Resources for Radiation Test Data

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Abstract: We present resources for aerospace engineers or spacecraft design engineers to use when searching for radiation test data.

Introduction

The performance of electronic systems is highly dependent on the quality of the semiconductor devices used. An increasing number of aerospace applications are being designed for harsh environments where the rapid changes in both technology and related radiation issues. As such, radiation test data is more important than ever. The European Space Components Coordination (ESCC) has published an overview of radiation test data resources.

Radiation testing is performed to establish the radiation hardness of electronic components. It is performed under specific conditions to mimic the radiation environment expected in space. The test data includes information on various types of radiation effects such as single-event burnout (SEB), single-event transients (SETs), single event functional interrupts (SEFI), and TID effects. Procuring equipment that will perform these tests is a considerable resource for the aerospace engineer or spacecraft design engineer.

Resources for Radiation Test Data

National Aeronautics and Space Administration (NASA) Goddard Space Flight Center (GSFC)

- Their website manages over 1.6 million S9C (Construction) and S9E (Electronics) parts, see http://radhome.gsfc.nasa.gov/. REAG test reports are also available on the NASA Jet Propulsion Laboratory (JPL) website.

- The Jet Propulsion Laboratory RAD Archive website is featured in Figure 10.

- The Jet Propulsion Laboratory RAD Archive website allows searching for radiation test data using keywords, there may still be the need to browse the search interface.

- The Jet Propulsion Laboratory RAD Archive website data interface is featured in Figure 11.

European Space Components Information Exchange System

- Their website is available at http://spacedata.esa.int/spacedata_combined.html. Search engines, such as Google, are also useful resources.

NAPA Global Radiation Effects and Analysis Branch (NAPA GREG A)

- The NAPA radhome website shows results of the database containing over 1,300 parts. The radhome search interface allows searching for specific results, including lot number, vendor, manufacturer, part type, date code, and TID and SEU data. The search interface is featured in Figure 3.

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Summarize

This paper presents a summary of resources for locating radiation test data. Knowing where to look is not enough; the resources must be comprehensive and useful. The authors of this paper recommend that lot testing be performed on any suspect or commercial device. Some websites require a login to access the radiation test data.

Acknowledgment

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Other Search Tools

Search engines such as Google can be useful in searching for radiation test data. However, even with specific search keywords, there may still be the need to browse the search interface. The authors of this paper recommend that lot testing be performed on any suspect or commercial device. Some websites require a login to access the radiation test data.

Cautions

This paper presents a summary of resources for locating radiation test data. Knowing where to look is not enough; the resources must be comprehensive and useful. The authors of this paper recommend that lot testing be performed on any suspect or commercial device. Some websites require a login to access the radiation test data.

References


[2] Defense Logistics Agency (DLA) Land and Maritime, the largest inventory Control Point (ICP) in the world. Their website manages over 1.6 million S9C (Construction) and S9E (Electronics) parts, see http://radhome.gsfc.nasa.gov/. REAG test reports are also available on the NASA Jet Propulsion Laboratory (JPL) website.

[3] European Space Components Information Exchange System, see http://spacedata.esa.int/spacedata_combined.html. Search engines, such as Google, are also useful resources.


[5] Selective alpha particles from 120 ns to 2 weeks, see http://radhome.gsfc.nasa.gov/. REAG test reports are also available on the NASA Jet Propulsion Laboratory (JPL) website.

[6] Selective alpha particles from 120 ns to 2 weeks, see http://radhome.gsfc.nasa.gov/. REAG test reports are also available on the NASA Jet Propulsion Laboratory (JPL) website.