC, Shri Agarwal, Ramin Roosta and Tom Wilson from NASA/JPL are leading this effort.

Although, initially driven by the Xilinx Virtex-4 FPGA, the Class Y concept has caught the attention of other major manufacturers. Expect to see new FPGA and non-FPGA products offered as Class Y.

The tasks going forward include:

1. Firm up Class Y's definition, screening and qualification requirements. This is a standards activity and manufacturers must run sufficient tests to establish that their products are reliable for space.
2. DLA Land and Maritime to update the military documents for Class Y.
3. Interested suppliers, e.g. Xilinx, to request Class Y certification. DLA Land and Maritime will conduct supplier audits to determine suitability.

Contact Shri Agarwal 818-354-5598.

Microelectronics Reliability & Qualification Workshop, MRQW

MRQW, which took place in early December in Southern California, is sponsored by The Aerospace Corporation, Jet Propulsion Laboratory, and NASA.

Workshop topics included device reliability, memories, packaging, FPGAs, and failure analysis. A post-workshop session devoted to National High Reliability Electronics Virtual Center program (HiREV) was well received. HiREV is a recently initiated government program led by the Air Force Research Laboratory that focuses on developing the necessary understanding of emerging electronic device technology reliability issues and the underlying technical foundation to provide current and future U.S. space programs with the necessary knowledge to qualify and insert deep sub-micron electronics device technologies.

This session brought government, industry, and academia together to forge a collaborative, virtual electronics

reliability team of experts who will ensure that space programs achieve mission success.

<http://www.aero.org/conferences/mrqw/>.

Recent Acquisitions

- Microsemi acquired Actel Corp., which became Microsemi Corp., SoC Products Group.
- Micross Components has acquired Semi-Dice UK Ltd.

NASA parts specialists recently supported DLA Land and Maritime Audits of:

Texas Instruments in Haji and Miho, Japan; Natel Engineering, Carson City, NV; Microsemi Corp., Danvers, MA; International Rectifier Corp., San Jose, CA; Aeroflex RAD, Colorado Springs, CO; Rochester Electronics, Newburyport, MA; Spectrum Microwave, Marlborough, MA; VPT Inc., Blacksburg, VA.

Upcoming Meetings

- Components for Military and Space Electronics CMSE February 7-10, 2011 Los Angeles, CA <http://cti-us.com/cmsemain.htm>
- JEDEC/G11/G12, February 14-17, 2011, Mission Palms, Tempe, Arizona

Contacts

NEPAG

<http://atpo.jpl.nasa.gov/nepag/index.html>

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Previous Issues:

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Other NASA centers:

<http://nepp.nasa.gov/index.cfm/12753>

Public Link (best with Internet Explorer): <http://trs-new.jpl.nasa.gov/dspace/handle/2014/41402>