

TOTAL DOSE RADIATION TEST REPORT

Part Type : EDS2508APTA

SDRAM 8Mb x 8 x 4 banks, 133MHz

Package : TSOP - 54

Manufacturer: Elpida Memory, Inc.

Report Reference : ESA_QCA0419T_C

Issue : 01

Date : November 30th 2004

ESA Call of order Number 12, Estec / Contract n° 13528/99/NL/MV

European Space Agency Contract Report

The work described in this report was done under ESA contract.
Responsibility for the contents resides in the author or organization that prepared it

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Hirex reference :	HRX/TID/0240	Issue : 01	Date :	November 30 th 2004
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HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

TOTAL DOSE RADIATION TEST REPORT

on

Elpida Memory, Inc. EDS2508APTA SDRAM 8Mb x 8 x 4 banks, 133MHz

TABLE OF CONTENTS

1	Abstract	4
2	Introduction	5
3	Applicable and Reference Documents	5
3.1	APPLICABLE DOCUMENTS	5
3.2	REFERENCE DOCUMENTS	5
4	Test Samples	5
5	Experimental Conditions	6
5.1	RADIATION SOURCE DOSE RATE AND ANNEALING	6
5.2	BIAS DURING DOSE EXPOSURES AND MEASUREMENTS CONDITIONS	6
5.2.1	Bias conditions	6
5.2.2	Electrical Measurements	8
6	Test Results	11
7	Conclusion	11
List of figures:		
	Figure 1 : Bias Conditions (Bias board) during Irradiation Exposures and Annealing	7
	Figure 2 : Bias Conditions principle during Irradiation Exposures and Annealing	7
	Figure 2 : Test program principle	8
List of Tables		
	Table 1: Measured electrical parameters	9
List of Appendices		
	Appendix 1 : Test Results Including Tables and Graphs	12

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

1 Abstract

Under ESA Call of order Number 12, Estec / Contract n° 13528/99/NL/MV covering "Radiation Evaluation of COTS Semiconductor Components", the radiation sensitivity to Total Ionizing Dose (TID) of three different SDRAM was evaluated. Results from these evaluations, are reported in individual TID reports. Below summary table lists manufacturer and evaluated types, and gives references to the various reports issued.

Manufacturer	Part Number	Description	TID Report
Elpida Memory, Inc.	EDS2508APTA	SDRAM 8Mb x 8 x 4 , 133MHz	ESA_QCA0419T_C
Samsung	K4S510432B	SDRAM 32Mb x 4 x 4 , 133MHz	ESA_QCA0420T_C
Micron Technology Inc.	MT48LC16M8A2	SDRAM 4 Mb x 8 x 4 banks	ESA_QCA0421T_C

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

2 Introduction

A total dose radiation evaluation test of the Elpida Memory, Inc. EDS2508APTA SDRAM 8Mb x 8 x 4 banks, 133MHz has been performed with an accumulated dose of about 100 Krad(Si) ,at a dose rate of 200 rad(Si)/hour in response to ESA contract: Call of order Number 12, Estec / Contract n° 13528/99/NL/MV.

The purpose of this test was to evaluate total dose withstanding of this component, to investigate its suitability for being used in space applications and to evaluate auto-refresh and self-refresh modes of bias operation. This test was conducted on samples procured by ESA/ESTEC TEC-QCA.

Test has been performed in accordance with Hirex Engineering Proposal reference: HRX/PRO/0289 Issue 1.

A complete set of electrical measurements together with graphical representation of measured parameters with respect to total dose received, are provided for all samples.

3 Applicable and Reference Documents

3.1 Applicable Documents

- Hirex proposal: HRX/PRO/0289 Issue 1.
- ELPIDA EDS2508APTA datasheet dated February 2003.
- ESA/SCC Basic Specification N° 22900 Issue 4 – Total dose steady-State Irradiation Test Method.

3.2 Reference Documents

- NA

4 Test Samples

10 samples of the EDS2508APTA device were tested (10 + 1 control sample). Parts have been biased according to the allocation table below.

Serial number	Allocation
64 Ref	Control
65	Auto refresh mode
66	Auto refresh mode
67	Auto refresh mode
68	Auto refresh mode
69	Auto refresh mode
70	Self refresh mode
71	Self refresh mode
72	Self refresh mode
73	Self refresh mode
74	Self refresh mode

Identification of the EDS2508APTA is given below:

Part Number:	EDS2508APTA	Mask Set:	NA
Project:	-	Diffusion Lot:	NA
Lot Number:	-	Marking:	ELPIDA SINGAPORE DS2508APTA-7A 0229PE007000
Date Code:	0229	Project:	NA

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

5 Experimental Conditions

5.1 Radiation Source Dose Rate and Annealing

The dose exposures were performed at CERT-ONERA. In this irradiation facility, a Cobalt 60 source is used with the possibility to vary the dose rate by simply adjusting the distance to the source.

The irradiation conditions used for this test are provided in the following table:

Irradiation Steps krads	Dose rate krads/h	Annealing steps hours	Temperature °C
0			25
9	0.2		25
18	0.2		25
32	0.2		25
51	0.2		25
69	0.2		25
98	0.2		25
		24	25
		168	100

5.2 Bias during Dose Exposures and Measurements conditions

5.2.1 Bias conditions

During exposures dedicated test boards were used mounted on a special board-holder made for irradiation. The test boards allowed two biasing conditions of the devices in accordance with electrical circuits provided in Figure 1.

These conditions correspond to functioning of the components in self refresh and auto refresh mode.

In order to set the devices in these modes, an emulation board was used.

This emulation board was interfaced to the bias board at each exposure step and ensured programming of irradiated samples in the proper mode, thanks to the use of CPLD devices.

To ensure functioning of samples in auto-refresh mode, one emulation board per device is maintained connected to the bias board during exposure. Each emulation board being protected by lead during exposure.

To ensure functioning of samples in self-refresh mode, the emulation board configures each SDRAM, then it is removed and samples are autonomous.

During annealing steps, the same stress conditions were applied at 25°C and 100°C temperatures.

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

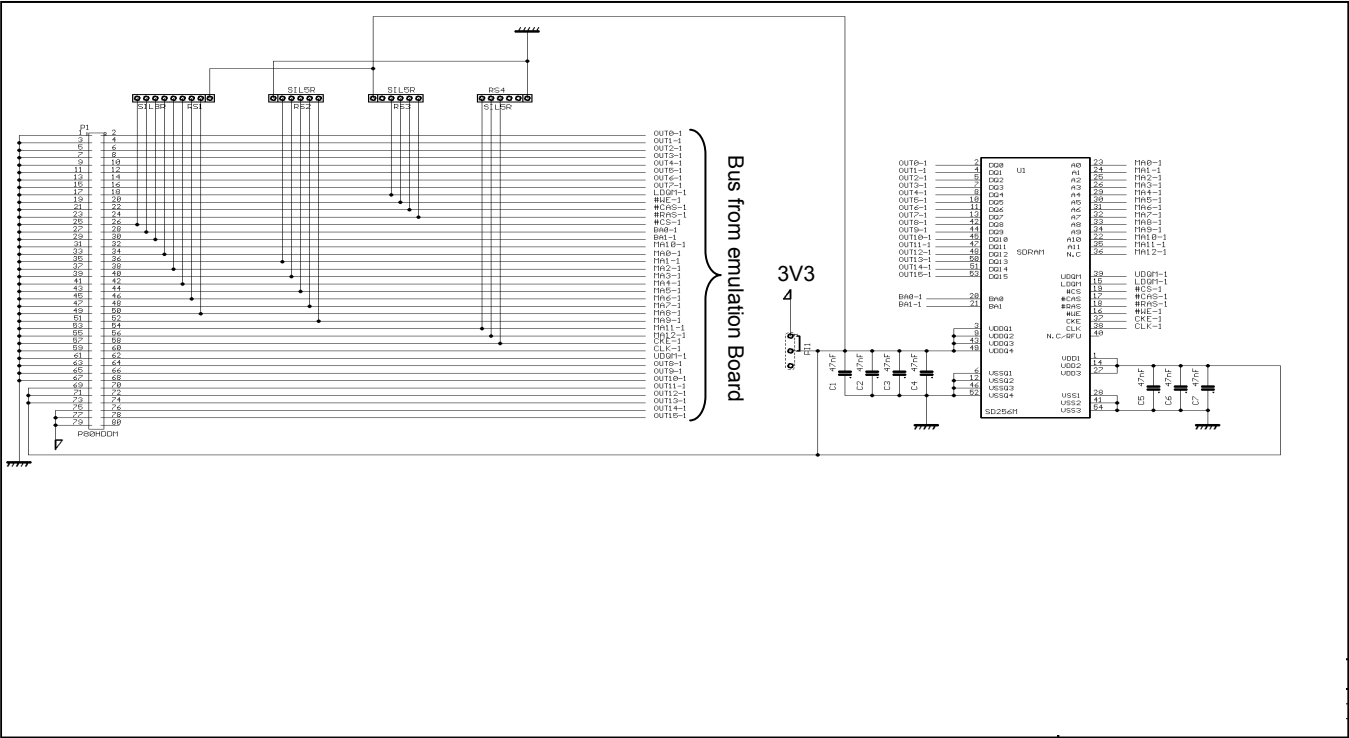


Figure 1 : Bias Conditions (Bias board) during Irradiation Exposures and Annealing

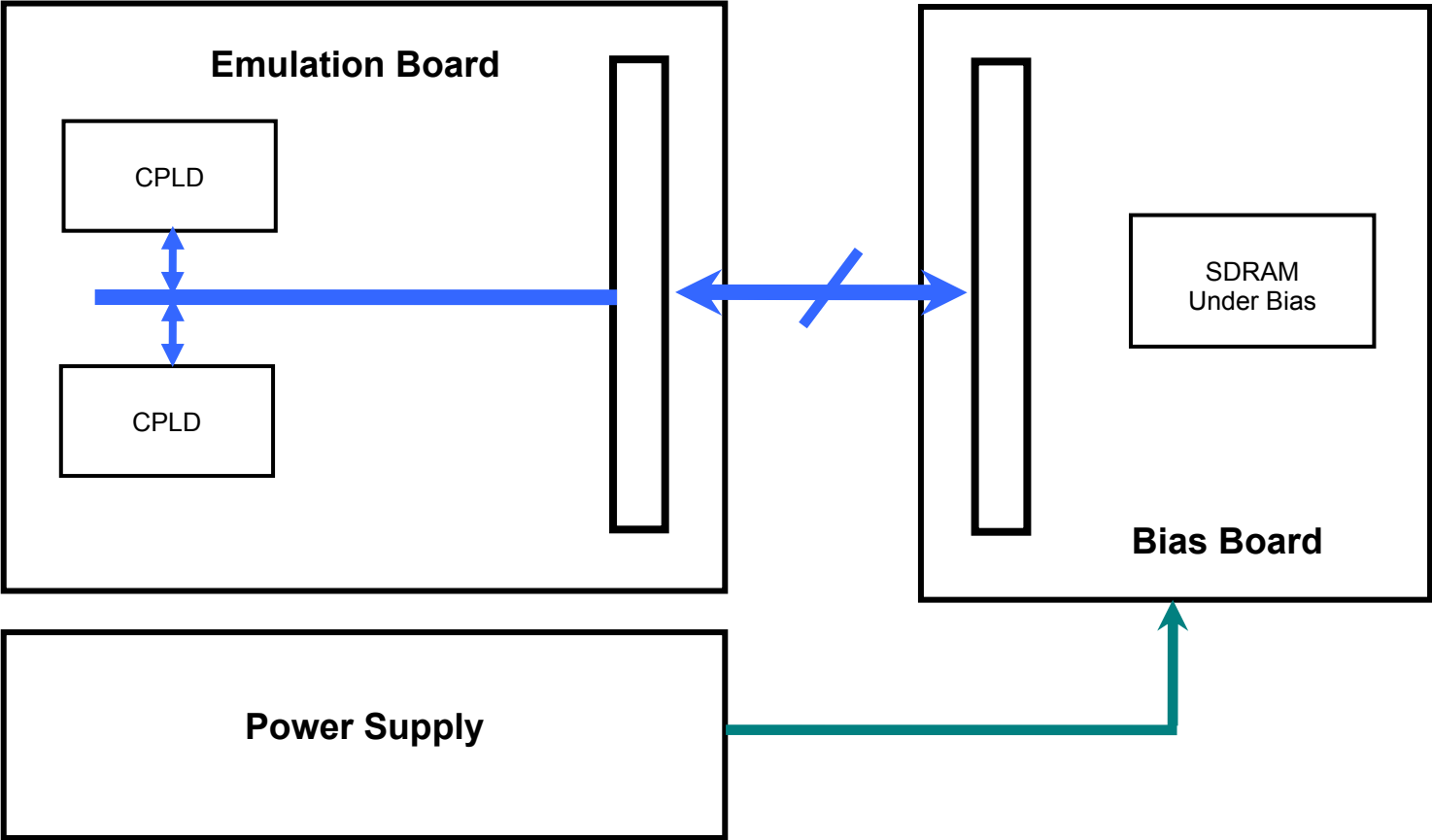


Figure 2 : Bias Conditions principle during Irradiation Exposures and Annealing

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

5.2.2 Electrical Measurements

Electrical parameters test program principle for EDS2508APTA is provided in Figure 3.

The test Setup for this SDRAM includes an IMS ATS Test Station, a SUN workstation, and a dedicated test fixture board.

A special memory test module was used for algorithmic address generation. An ATS data card is used to control the ATS memory test card that generates all required addresses for the memory under test. Other ATS data cards are used for the transfer of data and control signals between the ATS test station and the DUT.

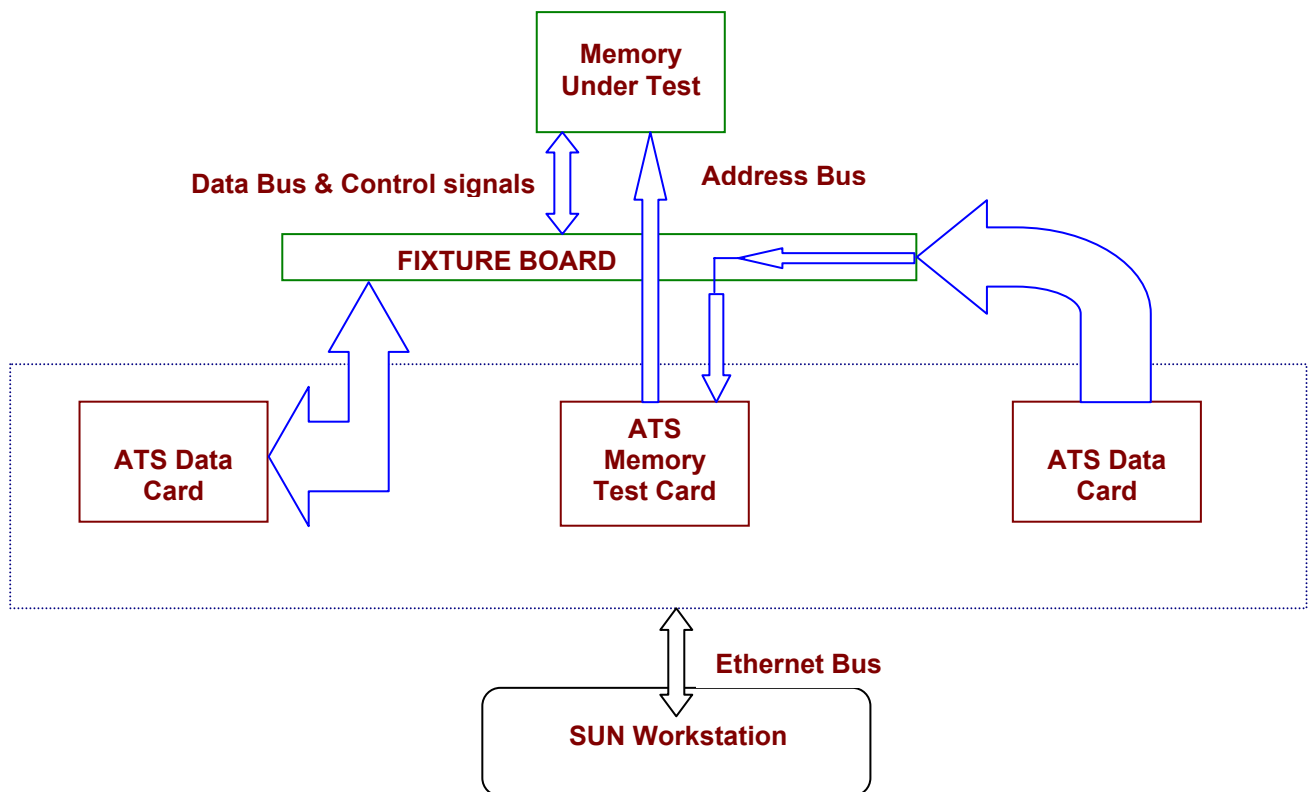


Figure 3 : Test program principle

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Electrical parameters test conditions and limits used for performing this test are given in the following table.

Table 1: Measured electrical parameters

5.2.2.1 DC Tests

Tested Parameters					
Parameter	Symbol	Test conditions (Note 1)	Min.	Max.	Unite
Input High Voltage : Logic 1	V_{IH}	guaranteed during functional test	2	3.6	V
Input Low Voltage : Logic 0	V_{IL}	guaranteed during functional test	-0.3	0.8	V
Operating Current : Active Mode	I_{CC1}	Burst length = 2, $t_{RC} \geq t_{RCMin}$	-	130	mA
Standby Current : Active Mode	I_{CC3N}	$CKE = /CS = V_{IH} (min)$, $t_{CK} = t_{CK} (min)$	-	30	mA
Operating Current : Burst Mode	I_{CC4}	$t_{CK} = t_{CK} (min)$, Burst length = 4	-	135	mA
Auto Refresh Current	I_{CC5}	$t_{RC} = t_{RCMin}$	-	250	mA
Auto Refresh Current	I_{CC5_b}	$T_{RC} = 15.625\mu s$	-	-	mA
Self Refresh Current	I_{CC6}	-	-	3	mA
Output High Voltage : Logic 1	V_{OH}	$I_{OH} = -4mA$	2.4	-	V
Output Low Voltage : Logic 0	V_{OL}	$I_{OL} = 4mA$	-	0.4	V
Input High Leakage Current	I_{IH}	-	-1	1	uA
Input Low Leakage Current	I_{IL}	-	-1	1	uA

Note1 : $V_{dd} = V_{ddQ} = 3.3V$. $V_{IL} = 0V$ et $V_{IH} = 3.3V$.

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

5.2.2.2 AC Tests

Tested Parameters					
Parameter	Symbol	Test conditions (Note 2)	Min.	Max.	Unit
Access Time from CLK	$t_{AC(3)}$	CAS Latency = 3	-	5.4	ns
Access Time from CLK	$t_{AC(2)}$	CAS Latency = 2	-	5.4	ns
Input Address Hold Time	t_{hi} Address		-	800	ps
Input Address Setup Time	t_{si} Address		-	1.5	ns
Input CS*, RAS*, CAS*, WE*, DQM Hold Time	t_{hi}		-	800	ps
Input CS*, RAS*, CAS*, WE*, DQM Setup Time	t_{si}		-	1.5	ns
Input Data Hold Time	t_{hi} Data		-	800	ps
Input Data Setup Time	t_{si} Data		-	1.5	ns
Data Out Hold Time	T_{oh}		3	-	ns
Active to Active Command Period	trc		-	60	ns
Precharge to active Command Period	t_{RP}		-	15	ns
Active command to column command	t_{RCD}		-	15	ns
Active "A" to Active "B" command Period	t_{RRD}		-	15	ns
Write Recovery or data-in to precharge lead Time	t_{DPL}		-	15	ns

Note : $V_{IL} = 0.4V$ et $V_{IH} = 2.4V$. $I_{OH} = -2mA$, $I_{OL} = 2mA$

Table 1: Measured electrical parameters (continued)

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

6 Test Results

Test results including tables and graphics are provided in Appendix 1 for each measured parameter.

The parameters trc, twr, trcd, trp, trrd represent values measured within the limit of the tester. The actual values are lower or equal to the indicated values.

7 Conclusion

A Total Ionizing Dose evaluation test was carried out by Hirex Engineering under ESA contract on the Elpida Memory, Inc. EDS2508APTA SDRAM 8Mb x 8 x 4 banks, 133MHz in TSOP - 54 package.

10 samples plus one control sample were used during testing. They were exposed to radiation using a dose rate of 200 rad(Si)/hour at room temperature.

All samples during irradiation exposures and annealing steps did not exhibit any failure.

In particular none noticeable differences were recorded when considering the two different bias conditions used during exposures and annealing.

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Appendix 1 : Test Results Including Tables and Graphs

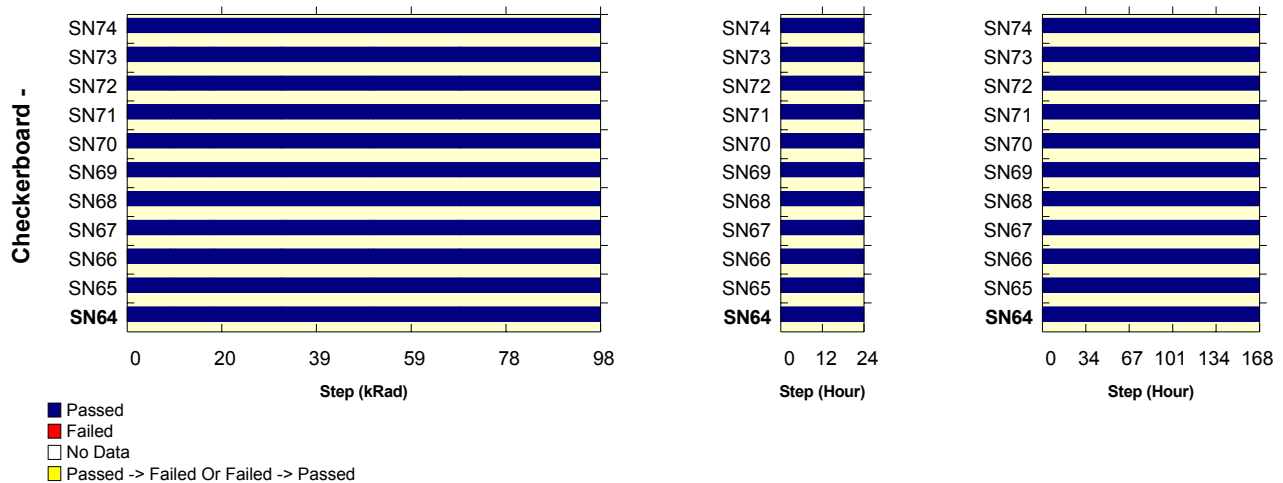
HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

Parameter : Functional : Checkerboard

Unit :

No spec limit specified.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN65	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN66	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN67	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN68	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN69	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN70	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN71	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN72	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN73	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN74	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

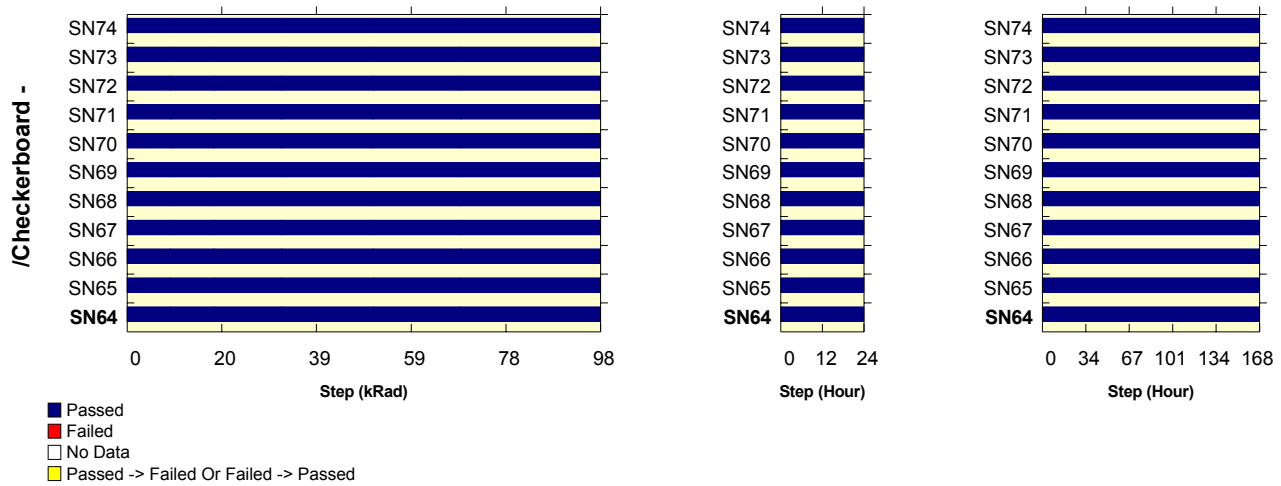
HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

Parameter : Functional : /Checkerboard

Unit :

No spec limit specified.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN65	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN66	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN67	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN68	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN69	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN70	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN71	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN72	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN73	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN74	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

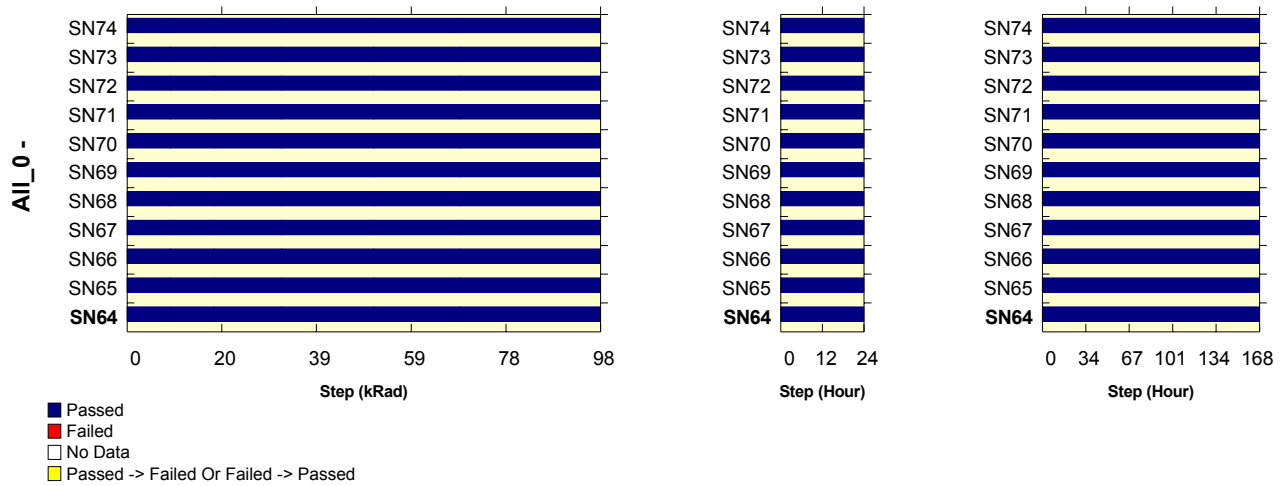
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Functional : All_0

Unit :
No spec limit specified.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN65	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN66	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN67	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN68	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN69	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN70	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN71	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN72	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN73	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN74	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

