Abstract: Total ionizing dose and displacement damage testing is performed to characterize and determine the suitability of candidate electronics for NASA spacecraft and program use.

Test Results and Discussion

As in our past workshop compendia of GSFC test results, each DUT has a detailed test report available online at http://radhome.gsfc.nasa.gov [3] describing in further detail, test method, TID conditions/parameters, test results, and failure attributes.

DUT2 showed degradation in the read speed after irradiation to 26 krad(Si). The read operation revealed 1 reallocated sector and 7 uncorrectable errors before manual stoppage of the read operation due to the slow speed. The drive attributes showed increase in sector reallocation at the failure doses, which could be due to bit corruption. Table V and VI show the SMART attributes for DUT1 and DUT2, respectively.

Summary of TEID 1009IDR Test Results

Parameter | Value | Note
--- | --- | ---
Bias Current | 0.3 mA | Normal
Input Offset Voltage | 0.01 V | Normal
Output Offset Voltage | 0.005 V | Normal
Power Supply Rejection Ratio | 45 dB | Normal
Total Ionizing Dose | 4 krad(Si) | Normal

Summary of SEI Test Results

Parameter | Value | Note
--- | --- | ---
Bias Current | 1 mA | Normal
Input Offset Voltage | 0.05 V | Normal
Output Offset Voltage | 0.005 V | Normal
Power Supply Rejection Ratio | 40 dB | Normal
Total Ionizing Dose | 10 krad(Si) | Normal

Figure 1. MAX367 test parts in the biased (left) and unbiased (right) condition.

Figure 3. Post-test analysis determined that Nichia NSPW500DS White LEDs exhibited a power output level shown in Figure 3. As in our past workshop compendia of GSFC test results, each DUT has a detailed test report available online at http://radhome.gsfc.nasa.gov [3] describing in further detail, test method, TID conditions/parameters, test results, and failure attributes.

Summary of SEI Test Results

Parameter | Value | Note
--- | --- | ---
Bias Current | 1 mA | Normal
Input Offset Voltage | 0.05 V | Normal
Output Offset Voltage | 0.005 V | Normal
Power Supply Rejection Ratio | 40 dB | Normal
Total Ionizing Dose | 10 krad(Si) | Normal

Figure 3. Post-test analysis determined that Nichia NSPW500DS White LEDs exhibited a power output level shown in Figure 3. As in our past workshop compendia of GSFC test results, each DUT has a detailed test report available online at http://radhome.gsfc.nasa.gov [3] describing in further detail, test method, TID conditions/parameters, test results, and failure attributes.

Summary of SEI Test Results

Parameter | Value | Note
--- | --- | ---
Bias Current | 1 mA | Normal
Input Offset Voltage | 0.05 V | Normal
Output Offset Voltage | 0.005 V | Normal
Power Supply Rejection Ratio | 40 dB | Normal
Total Ionizing Dose | 10 krad(Si) | Normal

Figure 3. Post-test analysis determined that Nichia NSPW500DS White LEDs exhibited a power output level shown in Figure 3. As in our past workshop compendia of GSFC test results, each DUT has a detailed test report available online at http://radhome.gsfc.nasa.gov [3] describing in further detail, test method, TID conditions/parameters, test results, and failure attributes.

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