

EEE Parts Bulletin

Electrical, Electronic, and Electromechanical

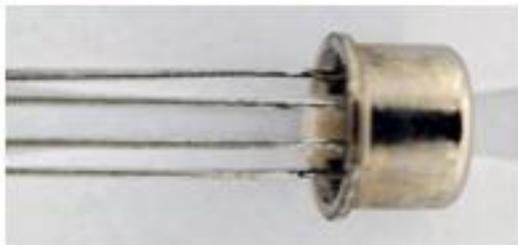
A periodic newsletter of the JPL/OSMS Assurance Technology Program Office (ATPO), NASA EEE Parts Assurance Group (NEPAG), and Section 514, of the Jet Propulsion Laboratory.

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Dangerous Counterfeit Electronics

Suspect counterfeit electronic parts are a clear and present danger to space hardware. The Semiconductor Industry Association estimates that counterfeit electronics cost the industry over \$200 billion each year. It is estimated that 10% of parts are actually counterfeit.

Counterfeiters clipped leads off commercial op-amps and added extensions (below) to make them appear legitimate, but the metal-can texture appeared duller.



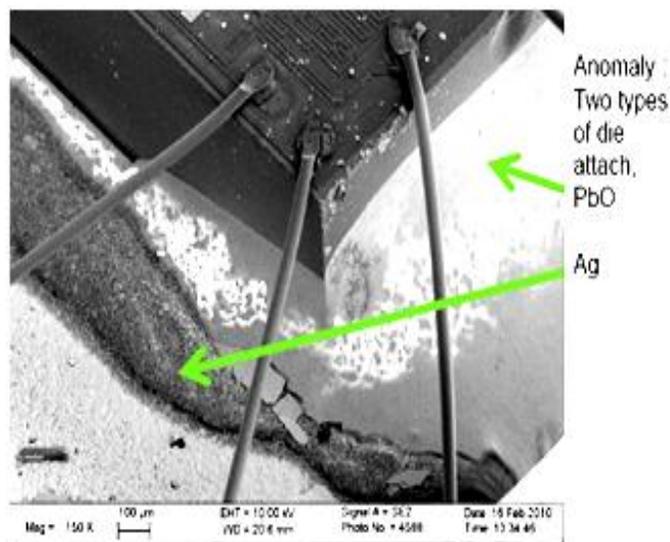
Op-amp with modified leads.

In another instance, an engineer noticed a clump of solder on the corner of the lid on a CD4094B quad NAND gate, and ordered hermeticity testing on 15 parts marked with a DSCC V level part number—all failed. When delidded, the wire bonds and die attach showed evidence of a re-used chip component (right). Counterfeiters are now mining used components to produce functional parts that they can market as unused space level parts, but they have severe workmanship and handling issues.

Passives are also being counterfeited. A well-known manufacturer of passive components recently reported counterfeiters are remarking tantalum capacitors with a sophisticated laser marking machine giving the parts the appearance of legitimacy. A recent instance of this involved commercial tantalum capacitors sold by a distributor who could not supply traceability documentation.

Parts analysis revealed multiple capacitor-element sizes embedded within a single housing. A Department of Commerce Bureau of Industry and Statistics survey shows while buying directly from the Original Component Manufacturer or his franchised distributor is the best defense against counterfeits, it is also important to

know that all portions of the supply chain have been infiltrated. The survey also points out visiting, auditing and knowing your supplier are best practices to combat suspected counterfeits. Contact Phil Zulueta 818-354-1566.



Vishay Cage Codes

Vishay's foil resistor division, [Vishay Precision Group](#), (CAGE Code 64C53) legally separated from Vishay Intertechnology (CAGE code 18612) in July 2010. Vishay Precision Group's Malvern, PA based sales and engineering office is CAGE Code 64C53. CAGE code S8016 is linked to Vishay's manufacturing facility in Israel where foil resistors are built. The CAGE code information has been necessarily updated to reflect Vishay's new legal entity, Vishay Advanced Technologies Ltd. The physical location and factory that has been producing foil resistors for 30 years remains the same - only the name has changed. DLA was informed of the changes and updated their QML listings accordingly.

Class K alternate element evaluation die sampling

JEDEC community discussions continue regarding alternatives to Class K die selection in cases where wafer traceability is not available to a hybrid manufacturer.

Class Y task group update: MIL-PRF-38535 (Xilinx Virtex-4/5 FPGAs and similar devices)

G12 voted on the Class Y concept at the May 2011 Baltimore meeting and gave their approval for DLA Land and Maritime to begin their Engineering Practice (EP) Study. Contact Shri Agarwal 818-354-5598.

Source Control Drawings (SCDs) vs. Standard Microcircuit Drawings (SMDs)

NEPAG works with DLA Land and Maritime, and manufacturers to ensure SMDs are self-contained, consistent and incorporate other details needed by the space community, e.g., de-rating, worse case analysis, and device specific design and application information. The current focus is on monolithic microcircuits.

SCDs must be avoided because they are costly to generate and maintain, and are counterproductive to the QML program. NEPAG and DLA encourage more prime-contractors and sub-contractors to become involved and make SMDs more complete and usable for procurement. Contact: Shri Agarwal 818-354-5598.

New QML rad-hard microcircuit source

DLA Land and Maritime recently granted approval to Linear Tech to pursue qualification for QML Class Q/V radiation hardened semiconductor products.

Product Change Notices (PCN) and GIDEPs

It is common practice for manufacturers to issue PCNs to their customers. NEPAG and DLA Land and Maritime encourage suppliers to issue GIDEPs as well. Several new GIDEPs were released as a result of that effort.

Production news

Tektronix Component Solutions announced their Orlando and Phoenix component test and screening service labs have merged into the legal entity, Maxtek Components Corp., DBA [Tektronix Component Solutions](#) resulting in new EIN # 93-1143421, DUNS # 84-705-0630, and Cage Code 06MJ2, for those two sites.

Acquisitions

- Texas Instruments will buy National Semiconductor.
- Microchip purchased Millennium Microtech Thailand.

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

Microtek Labs, Anaheim CA; USA MicroCraft, Inc. Anaheim CA; EMS Analytical Labs Inc., Orange, CA; Six Sigma, Milpitas CA; Glenair, Fullerton CA; White Electronic Designs, Phoenix, AZ; Everspin, Chandler AZ; State of the Art, Inc., State College, PA; SSDI, La Mirada CA., Delta VPT, Taiwan; Isolink, Inc., Taiwan; ST Microelectronics, Rennes, France; Crane-Interpoint, Redmond, WA.

Upcoming meetings

The [NEPP Electronics Technology Workshop](#) will be held Tues. – Thurs., June 28-30, at NASA's Goddard Space Flight Center in Greenbelt, MD.

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