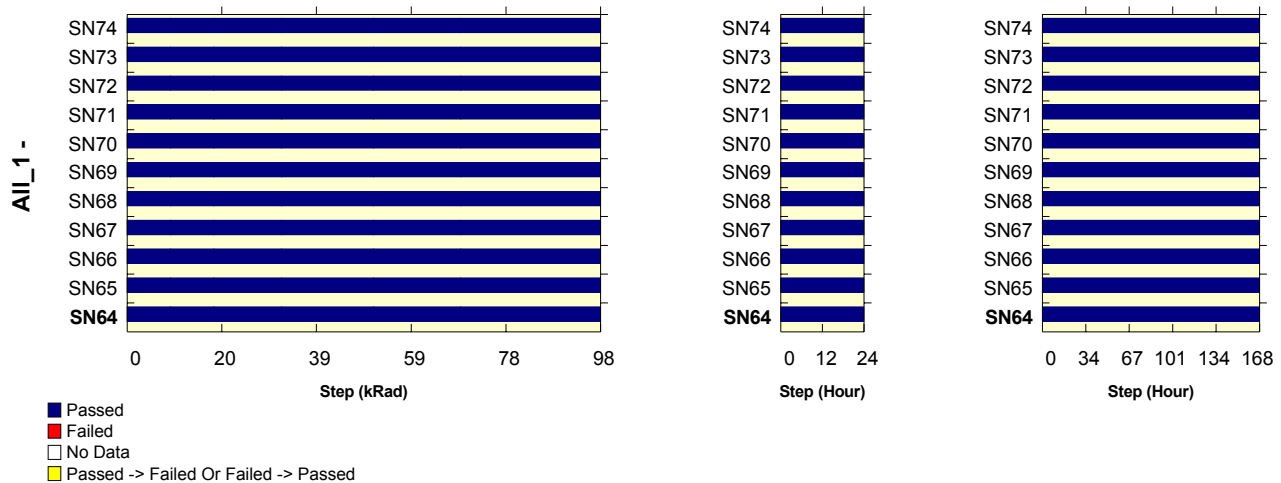
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Functional : All_1

Unit :
No spec limit specified.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN65	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN66	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN67	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN68	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN69	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN70	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN71	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN72	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN73	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED
SN74	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	PASSED	PASSED
SN65	PASSED	PASSED
SN66	PASSED	PASSED
SN67	PASSED	PASSED
SN68	PASSED	PASSED
SN69	PASSED	PASSED
SN70	PASSED	PASSED
SN71	PASSED	PASSED
SN72	PASSED	PASSED
SN73	PASSED	PASSED
SN74	PASSED	PASSED

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

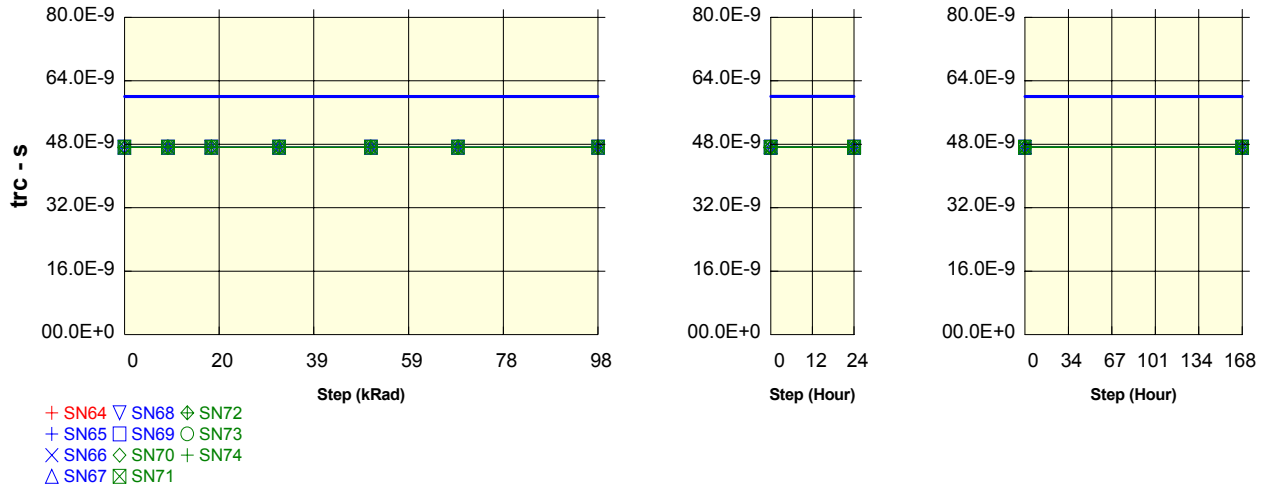
Test conditions : Tid

Parameter : Active to Active Command Period : trc

Unit : s

Spec Limit Max : 60.0E-9

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN65	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN66	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN67	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN68	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN69	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN70	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN71	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN72	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN73	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
SN74	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
Statistics							
Min	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
Max	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
Mean	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9	47.3E-9
Sigma	00.0E+0	00.0E+0	00.0E+0	00.0E+0	00.0E+0	00.0E+0	00.0E+0

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	47.3E-9	47.3E-9
SN65	47.3E-9	47.3E-9
SN66	47.3E-9	47.3E-9
SN67	47.3E-9	47.3E-9
SN68	47.3E-9	47.3E-9
SN69	47.3E-9	47.3E-9
SN70	47.3E-9	47.3E-9
SN71	47.3E-9	47.3E-9
SN72	47.3E-9	47.3E-9
SN73	47.3E-9	47.3E-9
SN74	47.3E-9	47.3E-9
Statistics		
Min	47.3E-9	47.3E-9
Max	47.3E-9	47.3E-9
Mean	47.3E-9	47.3E-9
Sigma	00.0E+0	00.0E+0

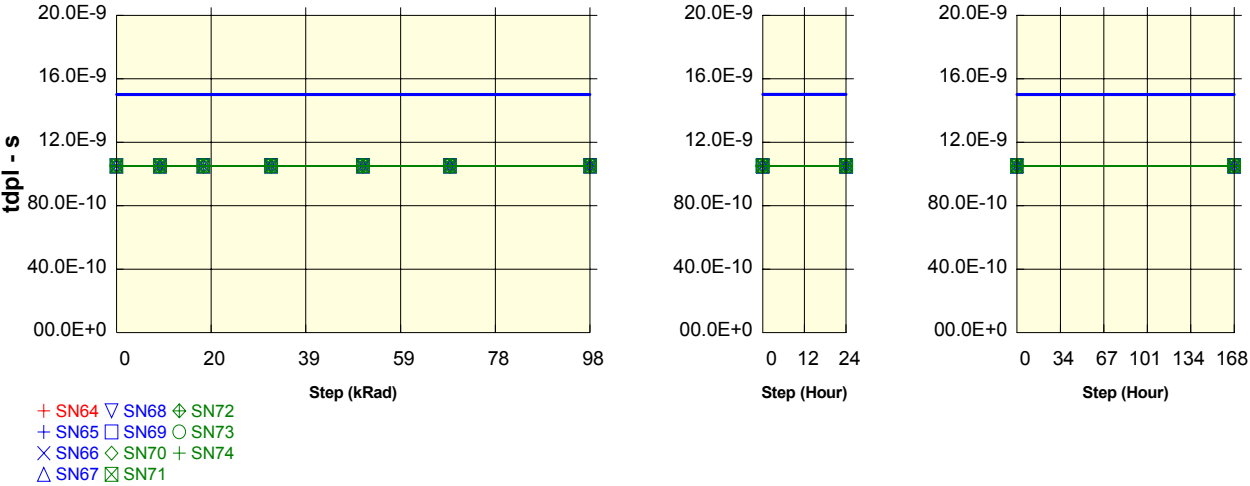
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	47.3E-9	47.3E-9
SN65	47.3E-9	47.3E-9
SN66	47.3E-9	47.3E-9
SN67	47.3E-9	47.3E-9
SN68	47.3E-9	47.3E-9
SN69	47.3E-9	47.3E-9
SN70	47.3E-9	47.3E-9
SN71	47.3E-9	47.3E-9
SN72	47.3E-9	47.3E-9
SN73	47.3E-9	47.3E-9
SN74	47.3E-9	47.3E-9
Statistics		
Min	47.3E-9	47.3E-9
Max	47.3E-9	47.3E-9
Mean	47.3E-9	47.3E-9
Sigma	00.0E+0	00.0E+0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Write Recovery Or Data In Precharge Lead Time : tdpl

Unit : s
 Spec Limit Max : 15.0E-9
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Statistics							
Min	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

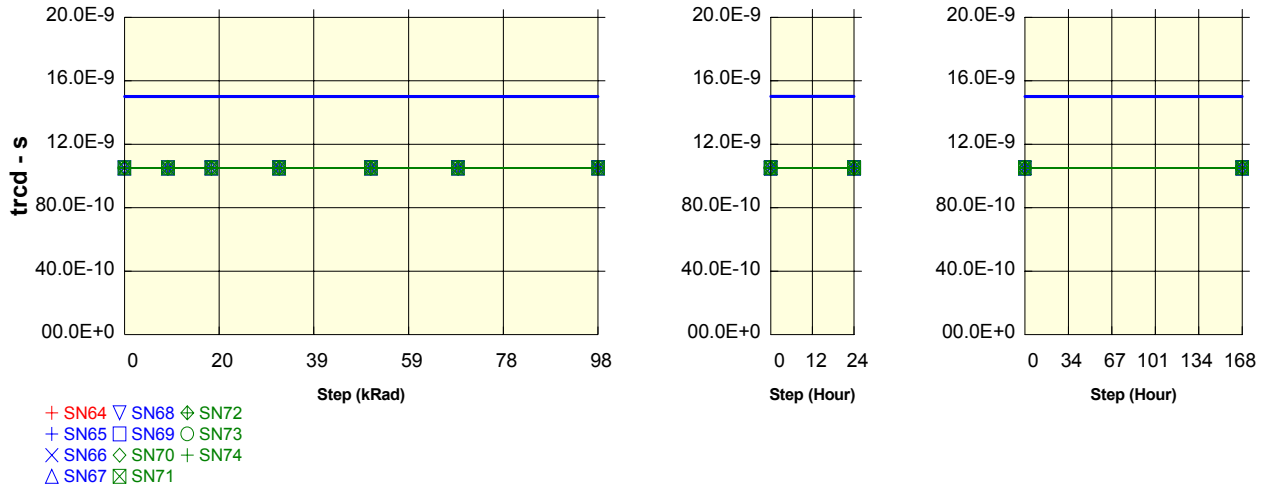
Test conditions : Tid

Parameter : Active Command To Column Command : trcd

Unit : s

Spec Limit Max : 15.0E-9

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Statistics							
Min	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

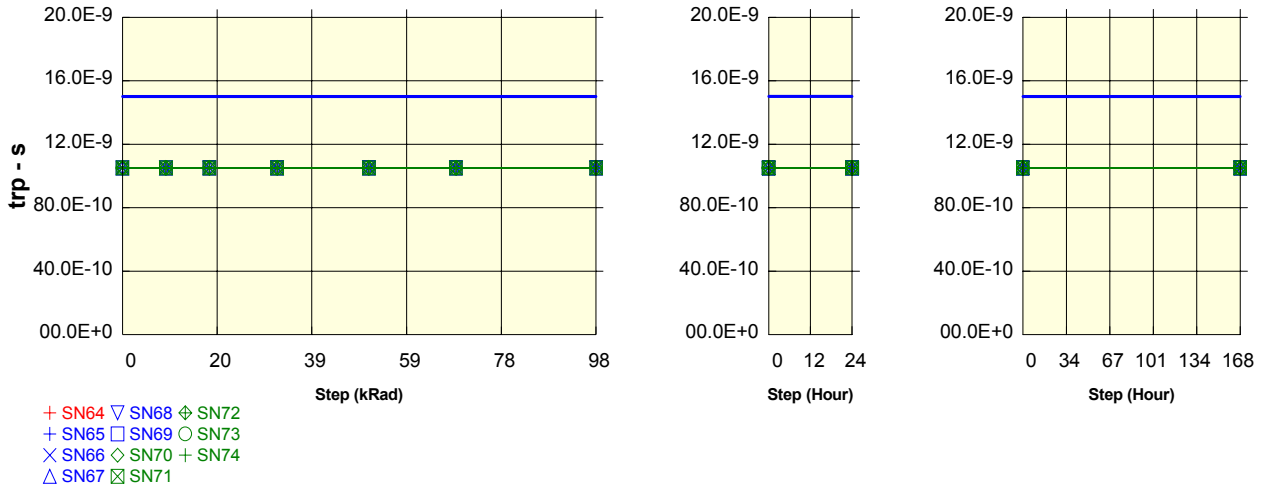
Test conditions : Tid

Parameter : Precharge To Active Command Period : trp

Unit : s

Spec Limit Max : 15.0E-9

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Statistics							
Min	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

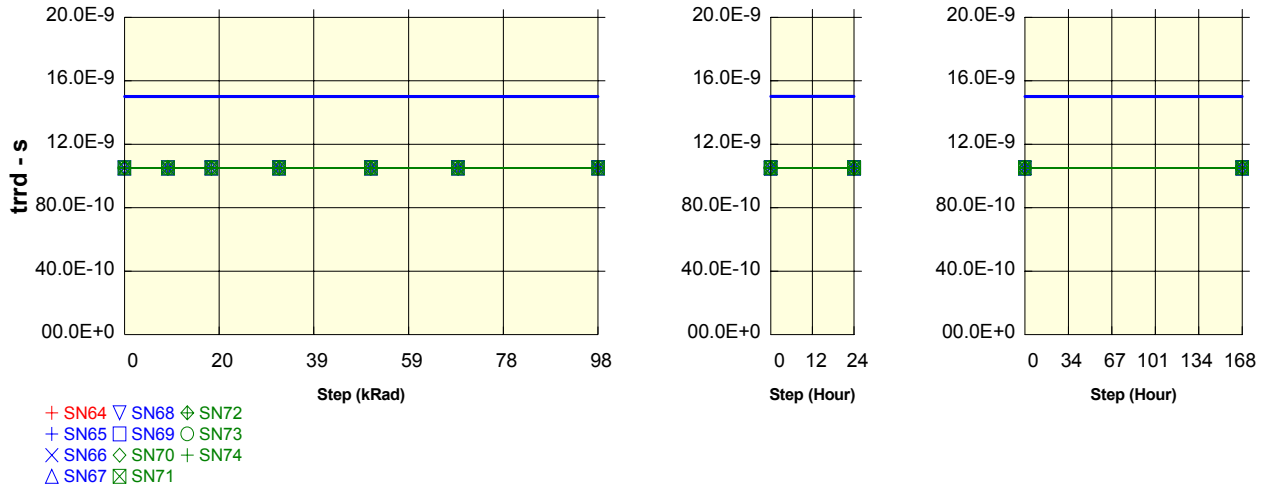
Test conditions : Tid

Parameter : Active Bank "A" to Active Bank "B" Command Period : trrd

Unit : s

Spec Limit Max : 15.0E-9

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Statistics							
Min	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17	20.9E-17

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	10.5E-9	10.5E-9
SN65	10.5E-9	10.5E-9
SN66	10.5E-9	10.5E-9
SN67	10.5E-9	10.5E-9
SN68	10.5E-9	10.5E-9
SN69	10.5E-9	10.5E-9
SN70	10.5E-9	10.5E-9
SN71	10.5E-9	10.5E-9
SN72	10.5E-9	10.5E-9
SN73	10.5E-9	10.5E-9
SN74	10.5E-9	10.5E-9
Statistics		
Min	10.5E-9	10.5E-9
Max	10.5E-9	10.5E-9
Mean	10.5E-9	10.5E-9
Sigma	20.9E-17	20.9E-17

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

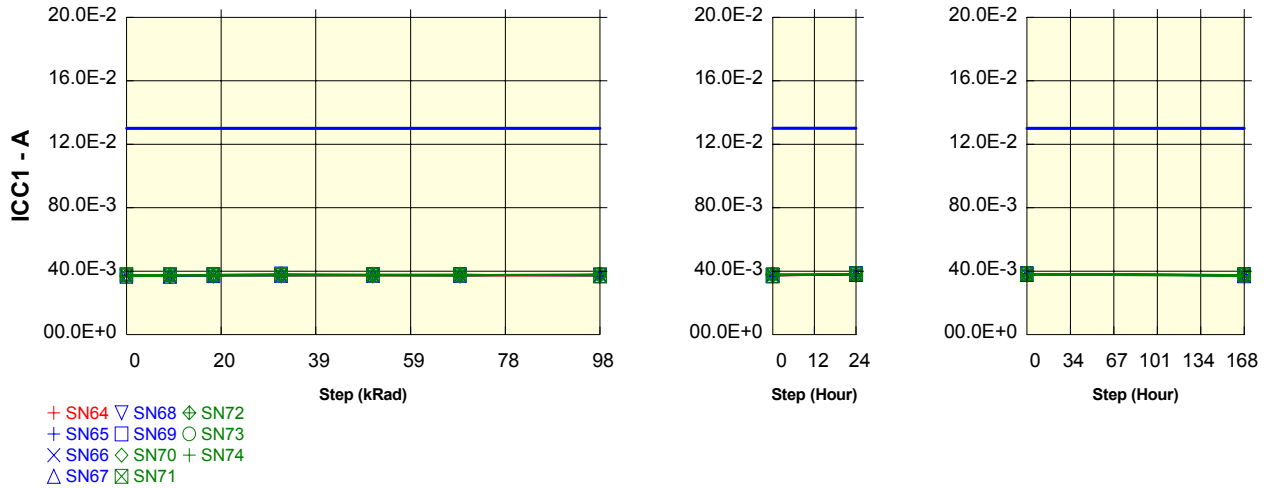
Parameter : Operating Current : ICC1

Burst length = 2. tRC = tRCMin . IO = 0 mA

Unit : A

Spec Limit Max : 13.0E-2

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	37.0E-3	36.7E-3	37.1E-3	37.1E-3	37.1E-3	37.0E-3	36.9E-3
SN65	37.3E-3	37.1E-3	37.5E-3	37.5E-3	37.6E-3	37.6E-3	37.6E-3
SN66	37.1E-3	37.1E-3	37.2E-3	37.3E-3	37.4E-3	37.3E-3	37.4E-3
SN67	36.7E-3	36.7E-3	37.2E-3	37.4E-3	37.3E-3	37.3E-3	37.1E-3
SN68	36.9E-3	37.1E-3	37.1E-3	37.1E-3	37.3E-3	37.1E-3	37.5E-3
SN69	37.7E-3	37.7E-3	38.0E-3	38.2E-3	38.0E-3	38.0E-3	37.4E-3
SN70	37.4E-3	37.5E-3	37.8E-3	37.9E-3	38.0E-3	38.0E-3	37.3E-3
SN71	37.6E-3	37.7E-3	37.8E-3	37.7E-3	37.8E-3	37.8E-3	37.1E-3
SN72	36.7E-3	37.1E-3	37.0E-3	37.4E-3	37.2E-3	37.1E-3	38.0E-3
SN73	37.7E-3	37.5E-3	38.0E-3	38.2E-3	38.0E-3	37.9E-3	38.1E-3
SN74	36.7E-3	36.9E-3	37.0E-3	37.0E-3	37.0E-3	37.1E-3	37.8E-3
Statistics							
Min	36.7E-3	36.7E-3	37.0E-3	37.0E-3	37.0E-3	37.1E-3	37.1E-3
Max	37.7E-3	37.7E-3	38.0E-3	38.2E-3	38.0E-3	38.0E-3	38.1E-3
Mean	37.2E-3	37.2E-3	37.5E-3	37.6E-3	37.6E-3	37.5E-3	37.5E-3
Sigma	38.9E-5	35.9E-5	40.5E-5	42.7E-5	37.2E-5	37.8E-5	36.4E-5

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	36.9E-3	37.8E-3
SN65	37.6E-3	38.1E-3
SN66	37.4E-3	37.9E-3
SN67	37.1E-3	37.9E-3
SN68	37.5E-3	37.7E-3
SN69	37.4E-3	38.6E-3
SN70	37.3E-3	38.6E-3
SN71	37.1E-3	38.3E-3
SN72	38.0E-3	37.8E-3
SN73	38.1E-3	38.5E-3
SN74	37.8E-3	37.5E-3
Statistics		
Min	37.1E-3	37.5E-3
Max	38.1E-3	38.6E-3
Mean	37.5E-3	38.1E-3
Sigma	36.4E-5	38.3E-5

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	37.8E-3	37.2E-3
SN65	38.1E-3	37.4E-3
SN66	37.9E-3	37.0E-3
SN67	37.9E-3	37.1E-3
SN68	37.7E-3	37.0E-3
SN69	38.6E-3	37.9E-3
SN70	38.6E-3	37.9E-3
SN71	38.3E-3	37.7E-3
SN72	37.8E-3	37.1E-3
SN73	38.5E-3	37.8E-3
SN74	37.5E-3	36.8E-3
Statistics		
Min	37.5E-3	36.8E-3
Max	38.6E-3	37.9E-3
Mean	38.1E-3	37.4E-3
Sigma	38.3E-5	41.2E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

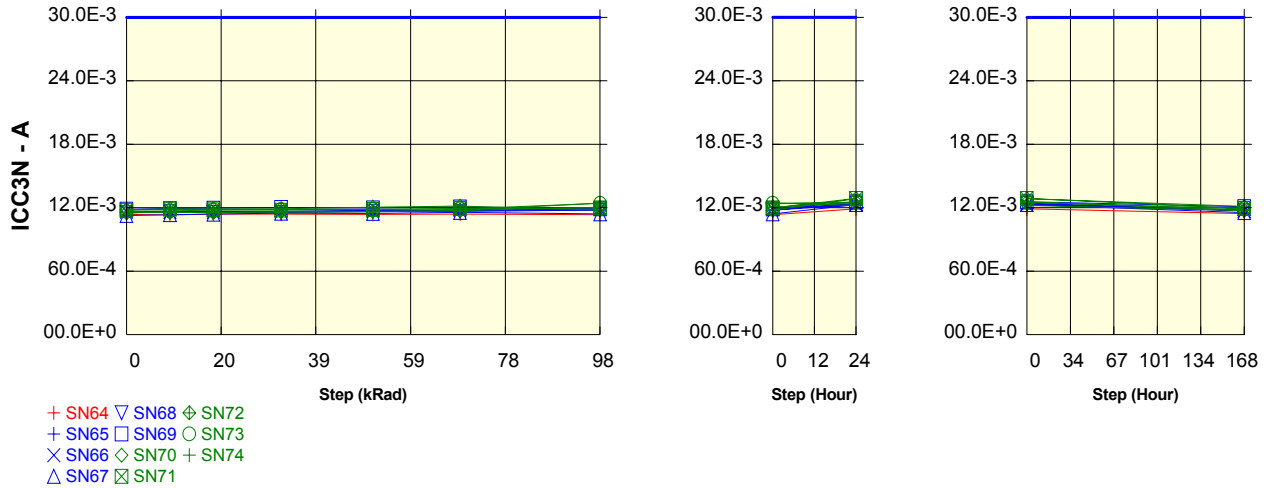
Parameter : Standby Current : Active Mode : ICC3N

CKE = /CS = VIH (min). tCC = 10ns. Input signals are changed one time during 20ns

Unit : A

Spec Limit Max : 30.0E-3

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	11.4E-3	11.3E-3	11.4E-3	11.4E-3	11.4E-3	11.4E-3	11.3E-3
SN65	11.6E-3	11.6E-3	11.6E-3	11.6E-3	11.7E-3	11.8E-3	11.8E-3
SN66	11.6E-3	11.6E-3	11.6E-3	11.7E-3	11.7E-3	11.8E-3	11.9E-3
SN67	11.3E-3	11.4E-3	11.4E-3	11.5E-3	11.5E-3	11.6E-3	11.4E-3
SN68	11.5E-3	11.6E-3	11.6E-3	11.5E-3	11.7E-3	11.7E-3	11.8E-3
SN69	11.9E-3	11.9E-3	12.0E-3	12.0E-3	12.0E-3	12.1E-3	11.9E-3
SN70	11.8E-3	11.9E-3	11.9E-3	11.9E-3	12.1E-3	12.2E-3	11.8E-3
SN71	11.8E-3	11.9E-3	11.8E-3	11.8E-3	11.8E-3	11.9E-3	12.0E-3
SN72	11.5E-3	11.6E-3	11.5E-3	11.6E-3	11.7E-3	11.7E-3	12.1E-3
SN73	11.6E-3	11.7E-3	11.8E-3	11.8E-3	11.8E-3	11.9E-3	12.4E-3
SN74	11.5E-3	11.6E-3	11.6E-3	11.6E-3	11.6E-3	11.7E-3	12.4E-3
Statistics							
Min	11.3E-3	11.4E-3	11.4E-3	11.5E-3	11.5E-3	11.6E-3	11.4E-3
Max	11.9E-3	11.9E-3	12.0E-3	12.0E-3	12.1E-3	12.2E-3	12.4E-3
Mean	11.6E-3	11.7E-3	11.7E-3	11.7E-3	11.8E-3	11.8E-3	11.9E-3
Sigma	17.5E-5	17.8E-5	17.4E-5	17.2E-5	17.5E-5	18.5E-5	30.8E-5

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	11.3E-3	11.9E-3
SN65	11.8E-3	12.3E-3
SN66	11.9E-3	12.3E-3
SN67	11.4E-3	12.3E-3
SN68	11.8E-3	12.4E-3
SN69	11.9E-3	12.6E-3
SN70	11.8E-3	12.8E-3
SN71	12.0E-3	12.9E-3
SN72	12.1E-3	12.5E-3
SN73	12.4E-3	12.5E-3
SN74	12.4E-3	12.2E-3
Statistics		
Min	11.4E-3	12.2E-3
Max	12.4E-3	12.9E-3
Mean	11.9E-3	12.5E-3
Sigma	30.8E-5	23.2E-5

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	11.9E-3	11.4E-3
SN65	12.3E-3	11.8E-3
SN66	12.3E-3	11.7E-3
SN67	12.3E-3	11.5E-3
SN68	12.4E-3	11.7E-3
SN69	12.6E-3	12.1E-3
SN70	12.8E-3	12.1E-3
SN71	12.9E-3	11.9E-3
SN72	12.5E-3	11.7E-3
SN73	12.5E-3	11.9E-3
SN74	12.2E-3	11.7E-3
Statistics		
Min	12.2E-3	11.5E-3
Max	12.9E-3	12.1E-3
Mean	12.5E-3	11.8E-3
Sigma	23.2E-5	18.8E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

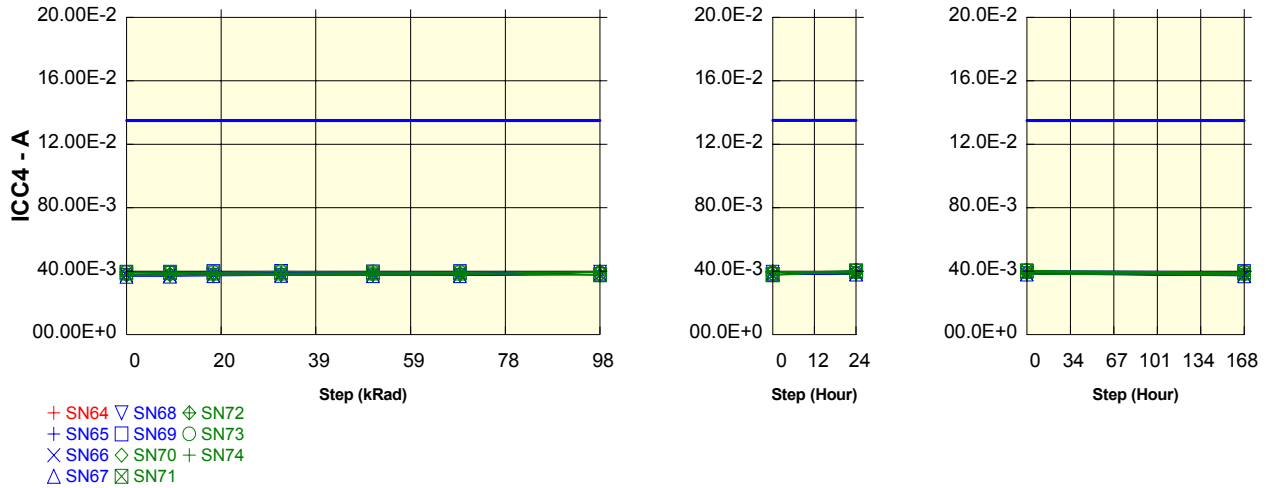
Test conditions : Tid

Parameter : Operating Current : Burst Mode : ICC4
IO = 0 mA. Page Burst. 4 banks active. tCCD = 2CLKs

Unit : A

Spec Limit Max : 13.50E-2

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	37.93E-3	36.99E-3	38.00E-3	38.06E-3	37.89E-3	37.75E-3	37.59E-3
SN65	39.15E-3	39.05E-3	39.27E-3	39.26E-3	39.39E-3	39.45E-3	39.41E-3
SN66	37.58E-3	37.47E-3	37.57E-3	37.65E-3	37.84E-3	37.76E-3	37.93E-3
SN67	36.73E-3	36.81E-3	37.14E-3	37.33E-3	37.22E-3	37.28E-3	38.13E-3
SN68	37.37E-3	38.53E-3	37.42E-3	37.37E-3	37.65E-3	37.43E-3	39.41E-3
SN69	39.44E-3	39.37E-3	39.61E-3	39.83E-3	39.58E-3	39.74E-3	37.95E-3
SN70	38.10E-3	38.15E-3	38.16E-3	38.33E-3	38.61E-3	38.65E-3	37.50E-3
SN71	38.82E-3	38.93E-3	38.89E-3	38.86E-3	38.87E-3	38.92E-3	37.76E-3
SN72	37.66E-3	37.78E-3	37.64E-3	38.05E-3	37.88E-3	37.85E-3	39.72E-3
SN73	39.14E-3	39.09E-3	39.42E-3	39.82E-3	39.53E-3	39.51E-3	38.99E-3
SN74	37.29E-3	37.28E-3	37.33E-3	37.42E-3	37.39E-3	37.55E-3	39.50E-3
Statistics							
Min	36.73E-3	36.81E-3	37.14E-3	37.33E-3	37.22E-3	37.28E-3	37.50E-3
Max	39.44E-3	39.37E-3	39.61E-3	39.83E-3	39.58E-3	39.74E-3	39.72E-3
Mean	38.13E-3	38.25E-3	38.25E-3	38.39E-3	38.40E-3	38.42E-3	38.63E-3
Sigma	94.35E-5	88.20E-5	95.87E-5	99.36E-5	91.01E-5	95.00E-5	84.89E-5

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	37.6E-3	38.7E-3
SN65	39.4E-3	40.0E-3
SN66	37.9E-3	38.4E-3
SN67	38.1E-3	38.1E-3
SN68	39.4E-3	38.3E-3
SN69	38.0E-3	40.2E-3
SN70	37.5E-3	39.5E-3
SN71	37.8E-3	40.0E-3
SN72	39.7E-3	39.1E-3
SN73	39.0E-3	40.3E-3
SN74	39.5E-3	38.1E-3
Statistics		
Min	37.5E-3	38.1E-3
Max	39.7E-3	40.3E-3
Mean	38.6E-3	39.2E-3
Sigma	84.9E-5	89.5E-5

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	38.7E-3	38.2E-3
SN65	40.0E-3	39.3E-3
SN66	38.4E-3	37.5E-3
SN67	38.1E-3	37.1E-3
SN68	38.3E-3	37.4E-3
SN69	40.2E-3	39.7E-3
SN70	39.5E-3	38.5E-3
SN71	40.0E-3	38.9E-3
SN72	39.1E-3	37.9E-3
SN73	40.3E-3	39.3E-3
SN74	38.1E-3	37.4E-3
Statistics		
Min	38.1E-3	37.1E-3
Max	40.3E-3	39.7E-3
Mean	39.2E-3	38.3E-3
Sigma	89.5E-5	96.0E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

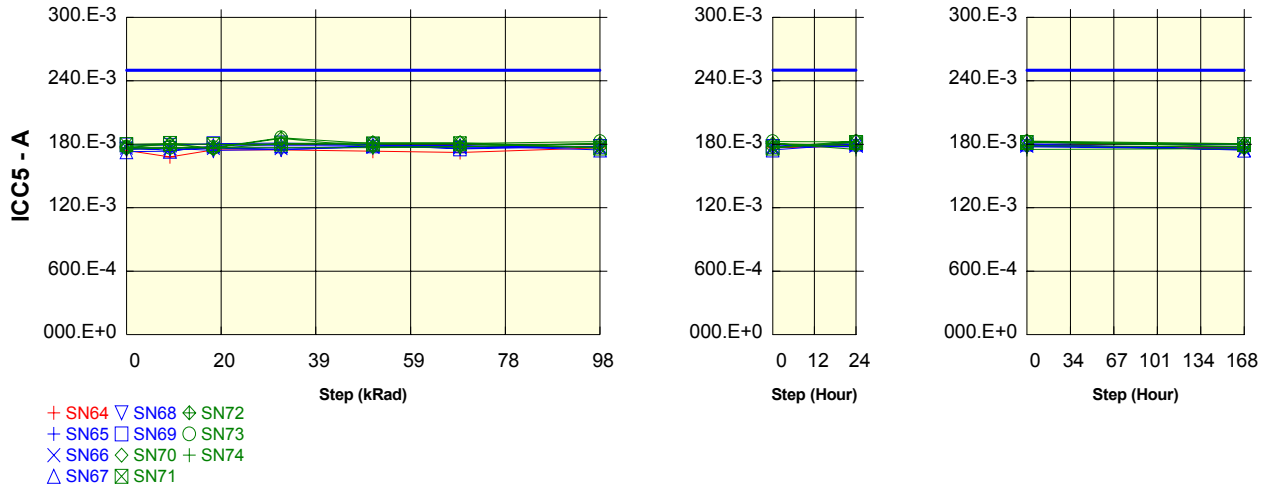
Parameter : Refresh Current : ICC5

CKE = /CS = High. tRC = tRCMin

Unit : A

Spec Limit Max : 250.E-3

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	174.2E-3	168.2E-3	174.5E-3	174.7E-3	173.5E-3	172.1E-3	176.7E-3
SN65	176.7E-3	174.2E-3	176.7E-3	174.6E-3	178.E-3	178.4E-3	178.1E-3
SN66	176.8E-3	176.3E-3	176.5E-3	176.4E-3	177.9E-3	177.6E-3	177.8E-3
SN67	172.8E-3	173.5E-3	178.5E-3	178.5E-3	178.5E-3	178.5E-3	174.6E-3
SN68	174.9E-3	176.2E-3	174.1E-3	175.E-3	177.2E-3	176.7E-3	177.7E-3
SN69	179.3E-3	179.1E-3	180.4E-3	181.3E-3	179.5E-3	175.5E-3	177.9E-3
SN70	178.E-3	180.E-3	175.9E-3	180.6E-3	181.4E-3	181.4E-3	177.2E-3
SN71	179.8E-3	180.7E-3	179.8E-3	180.2E-3	180.2E-3	180.6E-3	176.3E-3
SN72	176.6E-3	180.4E-3	176.3E-3	185.5E-3	177.6E-3	177.7E-3	180.6E-3
SN73	177.E-3	177.E-3	176.9E-3	186.1E-3	180.4E-3	180.7E-3	182.4E-3
SN74	175.6E-3	176.1E-3	176.5E-3	176.9E-3	176.7E-3	177.5E-3	181.E-3
Statistics							
Min	172.8E-3	173.5E-3	174.1E-3	174.6E-3	176.7E-3	175.5E-3	174.6E-3
Max	179.8E-3	180.7E-3	180.4E-3	186.1E-3	181.4E-3	181.4E-3	182.4E-3
Mean	176.8E-3	177.3E-3	177.2E-3	179.5E-3	178.8E-3	178.5E-3	178.4E-3
Sigma	205.2E-5	259.1E-5	190.4E-5	403.6E-5	156.4E-5	188.6E-5	232.1E-5

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	176.7E-3	178.3E-3
SN65	178.1E-3	178.6E-3
SN66	177.8E-3	178.9E-3
SN67	174.6E-3	180.2E-3
SN68	177.7E-3	177.5E-3
SN69	177.9E-3	181.4E-3
SN70	177.2E-3	182.9E-3
SN71	176.3E-3	181.7E-3
SN72	180.6E-3	178.7E-3
SN73	182.4E-3	182.3E-3
SN74	181.E-3	175.2E-3
Statistics		
Min	174.6E-3	175.2E-3
Max	182.4E-3	182.9E-3
Mean	178.4E-3	179.7E-3
Sigma	232.1E-5	239.6E-5

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	178.3E-3	176.6E-3
SN65	178.6E-3	177.2E-3
SN66	178.9E-3	174.8E-3
SN67	180.2E-3	174.4E-3
SN68	177.5E-3	175.3E-3
SN69	181.4E-3	179.5E-3
SN70	182.9E-3	180.6E-3
SN71	181.7E-3	179.8E-3
SN72	178.7E-3	177.5E-3
SN73	182.3E-3	177.9E-3
SN74	175.2E-3	175.8E-3
Statistics		
Min	175.2E-3	174.4E-3
Max	182.9E-3	180.6E-3
Mean	179.7E-3	177.3E-3
Sigma	239.6E-5	219.1E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

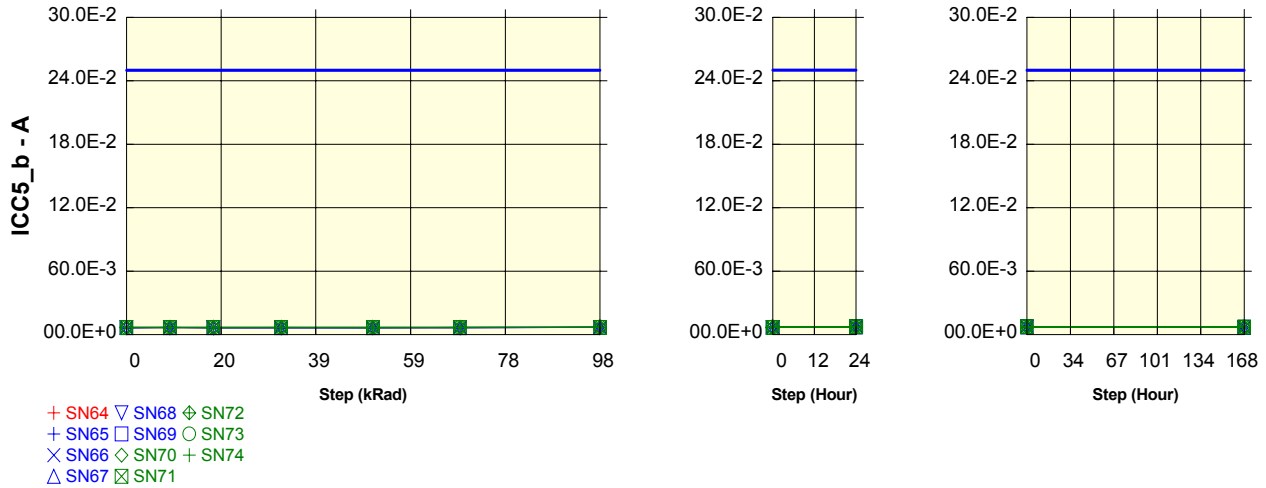
Parameter : Refresh Current : ICC5_b

CKE = /CS = High. TRC = 15.625µs

Unit : A

Spec Limit Max : 25.0E-2

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	66.1E-4	65.9E-4	65.9E-4	65.7E-4	65.7E-4	65.9E-4	67.8E-4
SN65	66.9E-4	67.1E-4	67.0E-4	66.7E-4	66.9E-4	67.2E-4	68.9E-4
SN66	67.7E-4	67.5E-4	67.4E-4	67.4E-4	67.6E-4	67.7E-4	69.7E-4
SN67	65.6E-4	65.7E-4	65.8E-4	66.0E-4	66.0E-4	66.1E-4	67.9E-4
SN68	66.9E-4	67.2E-4	66.8E-4	66.6E-4	67.0E-4	66.7E-4	68.8E-4
SN69	68.5E-4	68.6E-4	68.7E-4	68.9E-4	68.5E-4	68.9E-4	69.7E-4
SN70	68.4E-4	68.7E-4	68.4E-4	68.4E-4	68.9E-4	69.1E-4	67.9E-4
SN71	68.3E-4	68.6E-4	68.1E-4	67.9E-4	67.8E-4	67.9E-4	68.7E-4
SN72	66.9E-4	67.1E-4	66.8E-4	67.1E-4	67.0E-4	67.0E-4	70.6E-4
SN73	67.4E-4	67.5E-4	67.7E-4	67.8E-4	67.5E-4	67.7E-4	71.2E-4
SN74	67.1E-4	67.1E-4	66.9E-4	67.0E-4	66.8E-4	67.3E-4	70.0E-4
Statistics							
Min	65.6E-4	65.7E-4	65.8E-4	66.0E-4	66.0E-4	66.1E-4	67.9E-4
Max	68.5E-4	68.7E-4	68.7E-4	68.9E-4	68.9E-4	69.1E-4	71.2E-4
Mean	67.4E-4	67.5E-4	67.4E-4	67.4E-4	67.4E-4	67.6E-4	69.3E-4
Sigma	88.1E-6	92.3E-6	88.4E-6	89.3E-6	85.8E-6	92.9E-6	10.8E-5

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	67.8E-4	72.4E-4
SN65	68.9E-4	74.5E-4
SN66	69.7E-4	74.5E-4
SN67	67.9E-4	73.0E-4
SN68	68.8E-4	73.8E-4
SN69	69.7E-4	75.5E-4
SN70	67.9E-4	75.7E-4
SN71	68.7E-4	75.5E-4
SN72	70.6E-4	73.9E-4
SN73	71.2E-4	74.4E-4
SN74	70.0E-4	73.6E-4
Statistics		
Min	67.9E-4	73.0E-4
Max	71.2E-4	75.7E-4
Mean	69.3E-4	74.5E-4
Sigma	10.8E-5	89.8E-6

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	72.4E-4	68.3E-4
SN65	74.5E-4	69.4E-4
SN66	74.5E-4	69.7E-4
SN67	73.0E-4	68.3E-4
SN68	73.8E-4	69.3E-4
SN69	75.5E-4	71.1E-4
SN70	75.7E-4	71.2E-4
SN71	75.5E-4	70.3E-4
SN72	73.9E-4	69.5E-4
SN73	74.4E-4	70.1E-4
SN74	73.6E-4	69.5E-4
Statistics		
Min	73.0E-4	68.3E-4
Max	75.7E-4	71.2E-4
Mean	74.5E-4	69.9E-4
Sigma	89.8E-6	88.0E-6

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

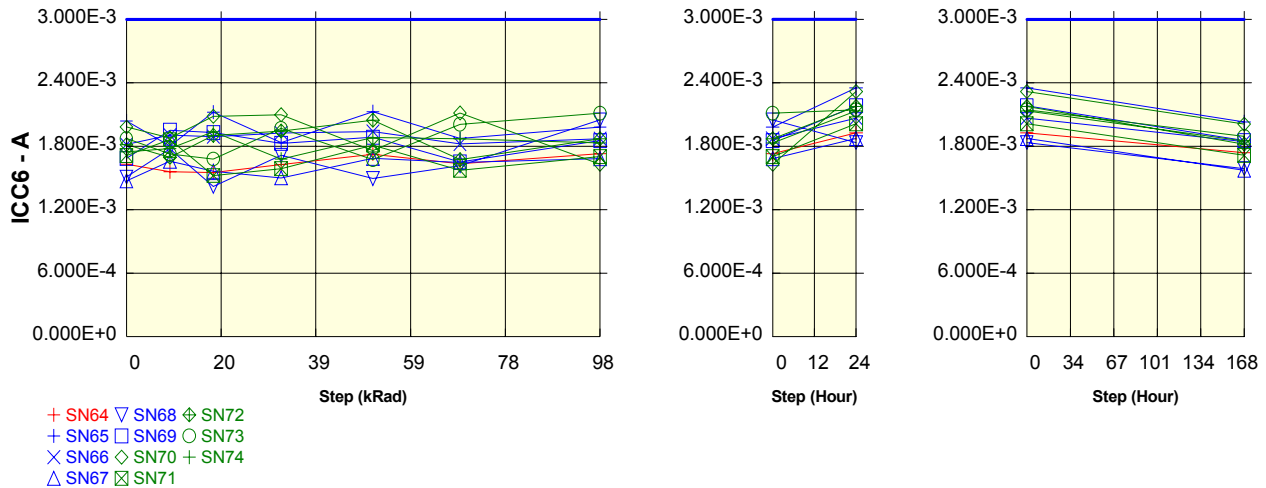
Parameter : Self Refresh Current : ICC6

CKE =0.2V

Unit : A

Spec Limit Max : 3.000E-3

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	1.629E-3	1.558E-3	1.550E-3	1.627E-3	1.726E-3	1.633E-3	1.729E-3
SN65	2.039E-3	1.802E-3	2.123E-3	1.835E-3	2.128E-3	1.874E-3	1.981E-3
SN66	1.816E-3	1.905E-3	1.890E-3	1.925E-3	1.940E-3	1.822E-3	1.871E-3
SN67	1.473E-3	1.659E-3	1.564E-3	1.501E-3	1.685E-3	1.646E-3	1.683E-3
SN68	1.509E-3	1.777E-3	1.421E-3	1.714E-3	1.495E-3	1.616E-3	2.048E-3
SN69	1.684E-3	1.952E-3	1.929E-3	1.828E-3	1.885E-3	1.652E-3	1.854E-3
SN70	1.982E-3	1.879E-3	2.084E-3	2.098E-3	1.759E-3	2.115E-3	1.629E-3
SN71	1.712E-3	1.862E-3	1.523E-3	1.587E-3	1.811E-3	1.573E-3	1.703E-3
SN72	1.815E-3	1.695E-3	1.902E-3	1.944E-3	2.046E-3	1.674E-3	1.870E-3
SN73	1.872E-3	1.727E-3	1.679E-3	1.969E-3	1.674E-3	2.007E-3	2.113E-3
SN74	1.746E-3	1.778E-3	1.936E-3	1.678E-3	1.884E-3	1.871E-3	1.833E-3
Statistics							
Min	1.473E-3	1.659E-3	1.421E-3	1.501E-3	1.495E-3	1.573E-3	1.629E-3
Max	2.039E-3	1.952E-3	2.123E-3	2.098E-3	2.128E-3	2.115E-3	2.113E-3
Mean	1.765E-3	1.804E-3	1.805E-3	1.808E-3	1.831E-3	1.785E-3	1.858E-3
Sigma	1.823E-4	9.518E-5	2.424E-4	1.863E-4	1.874E-4	1.819E-4	1.578E-4

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	1.729E-3	1.926E-3
SN65	1.981E-3	2.351E-3
SN66	1.871E-3	2.066E-3
SN67	1.683E-3	1.874E-3
SN68	2.048E-3	1.835E-3
SN69	1.854E-3	2.182E-3
SN70	1.629E-3	2.316E-3
SN71	1.703E-3	2.013E-3
SN72	1.870E-3	2.176E-3
SN73	2.113E-3	2.145E-3
SN74	1.833E-3	2.135E-3
Statistics		
Min	1.629E-3	1.835E-3
Max	2.113E-3	2.351E-3
Mean	1.858E-3	2.109E-3
Sigma	1.578E-4	1.683E-4

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	1.926E-3	1.739E-3
SN65	2.351E-3	2.030E-3
SN66	2.066E-3	1.843E-3
SN67	1.874E-3	1.574E-3
SN68	1.835E-3	1.589E-3
SN69	2.182E-3	1.854E-3
SN70	2.316E-3	2.009E-3
SN71	2.013E-3	1.715E-3
SN72	2.176E-3	1.820E-3
SN73	2.145E-3	1.892E-3
SN74	2.135E-3	1.848E-3
Statistics		
Min	1.835E-3	1.574E-3
Max	2.351E-3	2.030E-3
Mean	2.109E-3	1.817E-3
Sigma	1.683E-4	1.536E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

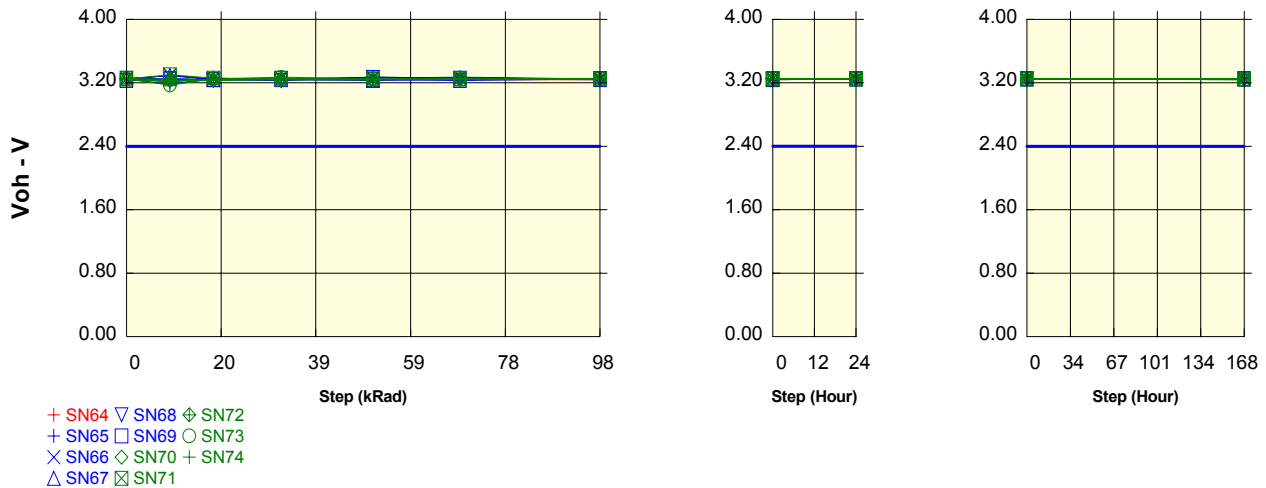
Parameter : Output High Voltage : Logic 1 : VohDQ07

IOH = -4mA

Unit : V

Spec Limit Min : 2.40

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.24	3.22	3.26	3.23	3.27	3.24	3.24
SN65	3.25	3.18	3.26	3.24	3.26	3.27	3.25
SN66	3.25	3.29	3.25	3.25	3.27	3.26	3.25
SN67	3.25	3.29	3.24	3.24	3.23	3.25	3.24
SN68	3.26	3.25	3.24	3.23	3.27	3.26	3.25
SN69	3.23	3.25	3.24	3.26	3.24	3.23	3.25
SN70	3.25	3.25	3.24	3.25	3.24	3.25	3.25
SN71	3.25	3.30	3.26	3.25	3.25	3.25	3.25
SN72	3.25	3.23	3.23	3.24	3.24	3.25	3.25
SN73	3.25	3.17	3.25	3.27	3.25	3.26	3.25
SN74	3.25	3.21	3.25	3.24	3.24	3.25	3.25
Statistics							
Min	3.23	3.17	3.23	3.23	3.23	3.23	3.24
Max	3.26	3.30	3.26	3.27	3.27	3.27	3.25
Mean	3.25	3.24	3.25	3.25	3.25	3.25	3.25
Sigma	0.01	0.05	0.01	0.01	0.01	0.01	0.00

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.24	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.24	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.24	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.24
SN74	3.25	3.24
Statistics		
Min	3.25	3.24
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

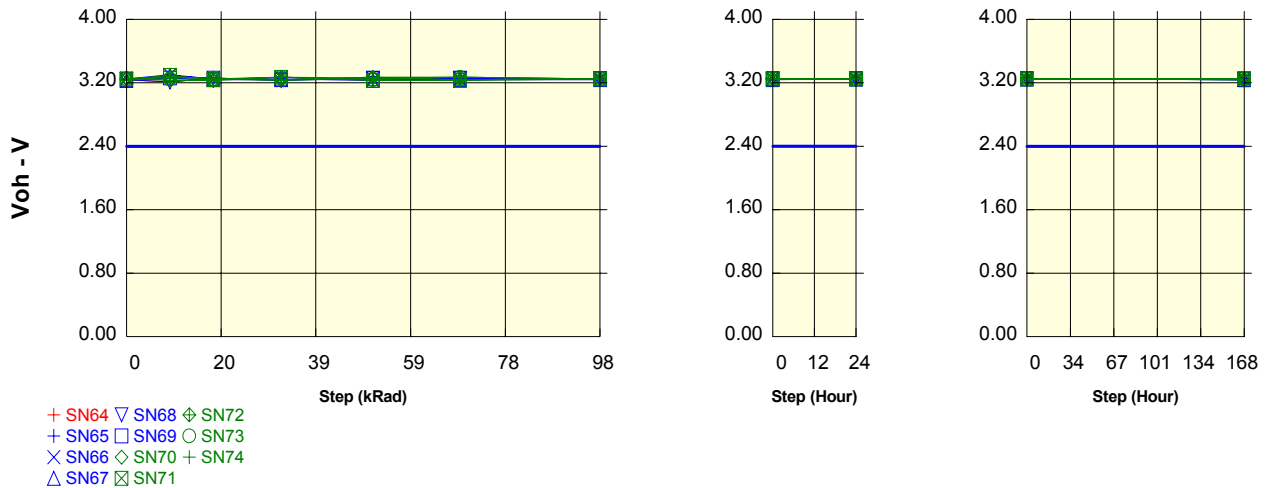
Parameter : Output High Voltage : Logic 1 : VohDQ06

IOH = -4mA

Unit : V

Spec Limit Min : 2.40

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.24	3.21	3.26	3.24	3.26	3.26	3.25
SN65	3.25	3.27	3.26	3.24	3.27	3.24	3.25
SN66	3.25	3.30	3.25	3.27	3.24	3.24	3.25
SN67	3.23	3.29	3.25	3.25	3.23	3.24	3.24
SN68	3.24	3.21	3.26	3.23	3.26	3.26	3.25
SN69	3.24	3.26	3.24	3.24	3.25	3.25	3.25
SN70	3.25	3.27	3.26	3.24	3.27	3.27	3.25
SN71	3.25	3.29	3.24	3.27	3.23	3.23	3.25
SN72	3.26	3.23	3.23	3.27	3.26	3.24	3.25
SN73	3.25	3.25	3.24	3.27	3.24	3.27	3.25
SN74	3.23	3.28	3.25	3.23	3.26	3.27	3.25
Statistics							
Min	3.23	3.21	3.23	3.23	3.23	3.23	3.24
Max	3.26	3.30	3.26	3.27	3.27	3.27	3.25
Mean	3.25	3.27	3.25	3.25	3.25	3.25	3.25
Sigma	0.01	0.03	0.01	0.02	0.02	0.02	0.00

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.24	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.24	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.24
SN67	3.25	3.24
SN68	3.25	3.25
SN69	3.25	3.24
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.24
SN73	3.25	3.25
SN74	3.25	3.24
Statistics		
Min	3.25	3.24
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.01

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

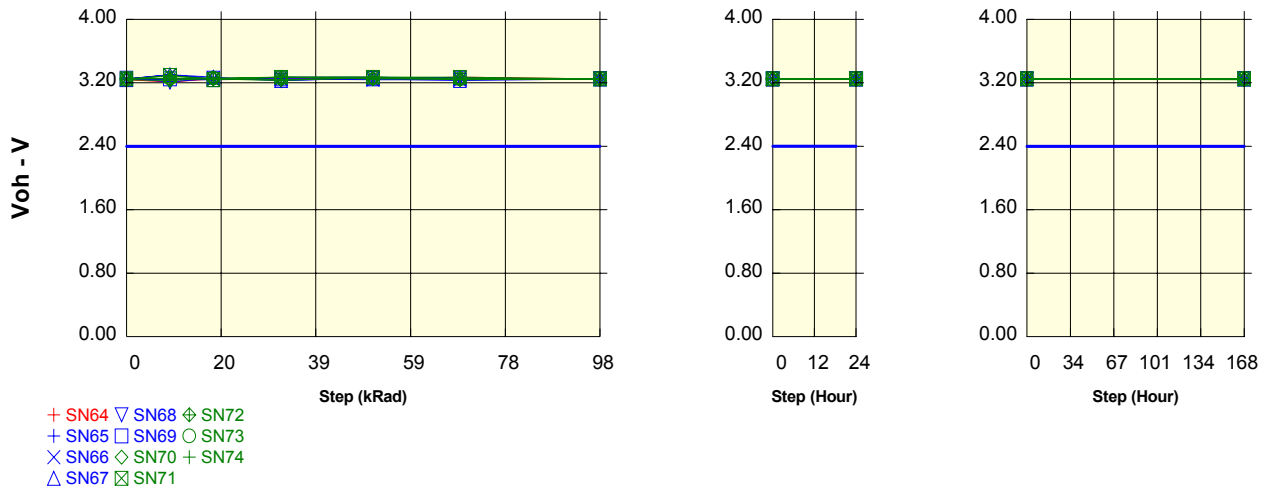
Parameter : Output High Voltage : Logic 1 : VohDQ05

IOH = -4mA

Unit : V

Spec Limit Min : 2.40

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.24	3.21	3.25	3.26	3.25	3.27	3.25
SN65	3.25	3.24	3.24	3.27	3.27	3.26	3.25
SN66	3.25	3.30	3.25	3.25	3.24	3.24	3.25
SN67	3.25	3.30	3.27	3.23	3.26	3.26	3.25
SN68	3.26	3.21	3.26	3.23	3.26	3.26	3.25
SN69	3.24	3.25	3.24	3.25	3.25	3.23	3.25
SN70	3.24	3.23	3.26	3.24	3.26	3.24	3.25
SN71	3.25	3.29	3.24	3.27	3.27	3.27	3.25
SN72	3.26	3.25	3.25	3.27	3.25	3.25	3.25
SN73	3.25	3.26	3.26	3.27	3.27	3.25	3.25
SN74	3.24	3.29	3.25	3.23	3.27	3.25	3.25
Statistics							
Min	3.24	3.21	3.24	3.23	3.24	3.23	3.25
Max	3.26	3.30	3.27	3.27	3.27	3.27	3.25
Mean	3.25	3.26	3.25	3.25	3.26	3.25	3.25
Sigma	0.01	0.03	0.01	0.02	0.01	0.01	0.00

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.25	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.24
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.25	3.24
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

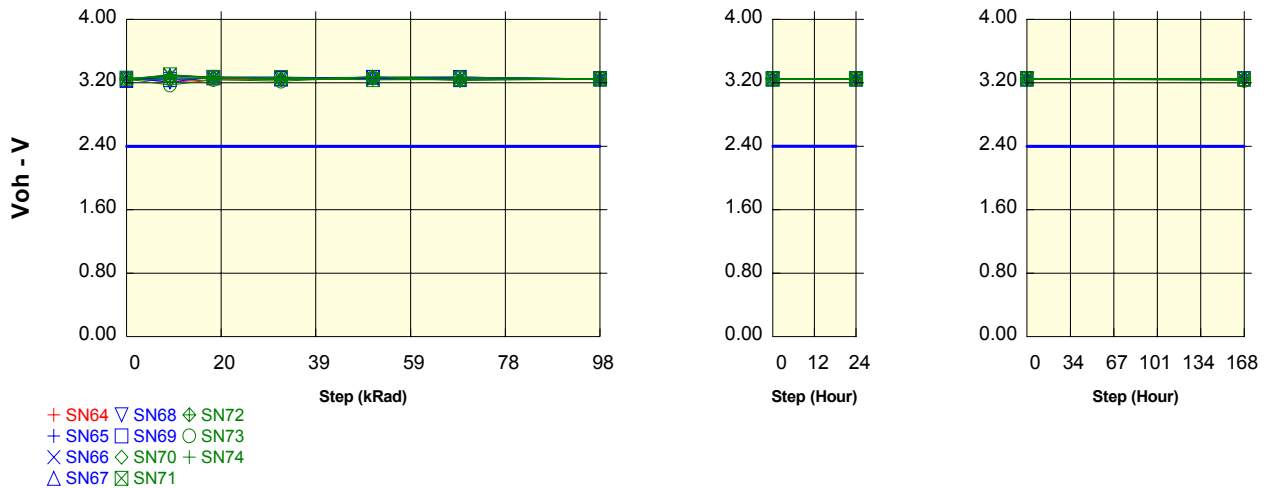
Parameter : Output High Voltage : Logic 1 : VohDQ04

IOH = -4mA

Unit : V

Spec Limit Min : 2.40

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.26	3.21	3.24	3.24	3.25	3.24	3.25
SN65	3.25	3.26	3.26	3.25	3.26	3.25	3.25
SN66	3.25	3.29	3.27	3.27	3.26	3.27	3.25
SN67	3.23	3.29	3.27	3.25	3.27	3.24	3.25
SN68	3.26	3.21	3.27	3.26	3.27	3.27	3.25
SN69	3.24	3.24	3.26	3.25	3.27	3.25	3.25
SN70	3.25	3.24	3.26	3.24	3.27	3.23	3.25
SN71	3.25	3.30	3.27	3.27	3.24	3.25	3.25
SN72	3.26	3.27	3.27	3.25	3.27	3.24	3.25
SN73	3.25	3.17	3.24	3.22	3.27	3.27	3.25
SN74	3.24	3.30	3.26	3.25	3.24	3.24	3.25
Statistics							
Min	3.23	3.17	3.24	3.22	3.24	3.23	3.25
Max	3.26	3.30	3.27	3.27	3.27	3.27	3.25
Mean	3.25	3.26	3.26	3.25	3.26	3.25	3.25
Sigma	0.01	0.04	0.01	0.01	0.01	0.01	0.00

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.25	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.23
SN74	3.25	3.25
Statistics		
Min	3.25	3.23
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.01

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

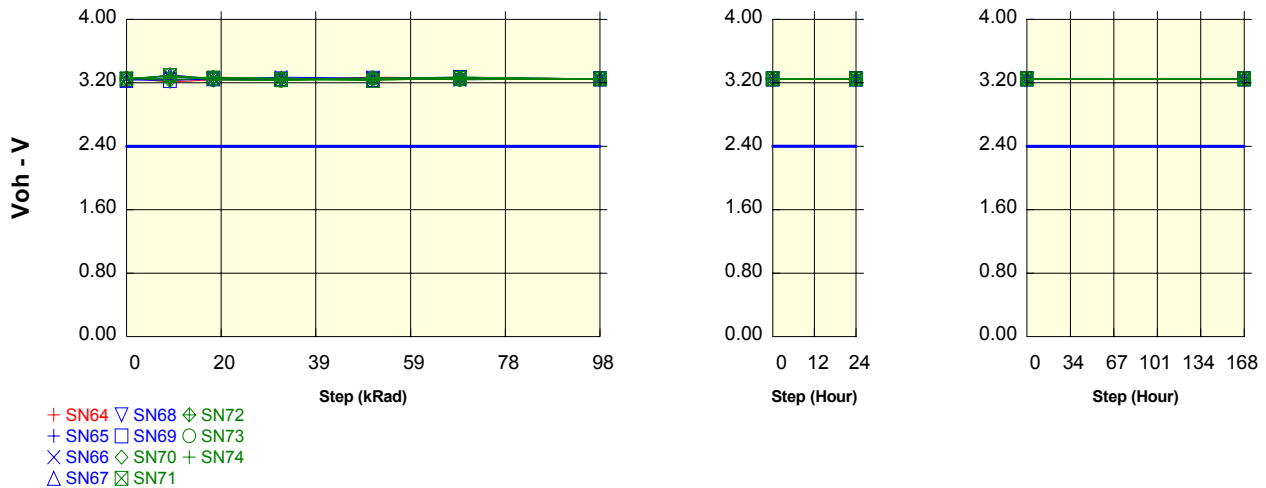
Parameter : Output High Voltage : Logic 1 : VohDQ03

IOH = -4mA

Unit : V

Spec Limit Min : 2.40

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.26	3.21	3.24	3.24	3.27	3.26	3.25
SN65	3.26	3.24	3.26	3.24	3.26	3.25	3.25
SN66	3.25	3.28	3.25	3.27	3.26	3.24	3.25
SN67	3.23	3.30	3.25	3.25	3.24	3.26	3.25
SN68	3.24	3.24	3.24	3.24	3.26	3.27	3.25
SN69	3.24	3.23	3.26	3.25	3.24	3.26	3.25
SN70	3.25	3.26	3.27	3.26	3.24	3.27	3.25
SN71	3.25	3.29	3.26	3.24	3.23	3.26	3.25
SN72	3.26	3.23	3.27	3.25	3.26	3.25	3.25
SN73	3.25	3.29	3.24	3.23	3.26	3.24	3.25
SN74	3.26	3.28	3.24	3.23	3.26	3.27	3.25
Statistics							
Min	3.23	3.23	3.24	3.23	3.23	3.24	3.25
Max	3.26	3.30	3.27	3.27	3.26	3.27	3.25
Mean	3.25	3.26	3.25	3.25	3.25	3.26	3.25
Sigma	0.01	0.03	0.01	0.01	0.01	0.01	0.00

Test TST002 : Annealing 24H

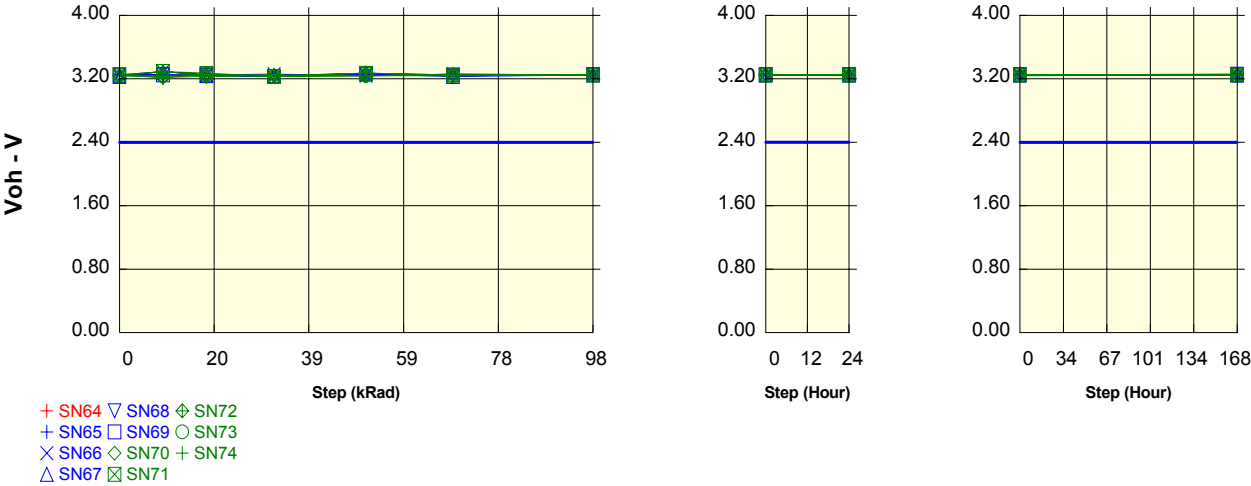
	0 Hour	24 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.25	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.25	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Output High Voltage : Logic 1 : VohDQ02
IOH = -4mA
 Unit : V
 Spec Limit Min : 2.40
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.26	3.21	3.26	3.24	3.24	3.26	3.25
SN65	3.25	3.25	3.24	3.24	3.26	3.25	3.25
SN66	3.25	3.29	3.25	3.26	3.24	3.26	3.25
SN67	3.23	3.29	3.25	3.24	3.27	3.25	3.25
SN68	3.25	3.25	3.25	3.23	3.27	3.24	3.25
SN69	3.24	3.25	3.24	3.23	3.26	3.23	3.25
SN70	3.24	3.23	3.25	3.24	3.27	3.24	3.25
SN71	3.25	3.29	3.27	3.23	3.27	3.25	3.25
SN72	3.24	3.22	3.23	3.24	3.24	3.25	3.25
SN73	3.25	3.24	3.26	3.23	3.24	3.24	3.25
SN74	3.24	3.29	3.25	3.25	3.24	3.25	3.25
Statistics							
Min	3.23	3.22	3.23	3.23	3.24	3.23	3.25
Max	3.25	3.29	3.27	3.26	3.27	3.26	3.25
Mean	3.24	3.26	3.25	3.24	3.26	3.25	3.25
Sigma	0.01	0.03	0.01	0.01	0.01	0.01	0.00

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.24
Statistics		
Min	3.25	3.24
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.26
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.24	3.25
Statistics		
Min	3.24	3.25
Max	3.25	3.26
Mean	3.25	3.25
Sigma	0.00	0.00

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

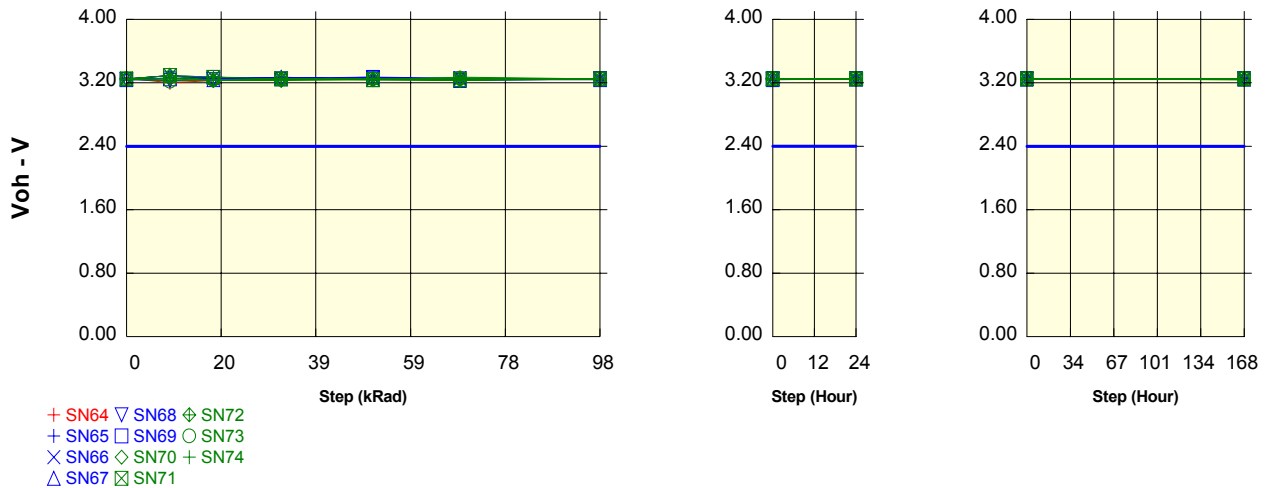
Parameter : Output High Voltage : Logic 1 : VohDQ01

IOH = -4mA

Unit : V

Spec Limit Min : 2.40

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.26	3.20	3.23	3.24	3.25	3.24	3.25
SN65	3.25	3.26	3.26	3.24	3.26	3.25	3.25
SN66	3.25	3.29	3.27	3.26	3.27	3.26	3.25
SN67	3.25	3.29	3.24	3.27	3.24	3.24	3.24
SN68	3.24	3.23	3.24	3.24	3.26	3.25	3.25
SN69	3.24	3.25	3.27	3.25	3.27	3.23	3.25
SN70	3.25	3.25	3.23	3.23	3.24	3.23	3.25
SN71	3.25	3.29	3.27	3.25	3.24	3.24	3.25
SN72	3.25	3.29	3.23	3.25	3.25	3.25	3.25
SN73	3.25	3.22	3.24	3.25	3.25	3.26	3.25
SN74	3.24	3.26	3.24	3.25	3.24	3.27	3.25
Statistics							
Min	3.24	3.22	3.23	3.23	3.24	3.23	3.24
Max	3.25	3.29	3.27	3.27	3.27	3.27	3.25
Mean	3.25	3.26	3.25	3.25	3.25	3.25	3.25
Sigma	0.00	0.03	0.02	0.01	0.01	0.01	0.00

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.24	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.24	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.24
SN73	3.25	3.25
SN74	3.25	3.24
Statistics		
Min	3.25	3.24
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

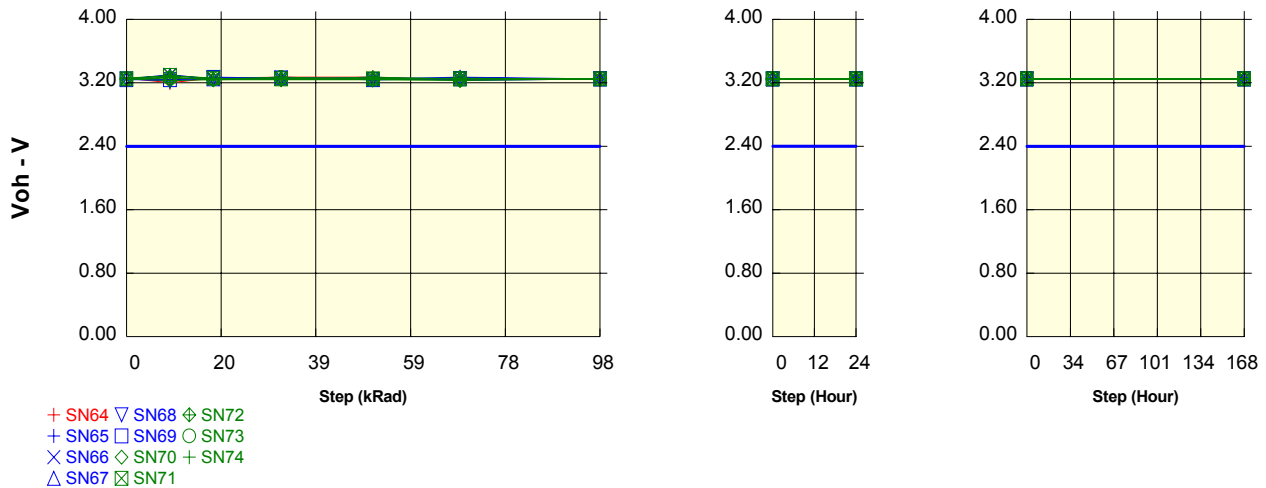
Parameter : Output High Voltage : Logic 1 : VohDQ00

IOH = -4mA

Unit : V

Spec Limit Min : 2.40

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.26	3.20	3.26	3.27	3.27	3.24	3.25
SN65	3.25	3.24	3.26	3.25	3.27	3.23	3.25
SN66	3.25	3.30	3.25	3.27	3.24	3.26	3.25
SN67	3.25	3.29	3.25	3.26	3.25	3.27	3.25
SN68	3.25	3.22	3.26	3.26	3.24	3.25	3.25
SN69	3.24	3.24	3.27	3.26	3.24	3.25	3.25
SN70	3.25	3.23	3.24	3.24	3.24	3.23	3.25
SN71	3.25	3.29	3.26	3.25	3.25	3.25	3.25
SN72	3.25	3.27	3.24	3.25	3.25	3.25	3.25
SN73	3.25	3.26	3.25	3.27	3.25	3.26	3.25
SN74	3.26	3.29	3.25	3.25	3.27	3.25	3.25
Statistics							
Min	3.24	3.22	3.24	3.24	3.24	3.23	3.25
Max	3.26	3.30	3.27	3.27	3.27	3.27	3.25
Mean	3.25	3.26	3.25	3.26	3.25	3.25	3.25
Sigma	0.00	0.03	0.01	0.01	0.01	0.01	0.00

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.25	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.25	3.25
SN65	3.25	3.25
SN66	3.25	3.25
SN67	3.25	3.25
SN68	3.25	3.25
SN69	3.25	3.25
SN70	3.25	3.25
SN71	3.25	3.25
SN72	3.25	3.25
SN73	3.25	3.25
SN74	3.25	3.25
Statistics		
Min	3.25	3.25
Max	3.25	3.25
Mean	3.25	3.25
Sigma	0.00	0.00

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

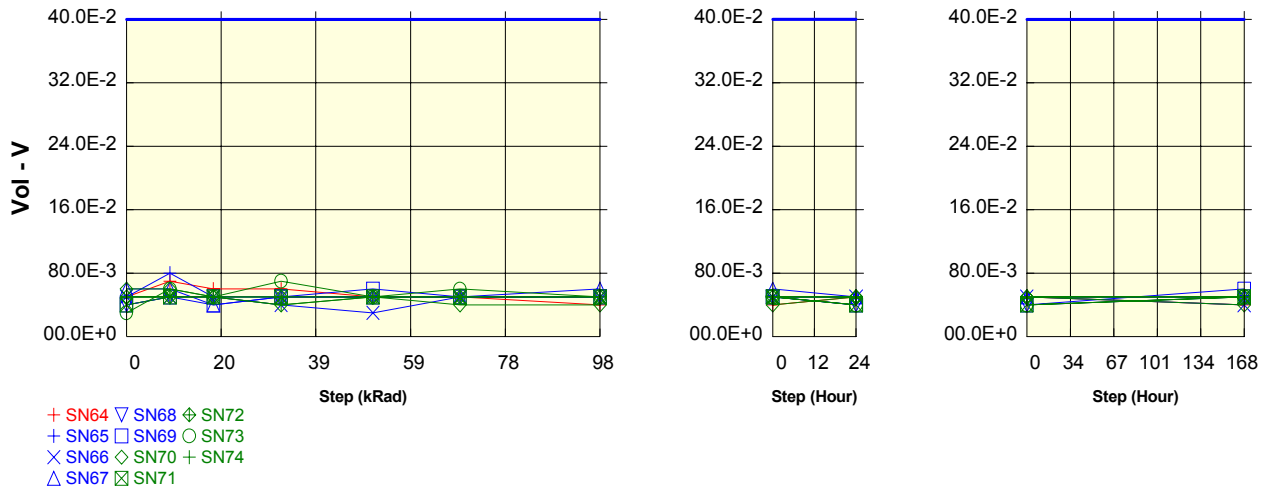
Parameter : Output High Voltage : Logic 0 : VoIDQ07

IOL = 4mA

Unit : V

Spec Limit Max : 40.0E-2

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	50.0E-3	70.0E-3	60.0E-3	60.0E-3	50.0E-3	50.0E-3	40.0E-3
SN65	50.0E-3	80.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3	50.0E-3	40.0E-3	30.0E-3	50.0E-3	50.0E-3
SN67	60.0E-3	60.0E-3	40.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3
SN68	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN69	40.0E-3	50.0E-3	40.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3
SN70	60.0E-3	60.0E-3	50.0E-3	40.0E-3	50.0E-3	40.0E-3	40.0E-3
SN71	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN73	30.0E-3	60.0E-3	50.0E-3	70.0E-3	50.0E-3	60.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3	50.0E-3	40.0E-3	50.0E-3	50.0E-3	50.0E-3
Statistics							
Min	30.0E-3	50.0E-3	40.0E-3	40.0E-3	30.0E-3	40.0E-3	40.0E-3
Max	60.0E-3	80.0E-3	50.0E-3	70.0E-3	60.0E-3	60.0E-3	60.0E-3
Mean	47.0E-3	56.0E-3	48.0E-3	49.0E-3	49.0E-3	50.0E-3	50.0E-3
Sigma	94.9E-4	96.6E-4	42.2E-4	87.6E-4	73.8E-4	47.1E-4	47.1E-4

Test TST002 : Annealing 24H

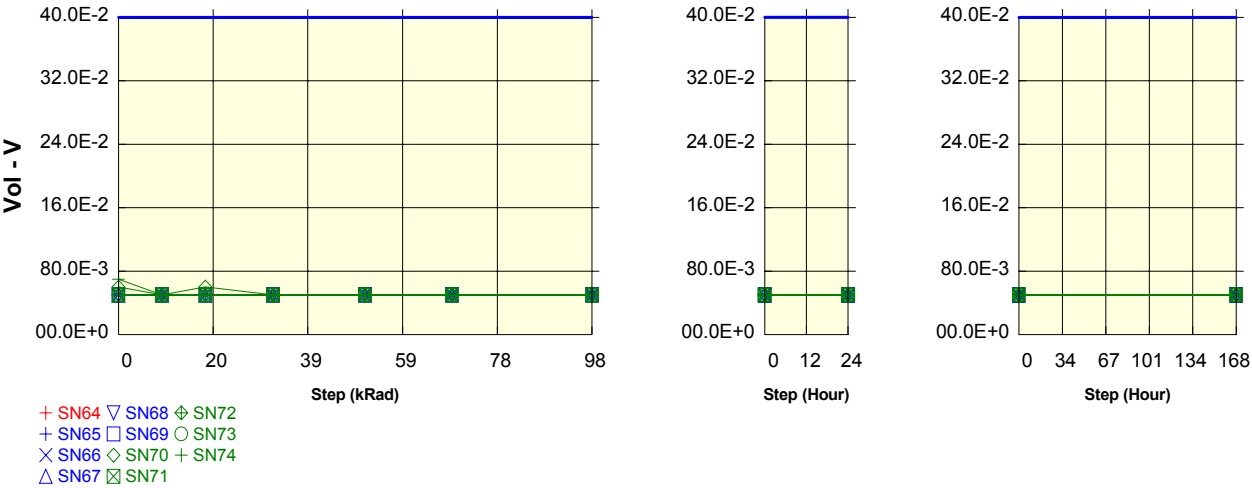
	0 Hour	24 Hour
SN64	40.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	60.0E-3	50.0E-3
SN68	50.0E-3	40.0E-3
SN69	50.0E-3	40.0E-3
SN70	40.0E-3	50.0E-3
SN71	50.0E-3	40.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	40.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	40.0E-3	40.0E-3
Max	60.0E-3	50.0E-3
Mean	50.0E-3	46.0E-3
Sigma	47.1E-4	51.6E-4

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	50.0E-3	40.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	40.0E-3
SN67	50.0E-3	50.0E-3
SN68	40.0E-3	50.0E-3
SN69	40.0E-3	60.0E-3
SN70	50.0E-3	40.0E-3
SN71	40.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	40.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	40.0E-3	40.0E-3
Max	50.0E-3	60.0E-3
Mean	46.0E-3	49.0E-3
Sigma	51.6E-4	56.8E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Output High Voltage : Logic 0 : VoIDQ06
IOL = 4mA
 Unit : V
 Spec Limit Max : 40.0E-2
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN70	60.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN74	70.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Statistics							
Min	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Max	70.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Mean	53.0E-3	50.0E-3	51.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Sigma	67.5E-4	12.4E-10	31.6E-4	12.4E-10	12.4E-10	12.4E-10	12.4E-10

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	50.0E-3	50.0E-3
Mean	50.0E-3	50.0E-3
Sigma	12.4E-10	12.4E-10

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	50.0E-3	50.0E-3
Mean	50.0E-3	50.0E-3
Sigma	12.4E-10	12.4E-10

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

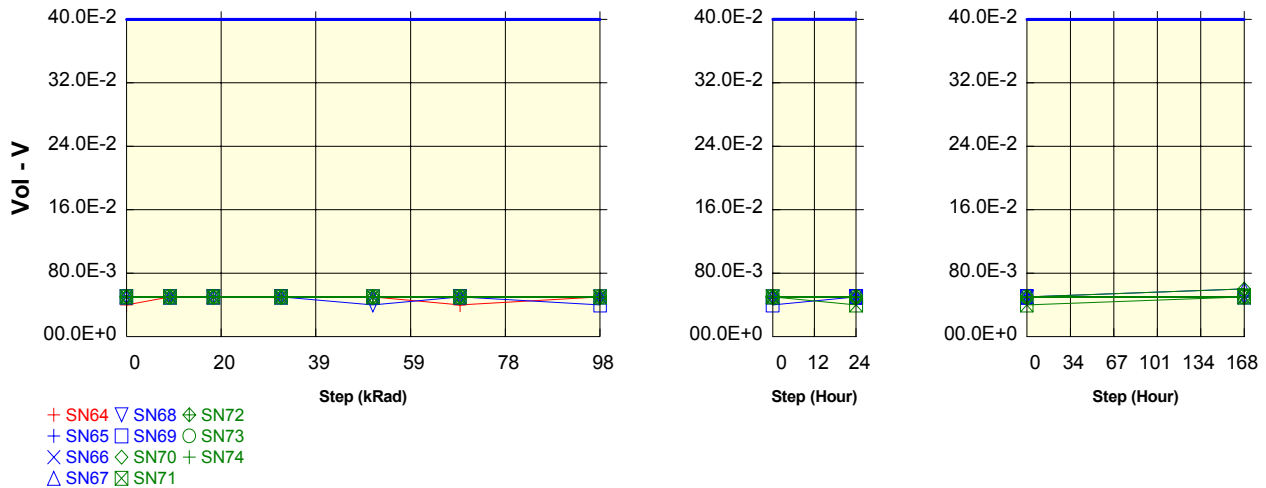
Parameter : Output High Voltage : Logic 0 : VoIDQ05

IOL = 4mA

Unit : V

Spec Limit Max : 40.0E-2

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3
SN70	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Statistics							
Min	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3	50.0E-3	40.0E-3
Max	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Mean	50.0E-3	50.0E-3	50.0E-3	50.0E-3	49.0E-3	50.0E-3	49.0E-3
Sigma	12.4E-10	12.4E-10	12.4E-10	12.4E-10	31.6E-4	12.4E-10	31.6E-4

Test TST002 : Annealing 24H

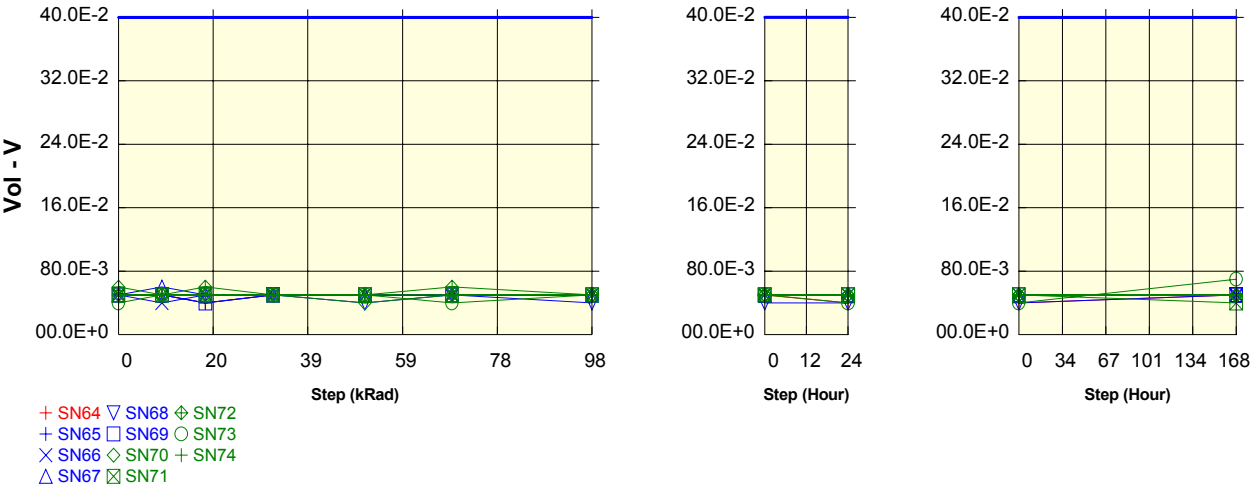
	0 Hour	24 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3
SN69	40.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	40.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	40.0E-3	40.0E-3
Max	50.0E-3	50.0E-3
Mean	49.0E-3	49.0E-3
Sigma	31.6E-4	31.6E-4

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	60.0E-3
SN68	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	40.0E-3	50.0E-3
SN72	50.0E-3	60.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	40.0E-3	50.0E-3
Max	50.0E-3	60.0E-3
Mean	49.0E-3	52.0E-3
Sigma	31.6E-4	42.2E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Output High Voltage : Logic 0 : VoIDQ04
IOL = 4mA
 Unit : V
 Spec Limit Max : 40.0E-2
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure							
	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	50.0E-3	50.0E-3	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN66	50.0E-3	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN67	50.0E-3	60.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3	50.0E-3	40.0E-3
SN69	50.0E-3	50.0E-3	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN72	60.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3	60.0E-3	50.0E-3
SN73	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Statistics							
Min	40.0E-3	40.0E-3	40.0E-3	50.0E-3	40.0E-3	40.0E-3	40.0E-3
Max	60.0E-3	60.0E-3	60.0E-3	50.0E-3	50.0E-3	60.0E-3	50.0E-3
Mean	50.0E-3	50.0E-3	49.0E-3	50.0E-3	48.0E-3	50.0E-3	49.0E-3
Sigma	47.1E-4	47.1E-4	56.8E-4	12.4E-10	42.2E-4	47.1E-4	31.6E-4

Test TST002 : Annealing 24H		
	0 Hour	24 Hour
SN64	50.0E-3	40.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	40.0E-3	40.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	40.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	40.0E-3	40.0E-3
Max	50.0E-3	50.0E-3
Mean	49.0E-3	48.0E-3
Sigma	31.6E-4	42.2E-4

Test TST003 : Annealing 168H		
	0 Hour	168 Hour
SN64	40.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	40.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	40.0E-3
SN72	50.0E-3	50.0E-3
SN73	40.0E-3	70.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	40.0E-3	40.0E-3
Max	50.0E-3	70.0E-3
Mean	48.0E-3	51.0E-3
Sigma	42.2E-4	73.8E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

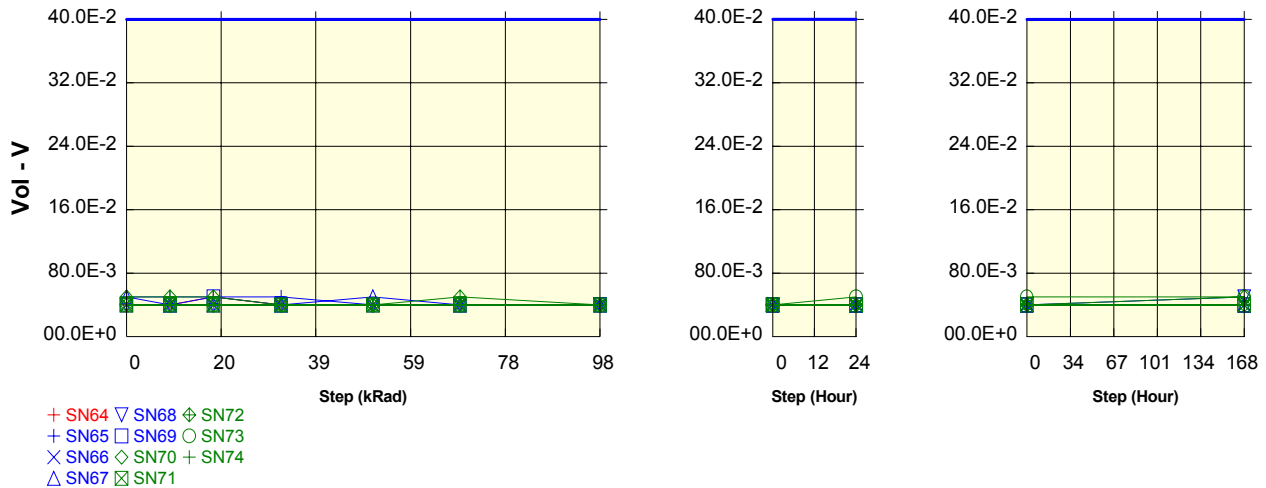
Parameter : Output High Voltage : Logic 0 : VoIDQ03

IOL = 4mA

Unit : V

Spec Limit Max : 40.0E-2

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	40.0E-3	40.0E-3	50.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
SN65	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3	40.0E-3	40.0E-3
SN66	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
SN67	50.0E-3	40.0E-3	40.0E-3	40.0E-3	50.0E-3	40.0E-3	40.0E-3
SN68	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
SN69	40.0E-3	40.0E-3	50.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
SN70	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
SN71	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
SN72	50.0E-3	50.0E-3	50.0E-3	40.0E-3	40.0E-3	50.0E-3	40.0E-3
SN73	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
SN74	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
Statistics							
Min	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3	40.0E-3
Max	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	40.0E-3
Mean	43.0E-3	42.0E-3	43.0E-3	41.0E-3	41.0E-3	41.0E-3	40.0E-3
Sigma	48.3E-4	42.2E-4	48.3E-4	31.6E-4	31.6E-4	31.6E-4	10.8E-10

Test TST002 : Annealing 24H

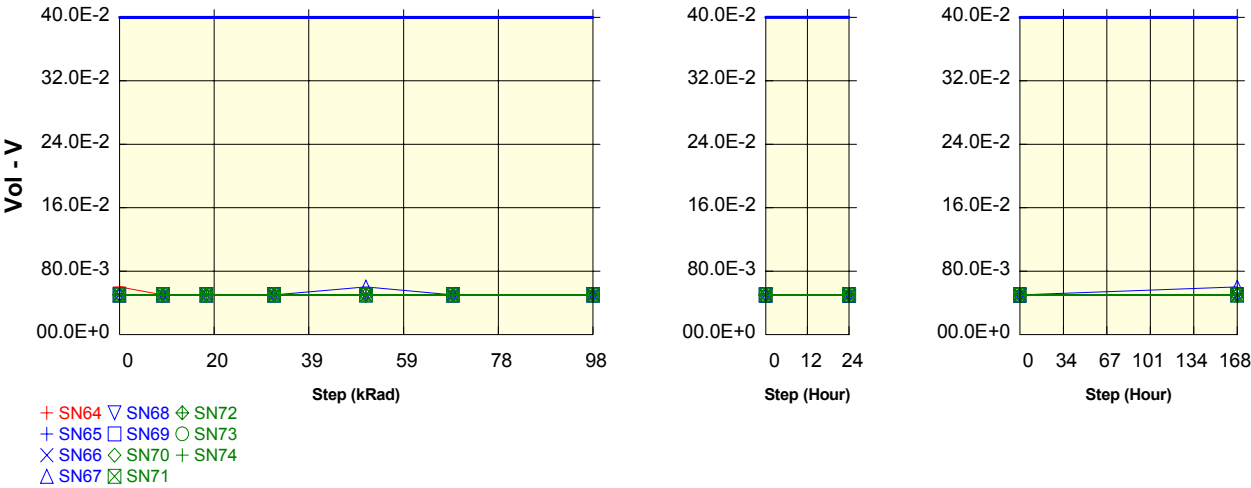
	0 Hour	24 Hour
SN64	40.0E-3	40.0E-3
SN65	40.0E-3	40.0E-3
SN66	40.0E-3	40.0E-3
SN67	40.0E-3	40.0E-3
SN68	40.0E-3	40.0E-3
SN69	40.0E-3	40.0E-3
SN70	40.0E-3	40.0E-3
SN71	40.0E-3	40.0E-3
SN72	40.0E-3	40.0E-3
SN73	40.0E-3	50.0E-3
SN74	40.0E-3	40.0E-3
Statistics		
Min	40.0E-3	40.0E-3
Max	40.0E-3	50.0E-3
Mean	40.0E-3	41.0E-3
Sigma	10.8E-10	31.6E-4

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	40.0E-3	40.0E-3
SN65	40.0E-3	40.0E-3
SN66	40.0E-3	40.0E-3
SN67	40.0E-3	40.0E-3
SN68	40.0E-3	50.0E-3
SN69	40.0E-3	40.0E-3
SN70	40.0E-3	50.0E-3
SN71	40.0E-3	40.0E-3
SN72	40.0E-3	40.0E-3
SN73	50.0E-3	50.0E-3
SN74	40.0E-3	40.0E-3
Statistics		
Min	40.0E-3	40.0E-3
Max	50.0E-3	50.0E-3
Mean	41.0E-3	43.0E-3
Sigma	31.6E-4	48.3E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Output High Voltage : Logic 0 : VoIDQ02
IOL = 4mA
 Unit : V
 Spec Limit Max : 40.0E-2
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	60.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Statistics							
Min	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Max	50.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3
Mean	50.0E-3	50.0E-3	50.0E-3	50.0E-3	51.0E-3	50.0E-3	50.0E-3
Sigma	12.4E-10	12.4E-10	12.4E-10	12.4E-10	31.6E-4	12.4E-10	12.4E-10

Test TST002 : Annealing 24H

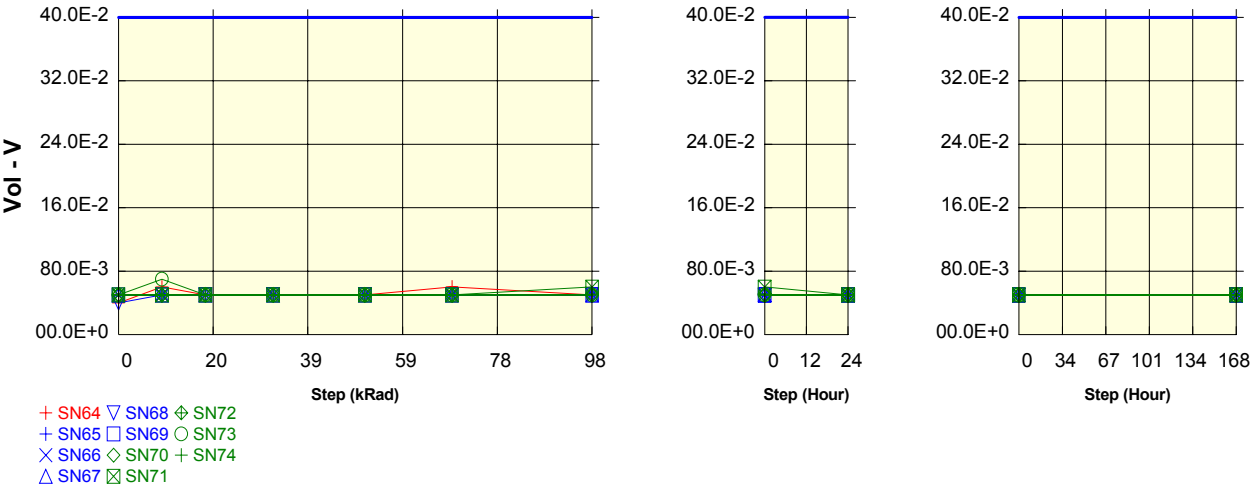
	0 Hour	24 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	50.0E-3	50.0E-3
Mean	50.0E-3	50.0E-3
Sigma	12.4E-10	12.4E-10

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	60.0E-3
SN68	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	50.0E-3	60.0E-3
Mean	50.0E-3	51.0E-3
Sigma	12.4E-10	31.6E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Output High Voltage : Logic 0 : VoIDQ01
IOL = 4mA
 Unit : V
 Spec Limit Max : 40.0E-2
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	40.0E-3	60.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN68	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3
SN72	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN73	50.0E-3	70.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Statistics							
Min	40.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Max	50.0E-3	70.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3
Mean	49.0E-3	52.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	51.0E-3
Sigma	31.6E-4	63.2E-4	12.4E-10	12.4E-10	12.4E-10	12.4E-10	31.6E-4

Test TST002 : Annealing 24H

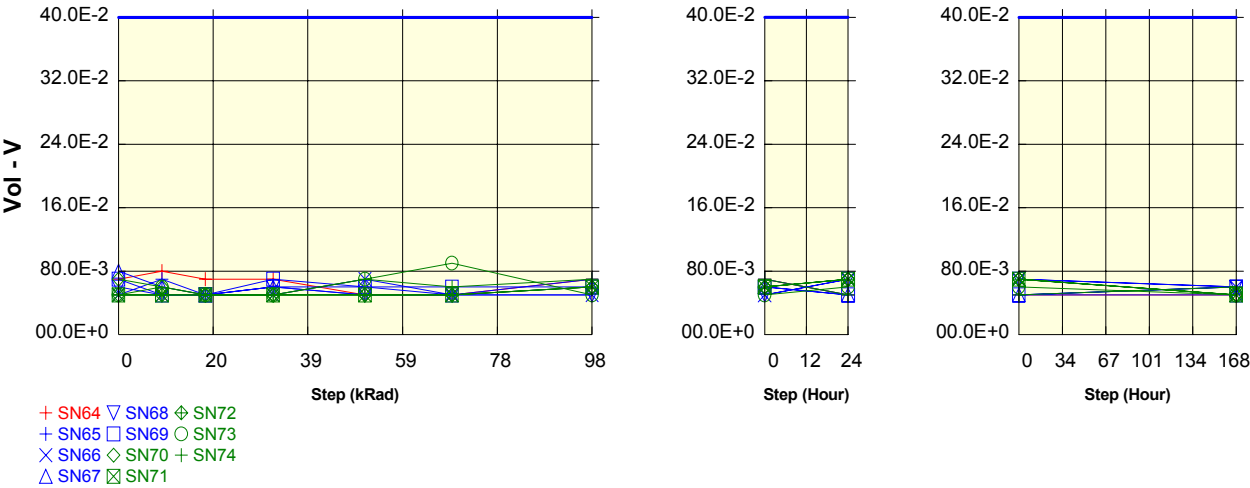
	0 Hour	24 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	60.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	60.0E-3	50.0E-3
Mean	51.0E-3	50.0E-3
Sigma	31.6E-4	12.4E-10

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	50.0E-3
SN66	50.0E-3	50.0E-3
SN67	50.0E-3	50.0E-3
SN68	50.0E-3	50.0E-3
SN69	50.0E-3	50.0E-3
SN70	50.0E-3	50.0E-3
SN71	50.0E-3	50.0E-3
SN72	50.0E-3	50.0E-3
SN73	50.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	50.0E-3	50.0E-3
Mean	50.0E-3	50.0E-3
Sigma	12.4E-10	12.4E-10

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Output High Voltage : Logic 0 : VoIDQ00
IOL = 4mA
 Unit : V
 Spec Limit Max : 40.0E-2
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure							
	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	70.0E-3	80.0E-3	70.0E-3	70.0E-3	50.0E-3	50.0E-3	70.0E-3
SN65	50.0E-3	70.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3	70.0E-3
SN66	50.0E-3	50.0E-3	50.0E-3	50.0E-3	70.0E-3	50.0E-3	50.0E-3
SN67	80.0E-3	60.0E-3	50.0E-3	60.0E-3	60.0E-3	50.0E-3	60.0E-3
SN68	60.0E-3	50.0E-3	50.0E-3	60.0E-3	50.0E-3	50.0E-3	50.0E-3
SN69	70.0E-3	50.0E-3	50.0E-3	70.0E-3	60.0E-3	60.0E-3	60.0E-3
SN70	70.0E-3	60.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3
SN71	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3
SN72	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	60.0E-3
SN73	50.0E-3	60.0E-3	50.0E-3	50.0E-3	70.0E-3	90.0E-3	50.0E-3
SN74	50.0E-3	50.0E-3	50.0E-3	50.0E-3	70.0E-3	60.0E-3	70.0E-3
Statistics							
Min	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3	50.0E-3
Max	80.0E-3	70.0E-3	50.0E-3	70.0E-3	70.0E-3	90.0E-3	70.0E-3
Mean	58.0E-3	55.0E-3	50.0E-3	55.0E-3	58.0E-3	56.0E-3	59.0E-3
Sigma	11.4E-3	70.7E-4	12.4E-10	70.7E-4	91.9E-4	12.6E-3	73.8E-4

Test TST002 : Annealing 24H		
	0 Hour	24 Hour
SN64	70.0E-3	50.0E-3
SN65	70.0E-3	50.0E-3
SN66	50.0E-3	70.0E-3
SN67	60.0E-3	50.0E-3
SN68	50.0E-3	70.0E-3
SN69	60.0E-3	50.0E-3
SN70	60.0E-3	70.0E-3
SN71	60.0E-3	70.0E-3
SN72	60.0E-3	70.0E-3
SN73	50.0E-3	60.0E-3
SN74	70.0E-3	50.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	70.0E-3	70.0E-3
Mean	59.0E-3	61.0E-3
Sigma	73.8E-4	99.4E-4

Test TST003 : Annealing 168H		
	0 Hour	168 Hour
SN64	50.0E-3	50.0E-3
SN65	50.0E-3	60.0E-3
SN66	70.0E-3	60.0E-3
SN67	50.0E-3	50.0E-3
SN68	70.0E-3	60.0E-3
SN69	50.0E-3	60.0E-3
SN70	70.0E-3	50.0E-3
SN71	70.0E-3	50.0E-3
SN72	70.0E-3	50.0E-3
SN73	60.0E-3	50.0E-3
SN74	50.0E-3	60.0E-3
Statistics		
Min	50.0E-3	50.0E-3
Max	70.0E-3	60.0E-3
Mean	61.0E-3	55.0E-3
Sigma	99.4E-4	52.7E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

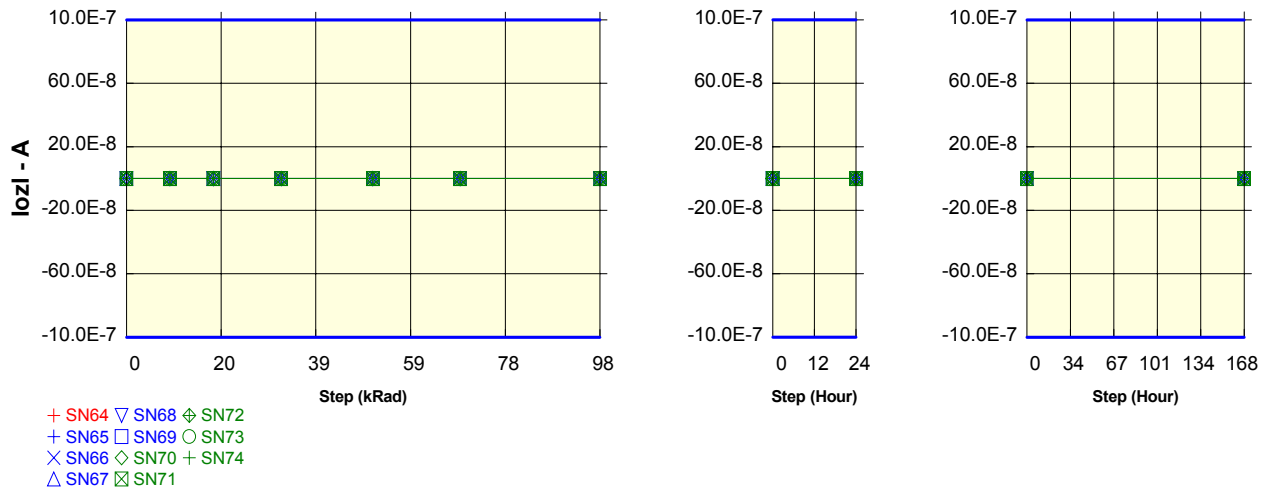
Parameter : Input Low Leakage Current : lozIDQ07

Unit : A

Spec Limit Min : -10.0E-7

Spec Limit Max : 10.0E-7

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-10.0E-11	-50.0E-12	-10.0E-11	-10.0E-11	-50.0E-12	-15.0E-11	-10.0E-11
SN65	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12
SN66	-10.0E-11	00.0E+0	-50.0E-12	-10.0E-11	-10.0E-11	-50.0E-12	-10.0E-11
SN67	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12
SN68	-50.0E-12	00.0E+0	00.0E+0	-15.0E-11	-50.0E-12	-10.0E-11	-50.0E-12
SN69	-50.0E-12	-10.0E-11	-50.0E-12	-10.0E-11	-15.0E-11	00.0E+0	-50.0E-12
SN70	-50.0E-12	-50.0E-12	00.0E+0	-10.0E-11	-10.0E-11	-50.0E-12	-10.0E-11
SN71	-50.0E-12	-10.0E-11	-50.0E-12	-10.0E-11	00.0E+0	-50.0E-12	00.0E+0
SN72	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	00.0E+0	-50.0E-12	-50.0E-12
SN73	-50.0E-12	-50.0E-12	00.0E+0	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12
SN74	-50.0E-12	-25.0E-11	-10.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	00.0E+0
Statistics							
Min	-10.0E-11	-25.0E-11	-10.0E-11	-15.0E-11	-15.0E-11	-10.0E-11	-10.0E-11
Max	-50.0E-12	00.0E+0	00.0E+0	-50.0E-12	00.0E+0	00.0E+0	00.0E+0
Mean	-60.0E-12	-75.0E-12	-50.0E-12	-85.0E-12	-65.0E-12	-60.0E-12	-50.0E-12
Sigma	21.1E-12	71.7E-12	40.8E-12	33.7E-12	47.4E-12	31.6E-12	33.3E-12

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-10.0E-11	-10.0E-11
SN65	-50.0E-12	-50.0E-12
SN66	-10.0E-11	-50.0E-12
SN67	-50.0E-12	-10.0E-11
SN68	-50.0E-12	00.0E+0
SN69	-50.0E-12	-50.0E-12
SN70	-10.0E-11	-50.0E-12
SN71	00.0E+0	-10.0E-11
SN72	-50.0E-12	-50.0E-12
SN73	-50.0E-12	-50.0E-12
SN74	00.0E+0	-50.0E-12
Statistics		
Min	-10.0E-11	-10.0E-11
Max	00.0E+0	00.0E+0
Mean	-50.0E-12	-55.0E-12
Sigma	33.3E-12	28.4E-12

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-10.0E-11	-50.0E-12
SN65	-50.0E-12	00.0E+0
SN66	-50.0E-12	-50.0E-12
SN67	-10.0E-11	-50.0E-12
SN68	00.0E+0	-50.0E-12
SN69	-50.0E-12	00.0E+0
SN70	-50.0E-12	-10.0E-11
SN71	-10.0E-11	-50.0E-12
SN72	-50.0E-12	-50.0E-12
SN73	-50.0E-12	-50.0E-12
SN74	-50.0E-12	-50.0E-12
Statistics		
Min	-10.0E-11	-10.0E-11
Max	00.0E+0	00.0E+0
Mean	-55.0E-12	-45.0E-12
Sigma	28.4E-12	28.4E-12

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

Test conditions : Tid

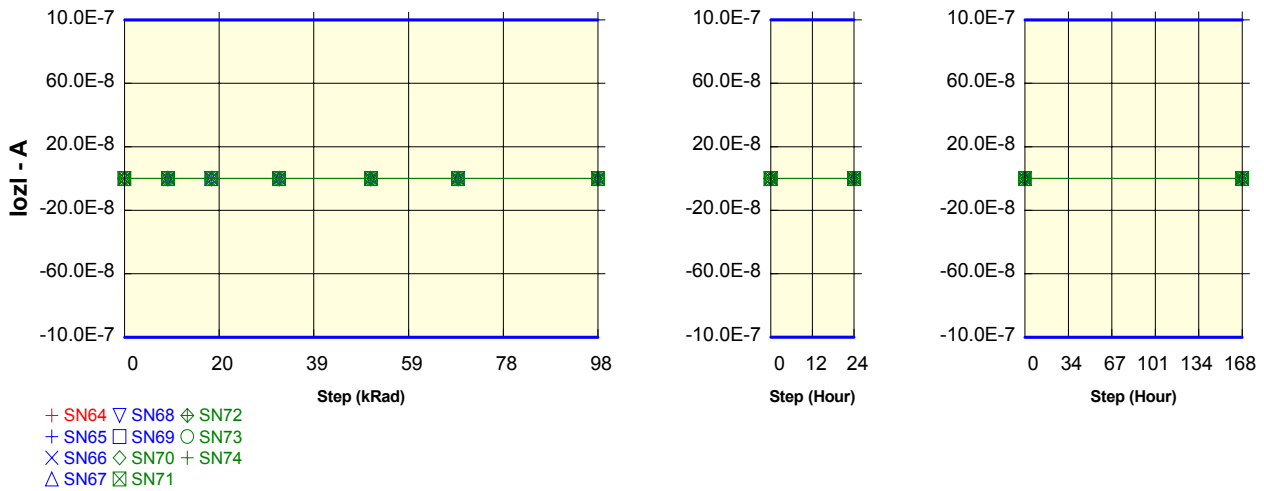
Parameter : Input Low Leakage Current : lozIDQ05

Unit : A

Spec Limit Min : -10.0E-7

Spec Limit Max : 10.0E-7

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-50.0E-12	-15.0E-11	00.0E+0	-50.0E-12	-50.0E-12	-15.0E-11	-10.0E-11
SN65	-10.0E-11	-50.0E-12	-50.0E-12	00.0E+0	-50.0E-12	-15.0E-11	-50.0E-12
SN66	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12
SN67	-10.0E-11	00.0E+0	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	00.0E+0
SN68	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11	-10.0E-11
SN69	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	00.0E+0	-10.0E-11
SN70	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11	-10.0E-11
SN71	-15.0E-11	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12
SN72	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-10.0E-11
SN73	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	00.0E+0	-50.0E-12
SN74	00.0E+0	-15.0E-11	00.0E+0	-50.0E-12	-50.0E-12	00.0E+0	-50.0E-12
Statistics							
Min	-15.0E-11	-15.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	-15.0E-11	-10.0E-11
Max	00.0E+0	00.0E+0	00.0E+0	00.0E+0	-50.0E-12	00.0E+0	00.0E+0
Mean	-70.0E-12	-55.0E-12	-45.0E-12	-65.0E-12	-50.0E-12	-65.0E-12	-65.0E-12
Sigma	42.2E-12	36.9E-12	15.8E-12	33.7E-12	81.8E-20	53.0E-12	33.7E-12

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-10.0E-11	-10.0E-11
SN65	-50.0E-12	-10.0E-11
SN66	-50.0E-12	-50.0E-12
SN67	00.0E+0	-50.0E-12
SN68	-10.0E-11	-50.0E-12
SN69	-10.0E-11	-50.0E-12
SN70	-10.0E-11	-10.0E-11
SN71	-50.0E-12	-50.0E-12
SN72	-10.0E-11	-50.0E-12
SN73	-50.0E-12	-10.0E-11
SN74	-50.0E-12	-10.0E-11
Statistics		
Min	-10.0E-11	-10.0E-11
Max	00.0E+0	-50.0E-12
Mean	-65.0E-12	-70.0E-12
Sigma	33.7E-12	25.8E-12

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-10.0E-11	-50.0E-12
SN65	-10.0E-11	-50.0E-12
SN66	-50.0E-12	-50.0E-12
SN67	-50.0E-12	-10.0E-11
SN68	-50.0E-12	-50.0E-12
SN69	-50.0E-12	-50.0E-12
SN70	-10.0E-11	-50.0E-12
SN71	-50.0E-12	-50.0E-12
SN72	-50.0E-12	-50.0E-12
SN73	-10.0E-11	-50.0E-12
SN74	-10.0E-11	-50.0E-12
Statistics		
Min	-10.0E-11	-10.0E-11
Max	-50.0E-12	-50.0E-12
Mean	-70.0E-12	-55.0E-12
Sigma	25.8E-12	15.8E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

Parameter : Input Low Leakage Current : lozIDQ04

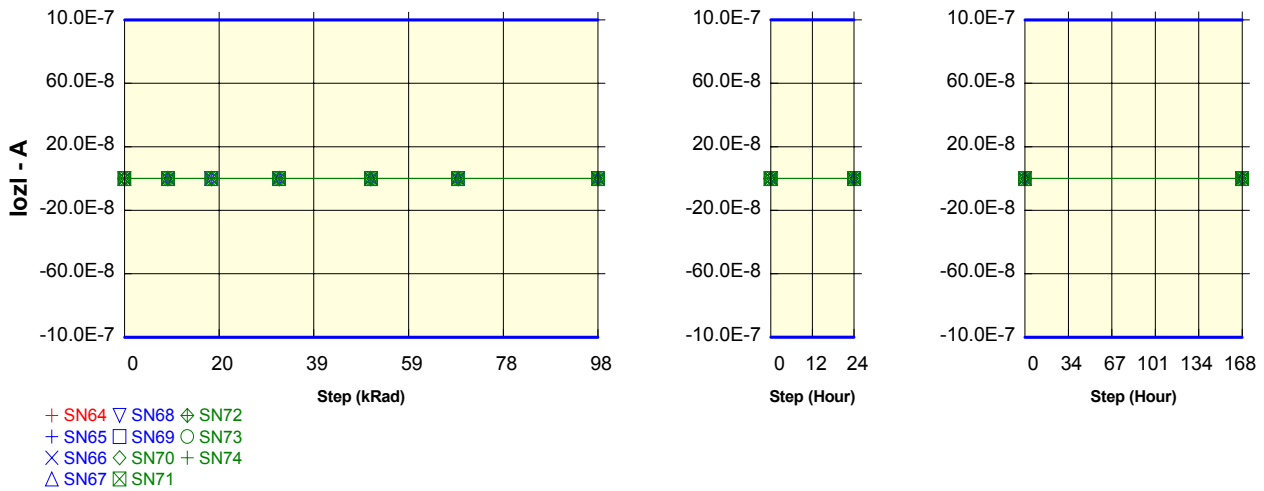
-

Unit : A

Spec Limit Min : -10.0E-7

Spec Limit Max : 10.0E-7

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-15.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12
SN65	-15.0E-11	-50.0E-12	-50.0E-12	-10.0E-11	-10.0E-11	00.0E+0	-50.0E-12
SN66	-15.0E-11	-15.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	00.0E+0	-10.0E-11
SN67	-15.0E-11	-50.0E-12	50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12
SN68	-20.0E-11	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12
SN69	-10.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12
SN70	-10.0E-11	-10.0E-11	-10.0E-11	-10.0E-11	00.0E+0	-50.0E-12	-15.0E-11
SN71	-15.0E-11	-15.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12
SN72	-15.0E-11	-10.0E-11	-50.0E-12	-15.0E-11	-50.0E-12	-10.0E-11	00.0E+0
SN73	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12
SN74	-10.0E-11	-20.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	00.0E+0	-50.0E-12
Statistics							
Min	-20.0E-11	-20.0E-11	-10.0E-11	-15.0E-11	-10.0E-11	-10.0E-11	-15.0E-11
Max	-10.0E-11	-50.0E-12	50.0E-12	-50.0E-12	00.0E+0	00.0E+0	00.0E+0
Mean	-13.5E-11	-10.5E-11	-45.0E-12	-90.0E-12	-50.0E-12	-45.0E-12	-60.0E-12
Sigma	33.7E-12	49.7E-12	36.9E-12	31.6E-12	23.6E-12	36.9E-12	39.4E-12

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-50.0E-12	-50.0E-12
SN65	-50.0E-12	-10.0E-11
SN66	-10.0E-11	-50.0E-12
SN67	-50.0E-12	-10.0E-11
SN68	-50.0E-12	-50.0E-12
SN69	-50.0E-12	00.0E+0
SN70	-15.0E-11	00.0E+0
SN71	-50.0E-12	-50.0E-12
SN72	00.0E+0	-50.0E-12
SN73	-50.0E-12	-10.0E-11
SN74	-50.0E-12	-50.0E-12
Statistics		
Min	-15.0E-11	-10.0E-11
Max	00.0E+0	00.0E+0
Mean	-60.0E-12	-55.0E-12
Sigma	39.4E-12	36.9E-12

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-50.0E-12	-10.0E-11
SN65	-10.0E-11	00.0E+0
SN66	-50.0E-12	-50.0E-12
SN67	-10.0E-11	00.0E+0
SN68	-50.0E-12	-50.0E-12
SN69	00.0E+0	00.0E+0
SN70	00.0E+0	-50.0E-12
SN71	-50.0E-12	-50.0E-12
SN72	-50.0E-12	00.0E+0
SN73	-10.0E-11	-50.0E-12
SN74	-50.0E-12	00.0E+0
Statistics		
Min	-10.0E-11	-50.0E-12
Max	00.0E+0	00.0E+0
Mean	-55.0E-12	-25.0E-12
Sigma	36.9E-12	26.4E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

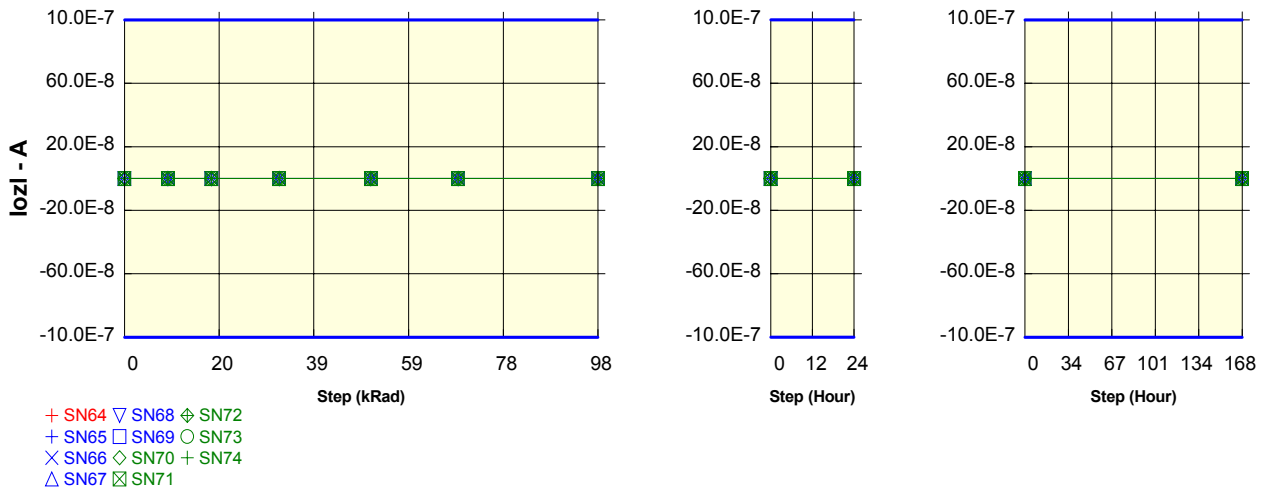
Parameter : Input Low Leakage Current : lozIDQ03

Unit : A

Spec Limit Min : -10.0E-7

Spec Limit Max : 10.0E-7

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-50.0E-12	-50.0E-12	00.0E+0	-10.0E-11	-50.0E-12	-15.0E-11	-10.0E-11
SN65	-15.0E-11	-10.0E-11	-50.0E-12	-50.0E-12	00.0E+0	-10.0E-11	-15.0E-11
SN66	-50.0E-12	-15.0E-11	00.0E+0	-50.0E-12	-50.0E-12	-50.0E-12	-15.0E-11
SN67	-10.0E-11	-15.0E-11	-10.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12
SN68	-15.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-15.0E-11
SN69	-20.0E-11	00.0E+0	00.0E+0	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12
SN70	-15.0E-11	-50.0E-12	-50.0E-12	-10.0E-11	00.0E+0	-15.0E-11	-10.0E-11
SN71	-20.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12
SN72	-25.0E-11	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12
SN73	-15.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	00.0E+0	-50.0E-12	-10.0E-11
SN74	-15.0E-11	-20.0E-11	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-10.0E-11
Statistics							
Min	-25.0E-11	-20.0E-11	-10.0E-11	-10.0E-11	-50.0E-12	-15.0E-11	-15.0E-11
Max	-50.0E-12	00.0E+0	00.0E+0	-50.0E-12	00.0E+0	-50.0E-12	-50.0E-12
Mean	-15.5E-11	-10.0E-11	-45.0E-12	-75.0E-12	-35.0E-12	-85.0E-12	-95.0E-12
Sigma	55.0E-12	57.7E-12	28.4E-12	26.4E-12	24.2E-12	33.7E-12	43.8E-12

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-10.0E-11	-10.0E-11
SN65	-15.0E-11	-50.0E-12
SN66	-15.0E-11	-50.0E-12
SN67	-50.0E-12	-50.0E-12
SN68	-15.0E-11	-50.0E-12
SN69	-50.0E-12	-50.0E-12
SN70	-10.0E-11	-10.0E-11
SN71	-50.0E-12	-10.0E-11
SN72	-50.0E-12	-10.0E-11
SN73	-10.0E-11	00.0E+0
SN74	-10.0E-11	-50.0E-12
Statistics		
Min	-15.0E-11	-10.0E-11
Max	-50.0E-12	00.0E+0
Mean	-95.0E-12	-60.0E-12
Sigma	43.8E-12	31.6E-12

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-10.0E-11	00.0E+0
SN65	-50.0E-12	-10.0E-11
SN66	-50.0E-12	00.0E+0
SN67	-50.0E-12	-50.0E-12
SN68	-50.0E-12	-15.0E-11
SN69	-50.0E-12	-15.0E-11
SN70	-10.0E-11	-15.0E-11
SN71	-10.0E-11	-15.0E-11
SN72	-10.0E-11	-15.0E-11
SN73	00.0E+0	-50.0E-12
SN74	-50.0E-12	-15.0E-11
Statistics		
Min	-10.0E-11	-15.0E-11
Max	00.0E+0	00.0E+0
Mean	-60.0E-12	-11.0E-11
Sigma	31.6E-12	56.8E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

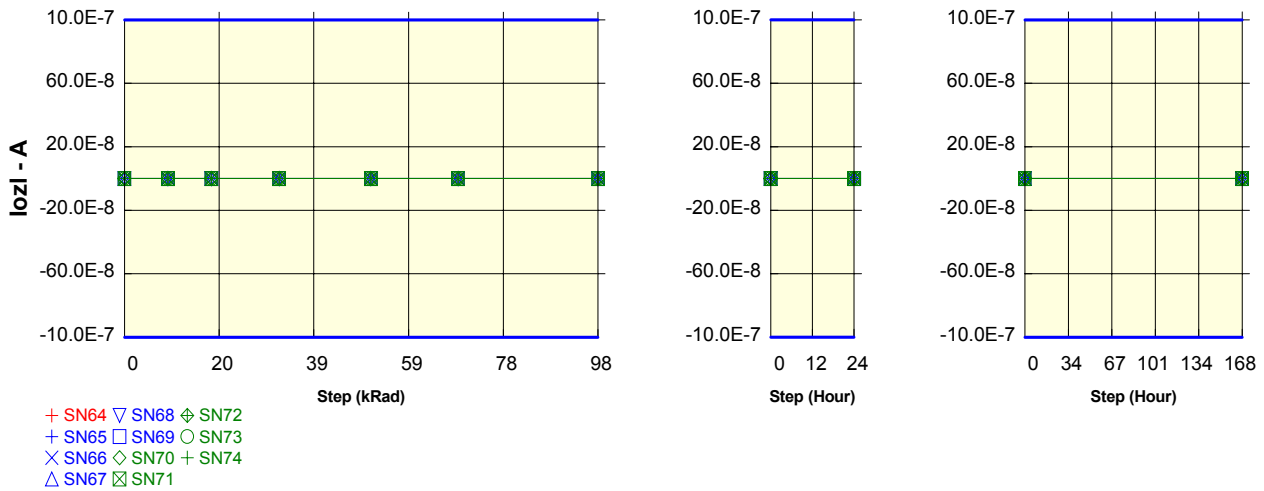
Parameter : Input Low Leakage Current : lozIDQ00

Unit : A

Spec Limit Min : -10.0E-7

Spec Limit Max : 10.0E-7

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-50.0E-12	00.0E+0	-50.0E-12	-50.0E-12	-50.0E-12	00.0E+0	-50.0E-12
SN65	-10.0E-11	50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12	-50.0E-12	-10.0E-11
SN66	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11
SN67	-50.0E-12	00.0E+0	00.0E+0	-50.0E-12	00.0E+0	00.0E+0	-10.0E-11
SN68	-10.0E-11	-50.0E-12	-50.0E-12	-10.0E-11	-10.0E-11	-10.0E-11	00.0E+0
SN69	-50.0E-12	-50.0E-12	00.0E+0	-50.0E-12	-50.0E-12	-10.0E-11	-10.0E-11
SN70	-10.0E-11	-10.0E-11	00.0E+0	-10.0E-11	-50.0E-12	-10.0E-11	-50.0E-12
SN71	-10.0E-11	-50.0E-12	-50.0E-12	-10.0E-11	-50.0E-12	00.0E+0	-50.0E-12
SN72	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	00.0E+0	-10.0E-11	-50.0E-12
SN73	-50.0E-12	00.0E+0	00.0E+0	-50.0E-12	00.0E+0	-50.0E-12	-50.0E-12
SN74	-50.0E-12	-20.0E-11	00.0E+0	-10.0E-11	00.0E+0	-50.0E-12	-50.0E-12
Statistics							
Min	-10.0E-11	-20.0E-11	-50.0E-12	-10.0E-11	-10.0E-11	-10.0E-11	-10.0E-11
Max	-50.0E-12	50.0E-12	00.0E+0	-50.0E-12	00.0E+0	00.0E+0	00.0E+0
Mean	-70.0E-12	-50.0E-12	-25.0E-12	-75.0E-12	-35.0E-12	-60.0E-12	-65.0E-12
Sigma	25.8E-12	66.7E-12	26.4E-12	26.4E-12	33.7E-12	39.4E-12	33.7E-12

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-50.0E-12	-50.0E-12
SN65	-10.0E-11	00.0E+0
SN66	-10.0E-11	-50.0E-12
SN67	-10.0E-11	-50.0E-12
SN68	00.0E+0	-10.0E-11
SN69	-10.0E-11	-50.0E-12
SN70	-50.0E-12	-50.0E-12
SN71	-50.0E-12	-50.0E-12
SN72	-50.0E-12	-50.0E-12
SN73	-50.0E-12	-15.0E-11
SN74	-50.0E-12	-50.0E-12
Statistics		
Min	-10.0E-11	-15.0E-11
Max	00.0E+0	00.0E+0
Mean	-65.0E-12	-60.0E-12
Sigma	33.7E-12	39.4E-12

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-50.0E-12	-10.0E-11
SN65	00.0E+0	00.0E+0
SN66	-50.0E-12	-15.0E-11
SN67	-50.0E-12	-50.0E-12
SN68	-10.0E-11	-50.0E-12
SN69	-50.0E-12	-10.0E-11
SN70	-50.0E-12	-50.0E-12
SN71	-50.0E-12	-50.0E-12
SN72	-50.0E-12	-10.0E-11
SN73	-15.0E-11	-50.0E-12
SN74	-50.0E-12	-50.0E-12
Statistics		
Min	-15.0E-11	-15.0E-11
Max	00.0E+0	00.0E+0
Mean	-60.0E-12	-65.0E-12
Sigma	39.4E-12	41.2E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

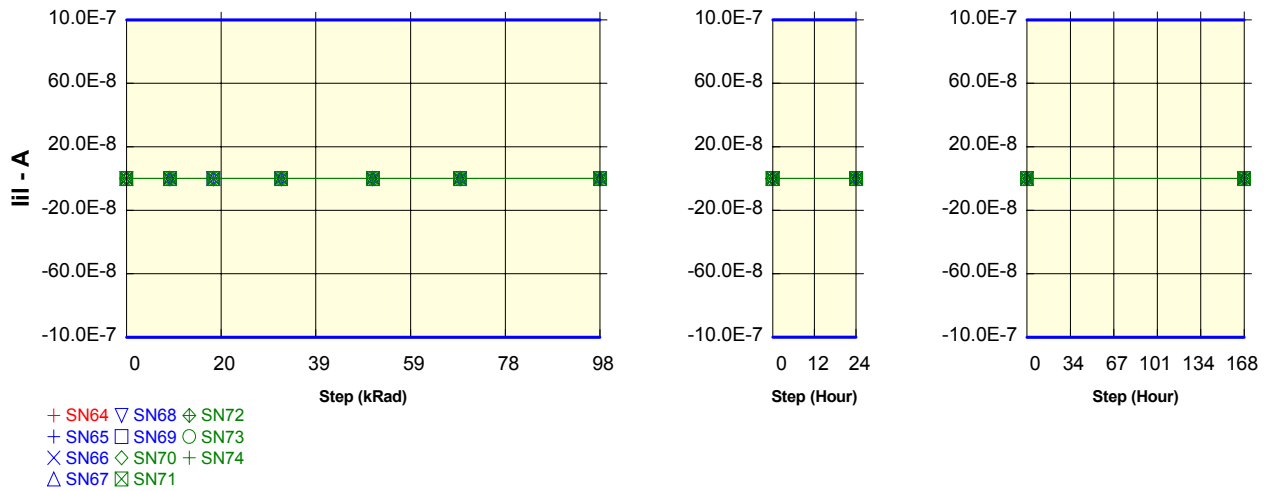
Parameter : Input Low Leakage Current : IilCLK

Unit : A

Spec Limit Min : -10.0E-7

Spec Limit Max : 10.0E-7

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-10.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	00.0E+0	-10.0E-11	-10.0E-11
SN65	-20.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	-10.0E-11	00.0E+0	-10.0E-11
SN66	-15.0E-11	-10.0E-11	-50.0E-12	-50.0E-12	00.0E+0	-10.0E-11	-10.0E-11
SN67	-15.0E-11	-50.0E-12	00.0E+0	-10.0E-11	-50.0E-12	-50.0E-12	-10.0E-11
SN68	-20.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-15.0E-11	-15.0E-11
SN69	-15.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	-15.0E-11	-10.0E-11	-50.0E-12
SN70	-10.0E-11	-50.0E-12	00.0E+0	-10.0E-11	-50.0E-12	-10.0E-11	-10.0E-11
SN71	-15.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11	-15.0E-11
SN72	-10.0E-11	-10.0E-11	-50.0E-12	-10.0E-11	00.0E+0	-50.0E-12	-50.0E-12
SN73	-15.0E-11	-50.0E-12	00.0E+0	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12
SN74	-10.0E-11	-15.0E-11	-50.0E-12	-10.0E-11	-15.0E-11	-50.0E-12	-10.0E-11
Statistics							
Min	-20.0E-11	-15.0E-11	-50.0E-12	-10.0E-11	-15.0E-11	-15.0E-11	-15.0E-11
Max	-10.0E-11	-50.0E-12	00.0E+0	-50.0E-12	00.0E+0	00.0E+0	-50.0E-12
Mean	-14.5E-11	-80.0E-12	-35.0E-12	-85.0E-12	-65.0E-12	-75.0E-12	-95.0E-12
Sigma	36.9E-12	35.0E-12	24.2E-12	24.2E-12	53.0E-12	42.5E-12	36.9E-12

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-10.0E-11	-15.0E-11
SN65	-10.0E-11	00.0E+0
SN66	-10.0E-11	-10.0E-11
SN67	-10.0E-11	-50.0E-12
SN68	-15.0E-11	-50.0E-12
SN69	-50.0E-12	-15.0E-11
SN70	-10.0E-11	-50.0E-12
SN71	-15.0E-11	-10.0E-11
SN72	-50.0E-12	-10.0E-11
SN73	-50.0E-12	-10.0E-11
SN74	-10.0E-11	-10.0E-11
Statistics		
Min	-15.0E-11	-15.0E-11
Max	-50.0E-12	00.0E+0
Mean	-95.0E-12	-80.0E-12
Sigma	36.9E-12	42.2E-12

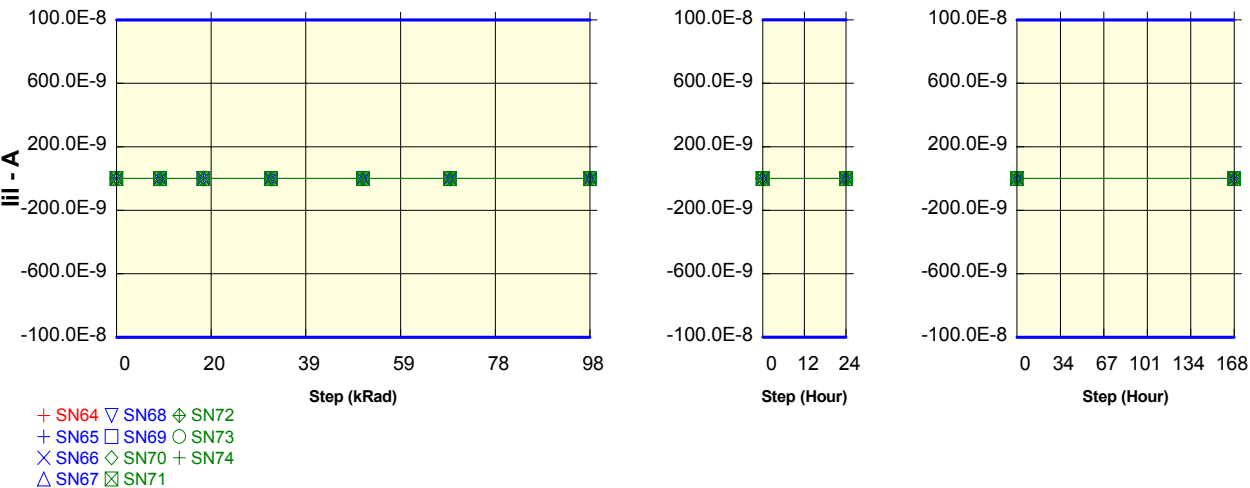
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-15.0E-11	-50.0E-12
SN65	00.0E+0	00.0E+0
SN66	-10.0E-11	-50.0E-12
SN67	-50.0E-12	-10.0E-11
SN68	-50.0E-12	00.0E+0
SN69	-15.0E-11	-10.0E-11
SN70	-50.0E-12	00.0E+0
SN71	-10.0E-11	00.0E+0
SN72	-10.0E-11	-50.0E-12
SN73	-10.0E-11	-10.0E-11
SN74	-10.0E-11	-50.0E-12
Statistics		
Min	-15.0E-11	-10.0E-11
Max	00.0E+0	00.0E+0
Mean	-80.0E-12	-45.0E-12
Sigma	42.2E-12	43.8E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Input Low Leakage Current : IiICKE

Unit : A
Spec Limit Min : -100.0E-8
Spec Limit Max : 100.0E-8
Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-100.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-500.0E-13	-100.0E-12	-150.0E-12
SN65	-500.0E-13	-100.0E-12	-150.0E-12	-100.0E-12	-500.0E-13	-500.0E-13	-150.0E-12
SN66	-100.0E-12	-500.0E-13	-500.0E-13	-150.0E-12	-500.0E-13	000.0E+0	-150.0E-12
SN67	-100.0E-12	-500.0E-13	000.0E+0	-150.0E-12	-500.0E-13	-100.0E-12	-100.0E-12
SN68	-150.0E-12	-100.0E-12	-500.0E-13	-100.0E-12	-100.0E-12	-100.0E-12	-500.0E-13
SN69	-500.0E-13	-100.0E-12	-500.0E-13	-150.0E-12	-100.0E-12	-500.0E-13	-500.0E-13
SN70	-500.0E-13	-150.0E-12	-500.0E-13	-500.0E-13	-100.0E-12	-150.0E-12	-100.0E-12
SN71	-100.0E-12	-500.0E-13	-500.0E-13	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN72	-500.0E-13	000.0E+0	-500.0E-13	-100.0E-12	-100.0E-12	-500.0E-13	-100.0E-12
SN73	-500.0E-13	-500.0E-13	-500.0E-13	-150.0E-12	-100.0E-12	-100.0E-12	-100.0E-12
SN74	-100.0E-12	-500.0E-13	-100.0E-12	-500.0E-13	-500.0E-13	-100.0E-12	-100.0E-12
Statistics							
Min	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
Max	-500.0E-13	000.0E+0	000.0E+0	-500.0E-13	-500.0E-13	000.0E+0	-500.0E-13
Mean	-800.0E-13	-700.0E-13	-600.0E-13	-110.0E-12	-850.0E-13	-850.0E-13	-105.0E-12
Sigma	349.6E-13	421.6E-13	394.4E-13	394.4E-13	337.5E-13	474.3E-13	368.9E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-150.0E-12	-100.0E-12
SN65	-150.0E-12	-150.0E-12
SN66	-150.0E-12	-150.0E-12
SN67	-100.0E-12	-100.0E-12
SN68	-500.0E-13	-100.0E-12
SN69	-500.0E-13	-100.0E-12
SN70	-100.0E-12	-100.0E-12
SN71	-150.0E-12	-500.0E-13
SN72	-100.0E-12	-150.0E-12
SN73	-100.0E-12	-100.0E-12
SN74	-100.0E-12	-100.0E-12
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-500.0E-13	-500.0E-13
Mean	-105.0E-12	-110.0E-12
Sigma	368.9E-13	316.2E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-100.0E-12	-100.0E-12
SN65	-150.0E-12	-100.0E-12
SN66	-150.0E-12	-100.0E-12
SN67	-100.0E-12	-500.0E-13
SN68	-100.0E-12	-150.0E-12
SN69	-100.0E-12	-500.0E-13
SN70	-100.0E-12	-500.0E-13
SN71	-500.0E-13	-500.0E-13
SN72	-150.0E-12	-100.0E-12
SN73	-100.0E-12	-100.0E-12
SN74	-100.0E-12	-500.0E-13
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-500.0E-13	-500.0E-13
Mean	-110.0E-12	-800.0E-13
Sigma	316.2E-13	349.6E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

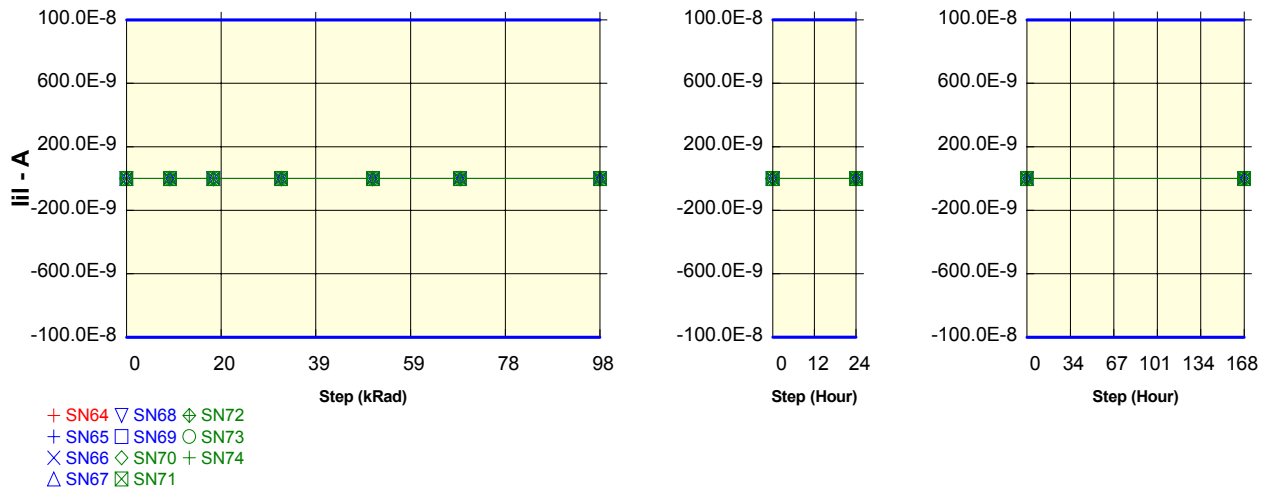
Parameter : Input Low Leakage Current : Iil/RAS

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-200.0E-12	-200.0E-12	-500.0E-13	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12
SN65	-200.0E-12	-150.0E-12	-100.0E-12	-200.0E-12	-100.0E-12	-150.0E-12	-100.0E-12
SN66	-150.0E-12	-150.0E-12	-500.0E-13	-200.0E-12	-200.0E-12	-100.0E-12	-150.0E-12
SN67	-200.0E-12	-100.0E-12	-500.0E-13	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12
SN68	-200.0E-12	-150.0E-12	-100.0E-12	-200.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN69	-150.0E-12	-150.0E-12	-100.0E-12	-200.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN70	-100.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-100.0E-12
SN71	-200.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-200.0E-12
SN72	-150.0E-12	-100.0E-12	-100.0E-12	-200.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN73	-150.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-150.0E-12	-100.0E-12	-150.0E-12
SN74	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
Statistics							
Min	-200.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-200.0E-12
Max	-100.0E-12	-100.0E-12	-500.0E-13	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12
Mean	-165.0E-12	-130.0E-12	-100.0E-12	-175.0E-12	-130.0E-12	-140.0E-12	-145.0E-12
Sigma	337.5E-13	258.2E-13	333.3E-13	353.6E-13	349.6E-13	316.2E-13	283.8E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-150.0E-12	-150.0E-12
SN65	-100.0E-12	-150.0E-12
SN66	-150.0E-12	-100.0E-12
SN67	-150.0E-12	-150.0E-12
SN68	-150.0E-12	-150.0E-12
SN69	-150.0E-12	-150.0E-12
SN70	-100.0E-12	-150.0E-12
SN71	-200.0E-12	-100.0E-12
SN72	-150.0E-12	-150.0E-12
SN73	-150.0E-12	-100.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-200.0E-12	-150.0E-12
Max	-100.0E-12	-100.0E-12
Mean	-145.0E-12	-135.0E-12
Sigma	283.8E-13	241.5E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-150.0E-12	-100.0E-12
SN65	-150.0E-12	-150.0E-12
SN66	-100.0E-12	-500.0E-13
SN67	-150.0E-12	-100.0E-12
SN68	-150.0E-12	-500.0E-13
SN69	-150.0E-12	-100.0E-12
SN70	-150.0E-12	-100.0E-12
SN71	-100.0E-12	-150.0E-12
SN72	-150.0E-12	-150.0E-12
SN73	-100.0E-12	-150.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-100.0E-12	-500.0E-13
Mean	-135.0E-12	-115.0E-12
Sigma	241.5E-13	411.6E-13

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

Test conditions : Tid

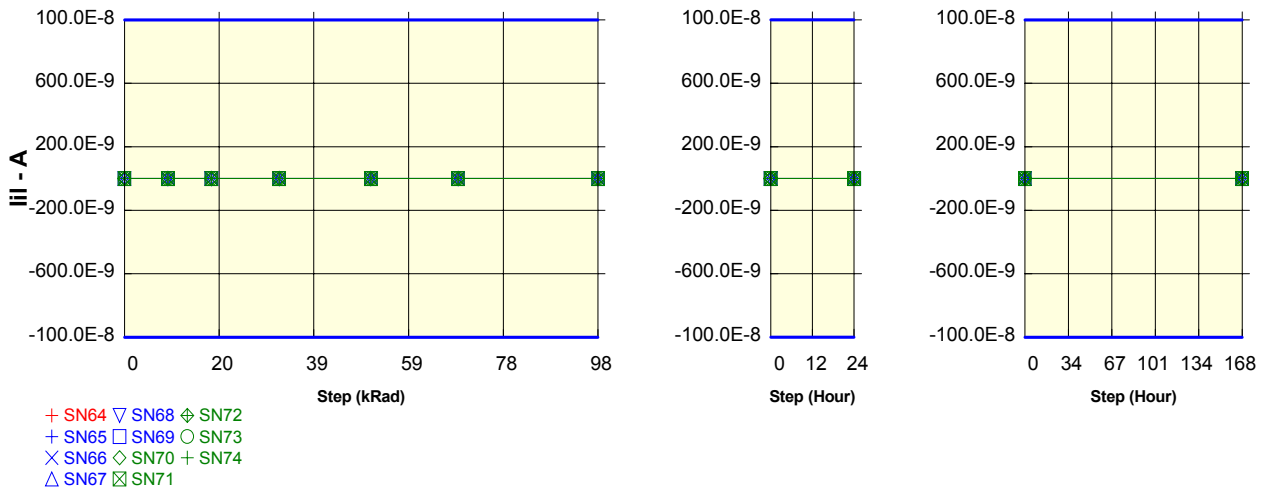
Parameter : Input Low Leakage Current : IilBA1

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-250.0E-12	-300.0E-12	-150.0E-12	-200.0E-12	-250.0E-12	-450.0E-12	-150.0E-12
SN65	-400.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-200.0E-12
SN66	-300.0E-12	-350.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-250.0E-12
SN67	-250.0E-12	-250.0E-12	-150.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-150.0E-12
SN68	-250.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-200.0E-12
SN69	-300.0E-12	-300.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-350.0E-12	-200.0E-12
SN70	-250.0E-12	-250.0E-12	-150.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-200.0E-12
SN71	-250.0E-12	-200.0E-12	-150.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-100.0E-12
SN72	-250.0E-12	-250.0E-12	-100.0E-12	-200.0E-12	-150.0E-12	-300.0E-12	-200.0E-12
SN73	-200.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-200.0E-12
SN74	-200.0E-12	-350.0E-12	-150.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-200.0E-12
Statistics							
Min	-400.0E-12	-350.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-350.0E-12	-250.0E-12
Max	-200.0E-12	-200.0E-12	-100.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-100.0E-12
Mean	-265.0E-12	-255.0E-12	-160.0E-12	-220.0E-12	-210.0E-12	-260.0E-12	-190.0E-12
Sigma	579.8E-13	598.6E-13	316.2E-13	258.2E-13	316.2E-13	394.4E-13	394.4E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-150.0E-12	-150.0E-12
SN65	-200.0E-12	-150.0E-12
SN66	-250.0E-12	-100.0E-12
SN67	-150.0E-12	-150.0E-12
SN68	-200.0E-12	-100.0E-12
SN69	-200.0E-12	-100.0E-12
SN70	-200.0E-12	-100.0E-12
SN71	-100.0E-12	-100.0E-12
SN72	-200.0E-12	-150.0E-12
SN73	-200.0E-12	-100.0E-12
SN74	-200.0E-12	-150.0E-12
Statistics		
Min	-250.0E-12	-150.0E-12
Max	-100.0E-12	-100.0E-12
Mean	-190.0E-12	-120.0E-12
Sigma	394.4E-13	258.2E-13

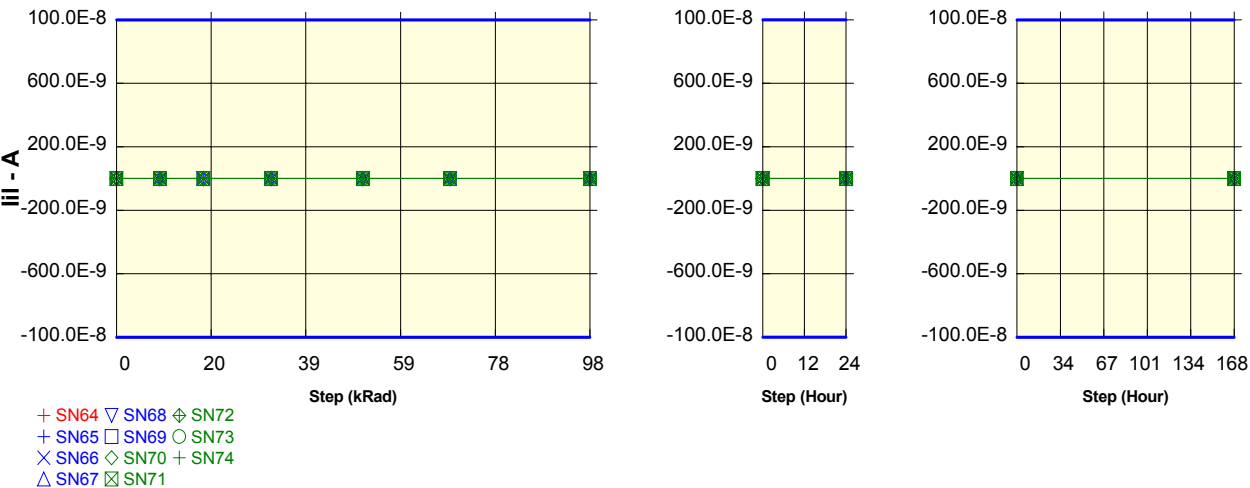
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-150.0E-12	-100.0E-12
SN65	-150.0E-12	-100.0E-12
SN66	-100.0E-12	-150.0E-12
SN67	-150.0E-12	-100.0E-12
SN68	-100.0E-12	-250.0E-12
SN69	-100.0E-12	-150.0E-12
SN70	-100.0E-12	-100.0E-12
SN71	-100.0E-12	-100.0E-12
SN72	-150.0E-12	-150.0E-12
SN73	-100.0E-12	-150.0E-12
SN74	-150.0E-12	-100.0E-12
Statistics		
Min	-150.0E-12	-250.0E-12
Max	-100.0E-12	-100.0E-12
Mean	-120.0E-12	-135.0E-12
Sigma	258.2E-13	474.3E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
 Parameter : Input Low Leakage Current : IilBA0

Unit : A
 Spec Limit Min : -100.0E-8
 Spec Limit Max : 100.0E-8
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-100.0E-12
SN65	-200.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN66	-100.0E-12	-200.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN67	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-100.0E-12
SN68	-150.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-200.0E-12	-150.0E-12
SN69	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-100.0E-12	-200.0E-12	-100.0E-12
SN70	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN71	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN72	-150.0E-12	-150.0E-12	-500.0E-13	-200.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN73	-200.0E-12	-150.0E-12	-500.0E-13	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN74	-500.0E-13	-150.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
Statistics							
Min	-200.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-150.0E-12
Max	-500.0E-13	-100.0E-12	-500.0E-13	-100.0E-12	-100.0E-12	-150.0E-12	-100.0E-12
Mean	-140.0E-12	-135.0E-12	-110.0E-12	-135.0E-12	-120.0E-12	-160.0E-12	-140.0E-12
Sigma	459.5E-13	337.5E-13	394.4E-13	337.5E-13	258.2E-13	210.8E-13	210.8E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-100.0E-12	-150.0E-12
SN65	-150.0E-12	-150.0E-12
SN66	-150.0E-12	-200.0E-12
SN67	-100.0E-12	-150.0E-12
SN68	-150.0E-12	-100.0E-12
SN69	-100.0E-12	-150.0E-12
SN70	-150.0E-12	-100.0E-12
SN71	-150.0E-12	-100.0E-12
SN72	-150.0E-12	-100.0E-12
SN73	-150.0E-12	-150.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-150.0E-12	-200.0E-12
Max	-100.0E-12	-100.0E-12
Mean	-140.0E-12	-135.0E-12
Sigma	210.8E-13	337.5E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-150.0E-12	-500.0E-13
SN65	-150.0E-12	-100.0E-12
SN66	-200.0E-12	-500.0E-13
SN67	-150.0E-12	-150.0E-12
SN68	-100.0E-12	-100.0E-12
SN69	-150.0E-12	-100.0E-12
SN70	-100.0E-12	-150.0E-12
SN71	-100.0E-12	-100.0E-12
SN72	-100.0E-12	-100.0E-12
SN73	-150.0E-12	-100.0E-12
SN74	-150.0E-12	-100.0E-12
Statistics		
Min	-200.0E-12	-150.0E-12
Max	-100.0E-12	-500.0E-13
Mean	-135.0E-12	-105.0E-12
Sigma	337.5E-13	283.8E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

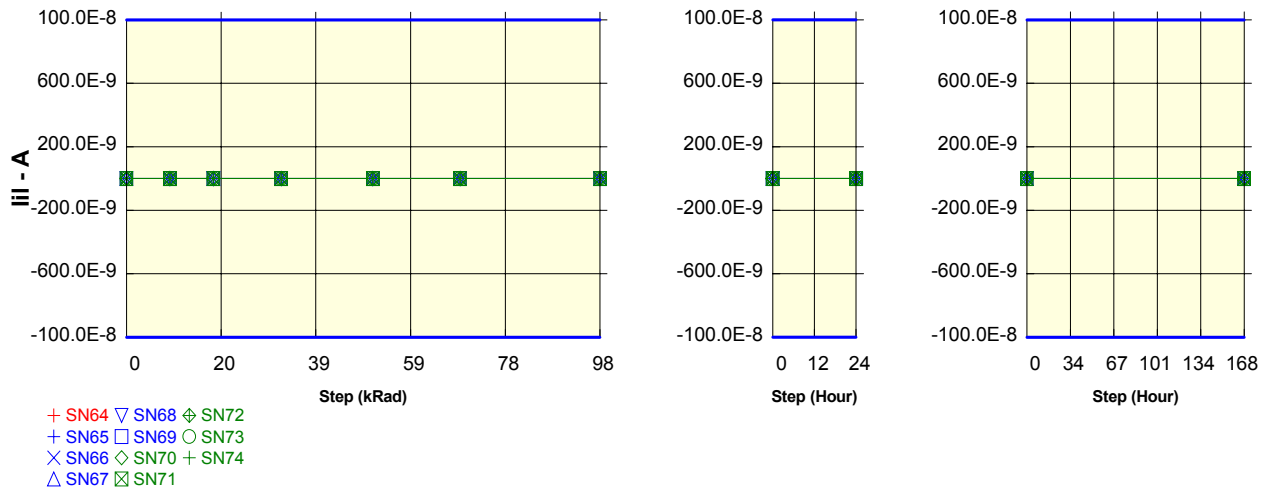
Parameter : Input Low Leakage Current : IiIDQMH

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-350.0E-12	-300.0E-12	-150.0E-12	-250.0E-12	-200.0E-12	-350.0E-12	-200.0E-12
SN65	-300.0E-12	-250.0E-12	-150.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN66	-250.0E-12	-300.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-300.0E-12	-200.0E-12
SN67	-250.0E-12	-200.0E-12	-150.0E-12	-250.0E-12	-150.0E-12	-300.0E-12	-150.0E-12
SN68	-350.0E-12	-200.0E-12	-100.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12
SN69	-250.0E-12	-350.0E-12	-150.0E-12	-200.0E-12	-150.0E-12	-300.0E-12	-150.0E-12
SN70	-200.0E-12	-250.0E-12	-150.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-200.0E-12
SN71	-300.0E-12	-200.0E-12	-100.0E-12	-200.0E-12	-200.0E-12	-350.0E-12	-200.0E-12
SN72	-300.0E-12	-300.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-150.0E-12
SN73	-250.0E-12	-200.0E-12	-150.0E-12	-250.0E-12	-200.0E-12	-200.0E-12	-200.0E-12
SN74	-350.0E-12	-350.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-150.0E-12
Statistics							
Min	-350.0E-12	-350.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-350.0E-12	-250.0E-12
Max	-200.0E-12	-200.0E-12	-100.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-150.0E-12
Mean	-280.0E-12	-260.0E-12	-145.0E-12	-225.0E-12	-205.0E-12	-275.0E-12	-190.0E-12
Sigma	483.0E-13	614.6E-13	283.8E-13	263.5E-13	368.9E-13	485.9E-13	394.4E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-200.0E-12	-150.0E-12
SN65	-250.0E-12	-200.0E-12
SN66	-200.0E-12	-150.0E-12
SN67	-150.0E-12	-150.0E-12
SN68	-250.0E-12	-100.0E-12
SN69	-150.0E-12	-150.0E-12
SN70	-200.0E-12	-100.0E-12
SN71	-200.0E-12	-100.0E-12
SN72	-150.0E-12	-100.0E-12
SN73	-200.0E-12	-150.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-250.0E-12	-200.0E-12
Max	-150.0E-12	-100.0E-12
Mean	-190.0E-12	-135.0E-12
Sigma	394.4E-13	337.5E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-150.0E-12	-100.0E-12
SN65	-200.0E-12	-100.0E-12
SN66	-150.0E-12	-100.0E-12
SN67	-150.0E-12	-100.0E-12
SN68	-100.0E-12	-100.0E-12
SN69	-150.0E-12	-150.0E-12
SN70	-100.0E-12	-150.0E-12
SN71	-100.0E-12	-100.0E-12
SN72	-100.0E-12	-150.0E-12
SN73	-150.0E-12	-100.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-200.0E-12	-150.0E-12
Max	-100.0E-12	-100.0E-12
Mean	-135.0E-12	-120.0E-12
Sigma	337.5E-13	258.2E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

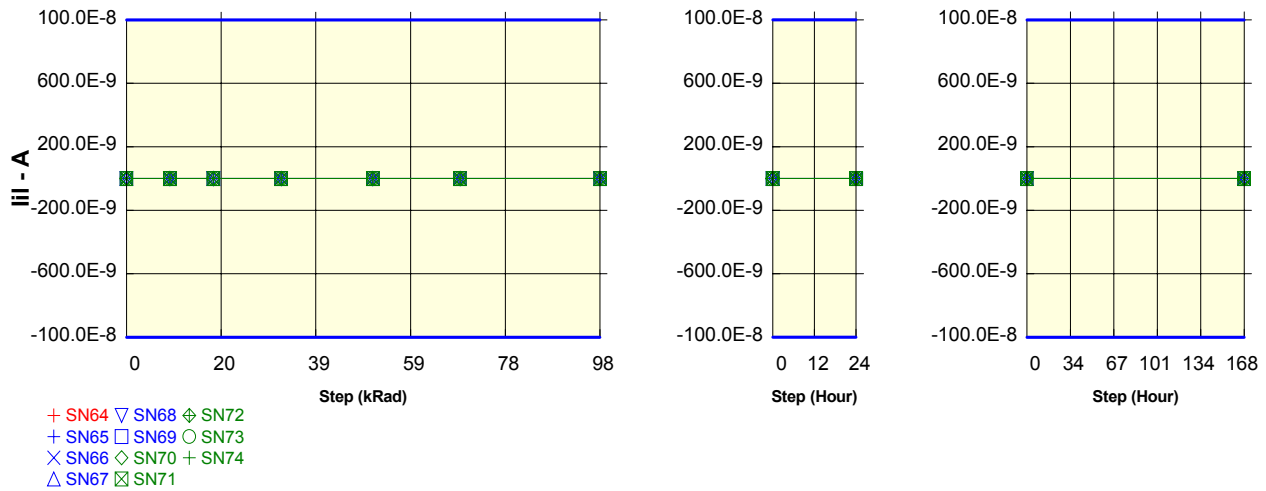
Parameter : Input Low Leakage Current : IilA12

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-250.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-200.0E-12	-100.0E-12
SN65	-200.0E-12	-100.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-100.0E-12
SN66	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12
SN67	-150.0E-12	-100.0E-12	-150.0E-12	-200.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN68	-200.0E-12	-150.0E-12	-100.0E-12	-200.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN69	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN70	-150.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN71	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN72	-100.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN73	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-100.0E-12
SN74	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
Statistics							
Min	-200.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
Max	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12
Mean	-145.0E-12	-130.0E-12	-135.0E-12	-145.0E-12	-135.0E-12	-140.0E-12	-140.0E-12
Sigma	368.9E-13	258.2E-13	241.5E-13	368.9E-13	241.5E-13	210.8E-13	210.8E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-100.0E-12	-100.0E-12
SN65	-100.0E-12	-150.0E-12
SN66	-150.0E-12	-100.0E-12
SN67	-150.0E-12	-100.0E-12
SN68	-150.0E-12	-100.0E-12
SN69	-150.0E-12	-100.0E-12
SN70	-150.0E-12	-500.0E-13
SN71	-150.0E-12	-500.0E-13
SN72	-150.0E-12	-500.0E-13
SN73	-100.0E-12	-100.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-100.0E-12	-500.0E-13
Mean	-140.0E-12	-950.0E-13
Sigma	210.8E-13	368.9E-13

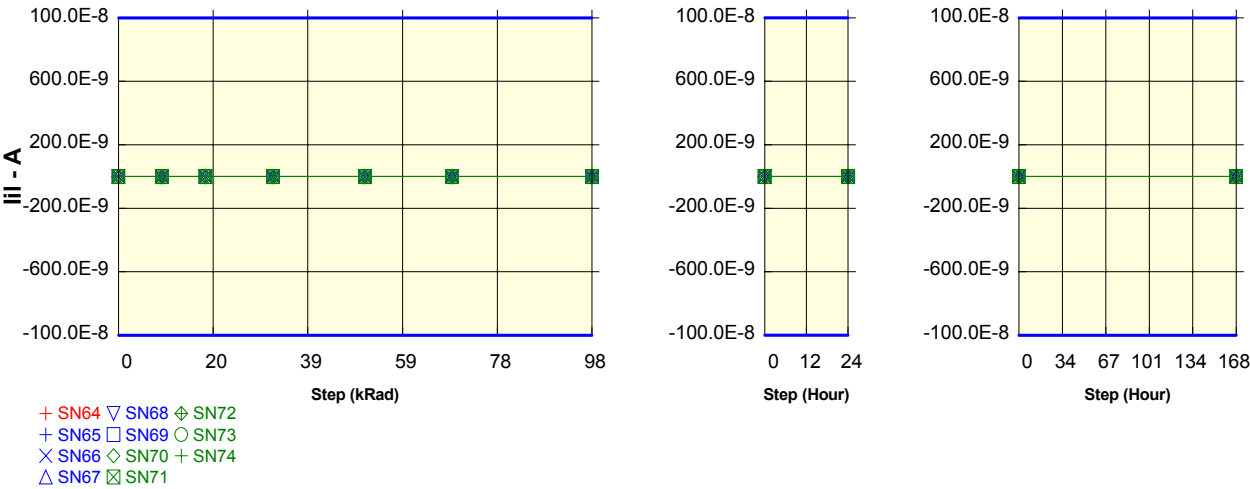
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-100.0E-12	-150.0E-12
SN65	-150.0E-12	-100.0E-12
SN66	-100.0E-12	-150.0E-12
SN67	-100.0E-12	-100.0E-12
SN68	-100.0E-12	-150.0E-12
SN69	-100.0E-12	-100.0E-12
SN70	-500.0E-13	-100.0E-12
SN71	-500.0E-13	-100.0E-12
SN72	-500.0E-13	-100.0E-12
SN73	-100.0E-12	-150.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-500.0E-13	-100.0E-12
Mean	-950.0E-13	-120.0E-12
Sigma	368.9E-13	258.2E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Input Low Leakage Current : IilA11

Unit : A
Spec Limit Min : -100.0E-8
Spec Limit Max : 100.0E-8
Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-150.0E-12	-100.0E-12	-500.0E-13	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN65	-200.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12
SN66	-150.0E-12	-100.0E-12	-150.0E-12	-200.0E-12	-150.0E-12	-100.0E-12	-150.0E-12
SN67	-150.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-200.0E-12	-100.0E-12
SN68	-150.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-100.0E-12
SN69	-150.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN70	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-150.0E-12
SN71	-100.0E-12	-500.0E-13	-100.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-150.0E-12
SN72	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN73	-150.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-150.0E-12
SN74	-150.0E-12	-200.0E-12	-150.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
Statistics							
Min	-200.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-150.0E-12
Max	-100.0E-12	-500.0E-13	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12
Mean	-150.0E-12	-115.0E-12	-120.0E-12	-135.0E-12	-125.0E-12	-140.0E-12	-140.0E-12
Sigma	235.7E-13	411.6E-13	258.2E-13	337.5E-13	263.5E-13	394.4E-13	210.8E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-150.0E-12	-100.0E-12
SN65	-150.0E-12	-100.0E-12
SN66	-150.0E-12	-150.0E-12
SN67	-100.0E-12	-150.0E-12
SN68	-100.0E-12	-200.0E-12
SN69	-150.0E-12	-100.0E-12
SN70	-150.0E-12	-100.0E-12
SN71	-150.0E-12	-100.0E-12
SN72	-150.0E-12	-100.0E-12
SN73	-150.0E-12	-100.0E-12
SN74	-150.0E-12	-500.0E-13
Statistics		
Min	-150.0E-12	-200.0E-12
Max	-100.0E-12	-500.0E-13
Mean	-140.0E-12	-115.0E-12
Sigma	210.8E-13	411.6E-13

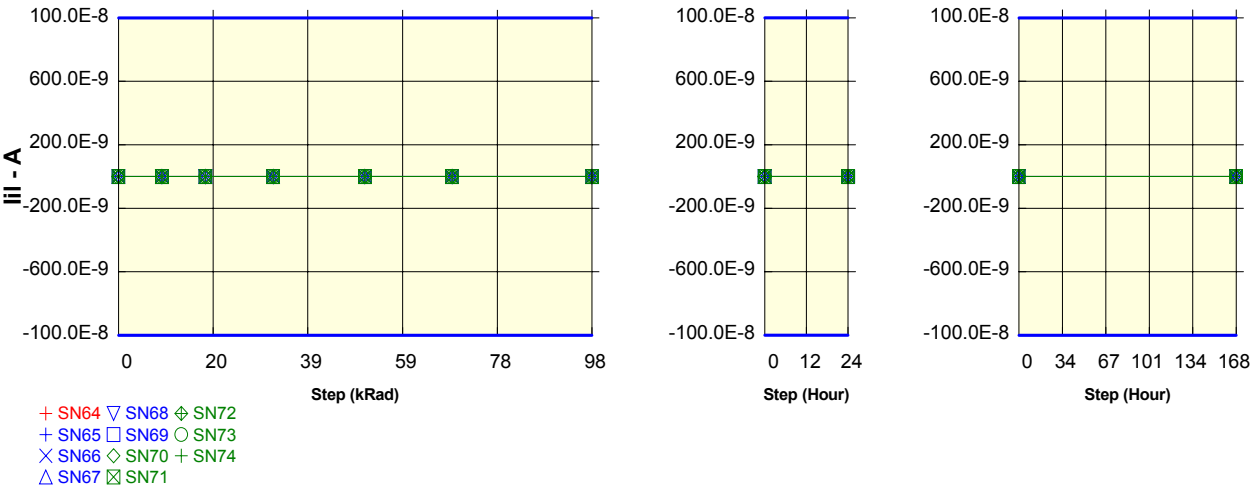
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-100.0E-12	-100.0E-12
SN65	-100.0E-12	-100.0E-12
SN66	-150.0E-12	-100.0E-12
SN67	-150.0E-12	-150.0E-12
SN68	-200.0E-12	-150.0E-12
SN69	-100.0E-12	-150.0E-12
SN70	-100.0E-12	-100.0E-12
SN71	-100.0E-12	-150.0E-12
SN72	-100.0E-12	-150.0E-12
SN73	-100.0E-12	-150.0E-12
SN74	-500.0E-13	-100.0E-12
Statistics		
Min	-200.0E-12	-150.0E-12
Max	-500.0E-13	-100.0E-12
Mean	-115.0E-12	-130.0E-12
Sigma	411.6E-13	258.2E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Input Low Leakage Current : IilA10

Unit : A
Spec Limit Min : -100.0E-8
Spec Limit Max : 100.0E-8
Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-200.0E-12	-200.0E-12	-150.0E-12	-150.0E-12	-500.0E-13	-250.0E-12	-100.0E-12
SN65	-200.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
SN66	-200.0E-12	-200.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-200.0E-12	-150.0E-12
SN67	-200.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-300.0E-12	-100.0E-12
SN68	-150.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12	-150.0E-12
SN69	-200.0E-12	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-150.0E-12
SN70	-150.0E-12	-150.0E-12	-500.0E-13	-100.0E-12	-100.0E-12	-200.0E-12	-100.0E-12
SN71	-100.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-100.0E-12	-250.0E-12	-150.0E-12
SN72	-250.0E-12	-100.0E-12	-100.0E-12	-200.0E-12	-100.0E-12	-150.0E-12	-100.0E-12
SN73	-150.0E-12	-150.0E-12	-500.0E-13	-150.0E-12	-100.0E-12	-150.0E-12	-150.0E-12
SN74	-100.0E-12	-200.0E-12	-500.0E-13	-150.0E-12	-200.0E-12	-100.0E-12	-150.0E-12
Statistics							
Min	-250.0E-12	-200.0E-12	-100.0E-12	-200.0E-12	-200.0E-12	-300.0E-12	-150.0E-12
Max	-100.0E-12	-100.0E-12	-500.0E-13	-100.0E-12	-100.0E-12	-100.0E-12	-100.0E-12
Mean	-170.0E-12	-135.0E-12	-850.0E-13	-140.0E-12	-130.0E-12	-180.0E-12	-135.0E-12
Sigma	483.0E-13	411.6E-13	241.5E-13	316.2E-13	349.6E-13	632.5E-13	241.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-100.0E-12	-500.0E-13
SN65	-150.0E-12	-100.0E-12
SN66	-150.0E-12	-100.0E-12
SN67	-100.0E-12	-150.0E-12
SN68	-150.0E-12	-500.0E-13
SN69	-150.0E-12	-100.0E-12
SN70	-100.0E-12	-100.0E-12
SN71	-150.0E-12	-150.0E-12
SN72	-100.0E-12	-150.0E-12
SN73	-150.0E-12	-150.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-100.0E-12	-500.0E-13
Mean	-135.0E-12	-120.0E-12
Sigma	241.5E-13	349.6E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-500.0E-13	-100.0E-12
SN65	-100.0E-12	-150.0E-12
SN66	-100.0E-12	-150.0E-12
SN67	-150.0E-12	-100.0E-12
SN68	-500.0E-13	-100.0E-12
SN69	-100.0E-12	-150.0E-12
SN70	-100.0E-12	-100.0E-12
SN71	-150.0E-12	-150.0E-12
SN72	-150.0E-12	-100.0E-12
SN73	-150.0E-12	-100.0E-12
SN74	-150.0E-12	-150.0E-12
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-500.0E-13	-100.0E-12
Mean	-120.0E-12	-125.0E-12
Sigma	349.6E-13	263.5E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

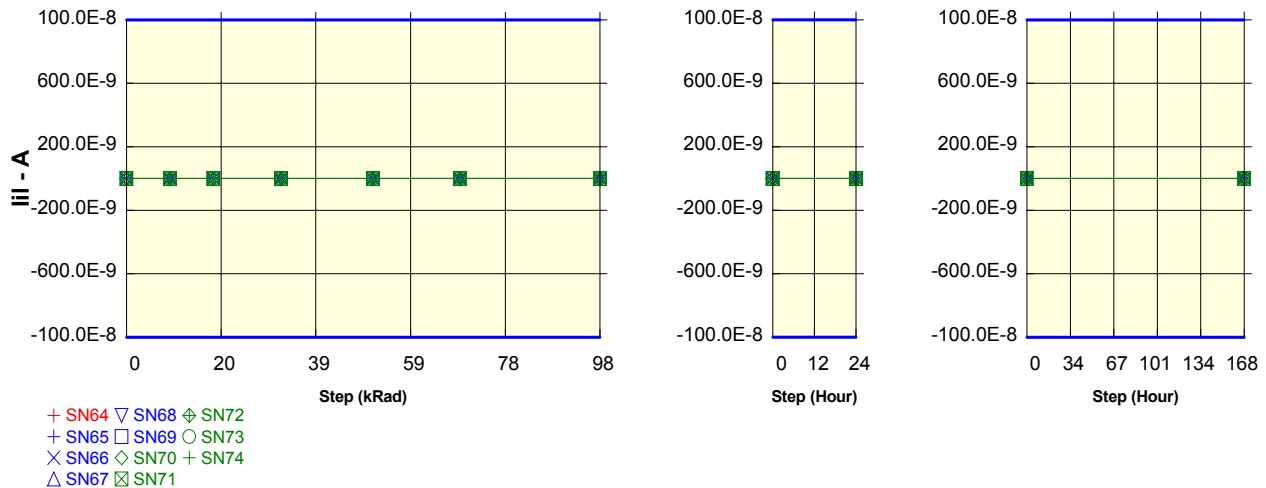
Parameter : Input Low Leakage Current : IilA08

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-100.0E-12	-100.0E-12	-500.0E-13	-100.0E-12	-500.0E-13	-100.0E-12	-100.0E-12
SN65	-200.0E-12	-500.0E-13	-100.0E-12	-100.0E-12	-500.0E-13	-100.0E-12	-150.0E-12
SN66	-150.0E-12	-150.0E-12	-500.0E-13	-150.0E-12	000.0E+0	-100.0E-12	-100.0E-12
SN67	-200.0E-12	-100.0E-12	-100.0E-12	-150.0E-12	-500.0E-13	-500.0E-13	-150.0E-12
SN68	-250.0E-12	-150.0E-12	-150.0E-12	-500.0E-13	-100.0E-12	-500.0E-13	-100.0E-12
SN69	-200.0E-12	-500.0E-13	-500.0E-13	-150.0E-12	-500.0E-13	-150.0E-12	-100.0E-12
SN70	-150.0E-12	-100.0E-12	000.0E+0	-150.0E-12	-500.0E-13	-100.0E-12	-100.0E-12
SN71	-250.0E-12	-500.0E-13	-100.0E-12	-150.0E-12	-100.0E-12	-100.0E-12	-150.0E-12
SN72	-150.0E-12	-500.0E-13	-500.0E-13	-500.0E-13	-100.0E-12	-100.0E-12	-100.0E-12
SN73	-100.0E-12	-500.0E-13	-500.0E-13	-100.0E-12	-500.0E-13	-500.0E-13	-100.0E-12
SN74	-200.0E-12	-100.0E-12	000.0E+0	-100.0E-12	-150.0E-12	-500.0E-13	-100.0E-12
Statistics							
Min	-250.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12	-150.0E-12
Max	-100.0E-12	-500.0E-13	000.0E+0	-500.0E-13	000.0E+0	-500.0E-13	-100.0E-12
Mean	-185.0E-12	-850.0E-13	-650.0E-13	-115.0E-12	-700.0E-13	-850.0E-13	-115.0E-12
Sigma	474.3E-13	411.6E-13	474.3E-13	411.6E-13	421.6E-13	337.5E-13	241.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-100.0E-12	-100.0E-12
SN65	-150.0E-12	-500.0E-13
SN66	-100.0E-12	-100.0E-12
SN67	-150.0E-12	-500.0E-13
SN68	-100.0E-12	-150.0E-12
SN69	-100.0E-12	-100.0E-12
SN70	-100.0E-12	-100.0E-12
SN71	-150.0E-12	-500.0E-13
SN72	-100.0E-12	-100.0E-12
SN73	-100.0E-12	-500.0E-13
SN74	-100.0E-12	000.0E+0
Statistics		
Min	-150.0E-12	-150.0E-12
Max	-100.0E-12	000.0E+0
Mean	-115.0E-12	-750.0E-13
Sigma	241.5E-13	424.9E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-100.0E-12	000.0E+0
SN65	-500.0E-13	-500.0E-13
SN66	-100.0E-12	000.0E+0
SN67	-500.0E-13	-100.0E-12
SN68	-150.0E-12	-500.0E-13
SN69	-100.0E-12	-100.0E-12
SN70	-100.0E-12	-500.0E-13
SN71	-500.0E-13	-100.0E-12
SN72	-100.0E-12	-500.0E-13
SN73	-500.0E-13	-100.0E-12
SN74	000.0E+0	-500.0E-13
Statistics		
Min	-150.0E-12	-100.0E-12
Max	000.0E+0	000.0E+0
Mean	-750.0E-13	-650.0E-13
Sigma	424.9E-13	337.5E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

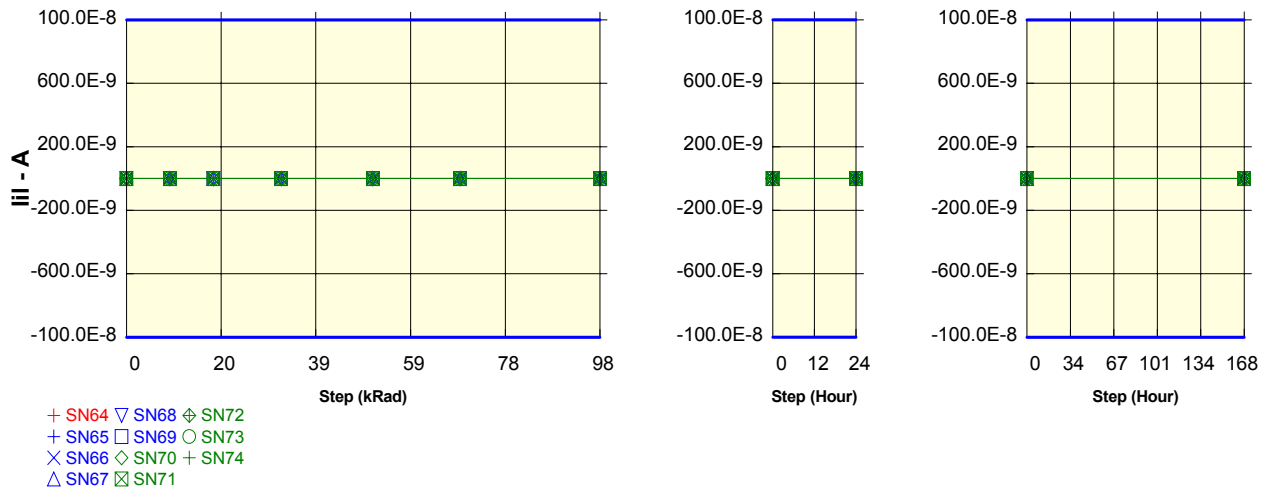
Parameter : Input Low Leakage Current : I_{il}A07

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	150.0E-12	150.0E-12	200.0E-12	200.0E-12	250.0E-12	150.0E-12	100.0E-12
SN65	200.0E-12	300.0E-12	150.0E-12	250.0E-12	300.0E-12	200.0E-12	200.0E-12
SN66	200.0E-12	250.0E-12	150.0E-12	300.0E-12	200.0E-12	150.0E-12	250.0E-12
SN67	150.0E-12	300.0E-12	150.0E-12	300.0E-12	150.0E-12	150.0E-12	150.0E-12
SN68	200.0E-12	150.0E-12	250.0E-12	200.0E-12	150.0E-12	150.0E-12	200.0E-12
SN69	200.0E-12	200.0E-12	250.0E-12	150.0E-12	150.0E-12	250.0E-12	100.0E-12
SN70	200.0E-12	150.0E-12	200.0E-12	300.0E-12	200.0E-12	200.0E-12	200.0E-12
SN71	200.0E-12	200.0E-12	200.0E-12	300.0E-12	150.0E-12	200.0E-12	150.0E-12
SN72	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN73	150.0E-12	150.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	100.0E-12
SN74	200.0E-12	250.0E-12	150.0E-12	250.0E-12	150.0E-12	200.0E-12	150.0E-12
Statistics							
Min	150.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12	100.0E-12
Max	200.0E-12	300.0E-12	250.0E-12	300.0E-12	300.0E-12	250.0E-12	250.0E-12
Mean	190.0E-12	215.0E-12	185.0E-12	245.0E-12	185.0E-12	185.0E-12	170.0E-12
Sigma	210.8E-13	579.8E-13	411.6E-13	550.3E-13	474.3E-13	337.5E-13	483.0E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	100.0E-12	150.0E-12
SN65	200.0E-12	200.0E-12
SN66	250.0E-12	150.0E-12
SN67	150.0E-12	150.0E-12
SN68	200.0E-12	150.0E-12
SN69	100.0E-12	200.0E-12
SN70	200.0E-12	150.0E-12
SN71	150.0E-12	200.0E-12
SN72	200.0E-12	250.0E-12
SN73	100.0E-12	150.0E-12
SN74	150.0E-12	150.0E-12
Statistics		
Min	100.0E-12	150.0E-12
Max	250.0E-12	250.0E-12
Mean	170.0E-12	175.0E-12
Sigma	483.0E-13	353.6E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	100.0E-12
SN65	200.0E-12	200.0E-12
SN66	150.0E-12	150.0E-12
SN67	150.0E-12	150.0E-12
SN68	150.0E-12	150.0E-12
SN69	200.0E-12	150.0E-12
SN70	150.0E-12	200.0E-12
SN71	200.0E-12	200.0E-12
SN72	250.0E-12	200.0E-12
SN73	150.0E-12	200.0E-12
SN74	150.0E-12	150.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	250.0E-12	200.0E-12
Mean	175.0E-12	175.0E-12
Sigma	353.6E-13	263.5E-13

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

Test conditions : Tid

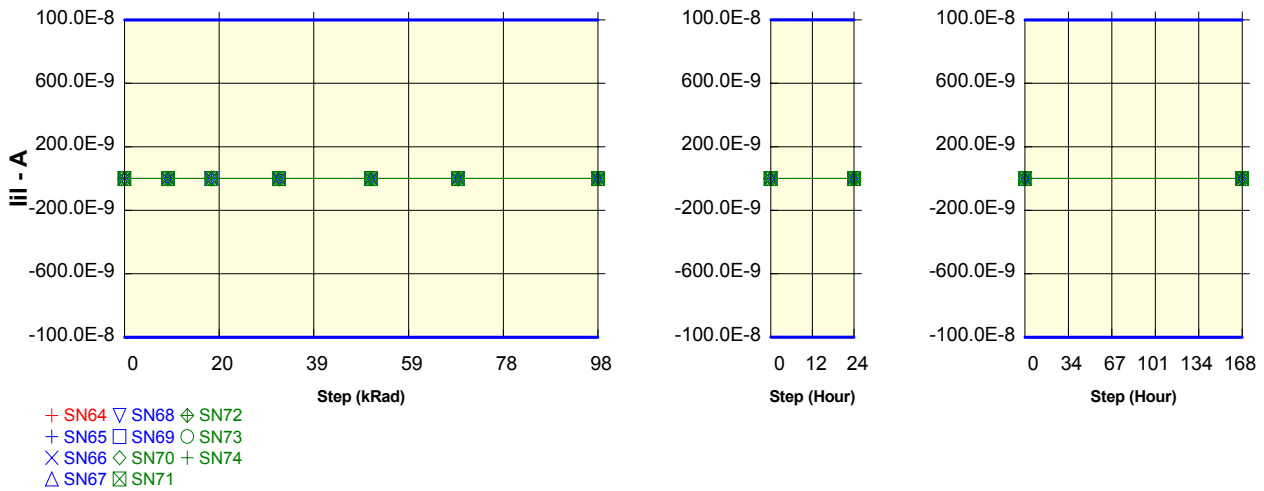
Parameter : Input Low Leakage Current : IilA06

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	150.0E-12	100.0E-12	100.0E-12	150.0E-12	200.0E-12	200.0E-12	200.0E-12
SN65	100.0E-12	150.0E-12	150.0E-12	200.0E-12	250.0E-12	150.0E-12	200.0E-12
SN66	150.0E-12	200.0E-12	200.0E-12	300.0E-12	200.0E-12	200.0E-12	200.0E-12
SN67	150.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	250.0E-12	150.0E-12
SN68	200.0E-12	150.0E-12	100.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12
SN69	250.0E-12	100.0E-12	200.0E-12	200.0E-12	200.0E-12	300.0E-12	200.0E-12
SN70	200.0E-12	150.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12
SN71	200.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	300.0E-12	150.0E-12
SN72	200.0E-12	100.0E-12	200.0E-12	150.0E-12	150.0E-12	200.0E-12	250.0E-12
SN73	200.0E-12	150.0E-12	250.0E-12	150.0E-12	200.0E-12	100.0E-12	200.0E-12
SN74	200.0E-12	300.0E-12	100.0E-12	250.0E-12	200.0E-12	500.0E-13	200.0E-12
Statistics							
Min	100.0E-12	100.0E-12	100.0E-12	150.0E-12	150.0E-12	500.0E-13	150.0E-12
Max	250.0E-12	300.0E-12	250.0E-12	300.0E-12	250.0E-12	300.0E-12	250.0E-12
Mean	185.0E-12	160.0E-12	180.0E-12	200.0E-12	180.0E-12	185.0E-12	185.0E-12
Sigma	411.6E-13	567.6E-13	483.0E-13	471.4E-13	349.6E-13	818.2E-13	337.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	200.0E-12	200.0E-12
SN65	200.0E-12	150.0E-12
SN66	200.0E-12	250.0E-12
SN67	150.0E-12	100.0E-12
SN68	150.0E-12	200.0E-12
SN69	200.0E-12	250.0E-12
SN70	150.0E-12	200.0E-12
SN71	150.0E-12	200.0E-12
SN72	250.0E-12	250.0E-12
SN73	200.0E-12	150.0E-12
SN74	200.0E-12	150.0E-12
Statistics		
Min	150.0E-12	100.0E-12
Max	250.0E-12	250.0E-12
Mean	185.0E-12	190.0E-12
Sigma	337.5E-13	516.4E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	200.0E-12
SN65	150.0E-12	200.0E-12
SN66	250.0E-12	200.0E-12
SN67	100.0E-12	200.0E-12
SN68	200.0E-12	150.0E-12
SN69	250.0E-12	100.0E-12
SN70	200.0E-12	250.0E-12
SN71	200.0E-12	100.0E-12
SN72	250.0E-12	150.0E-12
SN73	150.0E-12	150.0E-12
SN74	150.0E-12	200.0E-12
Statistics		
Min	100.0E-12	100.0E-12
Max	250.0E-12	250.0E-12
Mean	190.0E-12	170.0E-12
Sigma	516.4E-13	483.0E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

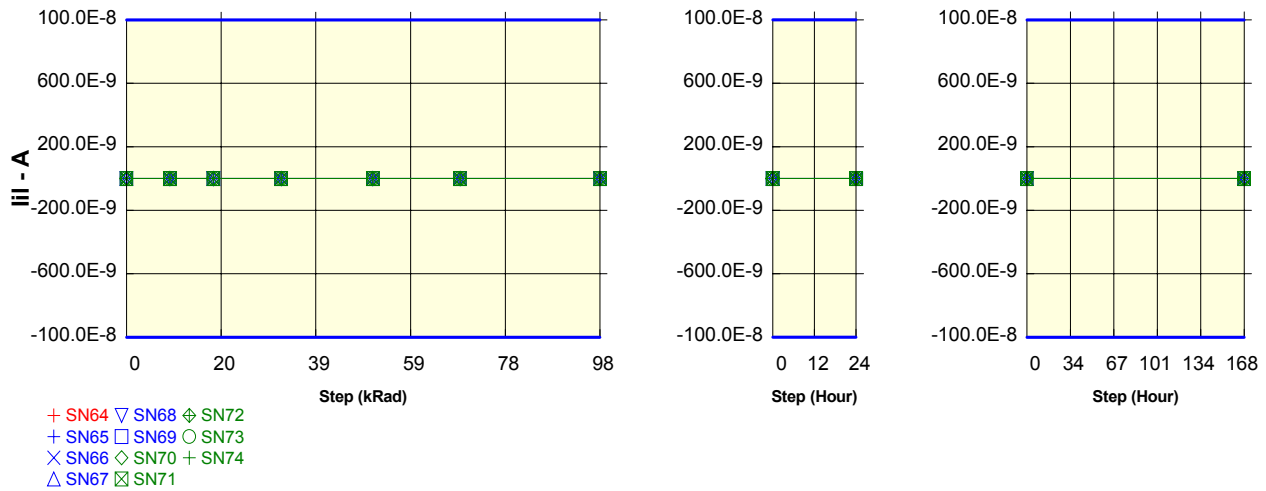
Parameter : Input Low Leakage Current : IilA05

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	150.0E-12	300.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	250.0E-12
SN65	200.0E-12	150.0E-12	100.0E-12	200.0E-12	150.0E-12	250.0E-12	150.0E-12
SN66	200.0E-12	250.0E-12	200.0E-12	150.0E-12	200.0E-12	250.0E-12	200.0E-12
SN67	250.0E-12	250.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12
SN68	300.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12
SN69	200.0E-12	150.0E-12	250.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12
SN70	200.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12
SN71	150.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	250.0E-12	200.0E-12
SN72	200.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12
SN73	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	100.0E-12	150.0E-12
SN74	200.0E-12	300.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12
Statistics							
Min	150.0E-12	150.0E-12	100.0E-12	150.0E-12	150.0E-12	100.0E-12	150.0E-12
Max	300.0E-12	300.0E-12	250.0E-12	200.0E-12	200.0E-12	250.0E-12	200.0E-12
Mean	210.0E-12	200.0E-12	185.0E-12	190.0E-12	160.0E-12	190.0E-12	165.0E-12
Sigma	394.4E-13	527.0E-13	411.6E-13	210.8E-13	210.8E-13	516.4E-13	241.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	250.0E-12	150.0E-12
SN65	150.0E-12	150.0E-12
SN66	200.0E-12	250.0E-12
SN67	200.0E-12	150.0E-12
SN68	150.0E-12	150.0E-12
SN69	150.0E-12	200.0E-12
SN70	150.0E-12	200.0E-12
SN71	200.0E-12	150.0E-12
SN72	150.0E-12	200.0E-12
SN73	150.0E-12	200.0E-12
SN74	150.0E-12	150.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	200.0E-12	250.0E-12
Mean	165.0E-12	180.0E-12
Sigma	241.5E-13	349.6E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	200.0E-12
SN65	150.0E-12	100.0E-12
SN66	250.0E-12	200.0E-12
SN67	150.0E-12	100.0E-12
SN68	150.0E-12	100.0E-12
SN69	200.0E-12	150.0E-12
SN70	200.0E-12	200.0E-12
SN71	150.0E-12	250.0E-12
SN72	200.0E-12	200.0E-12
SN73	200.0E-12	150.0E-12
SN74	150.0E-12	150.0E-12
Statistics		
Min	150.0E-12	100.0E-12
Max	250.0E-12	250.0E-12
Mean	180.0E-12	160.0E-12
Sigma	349.6E-13	516.4E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

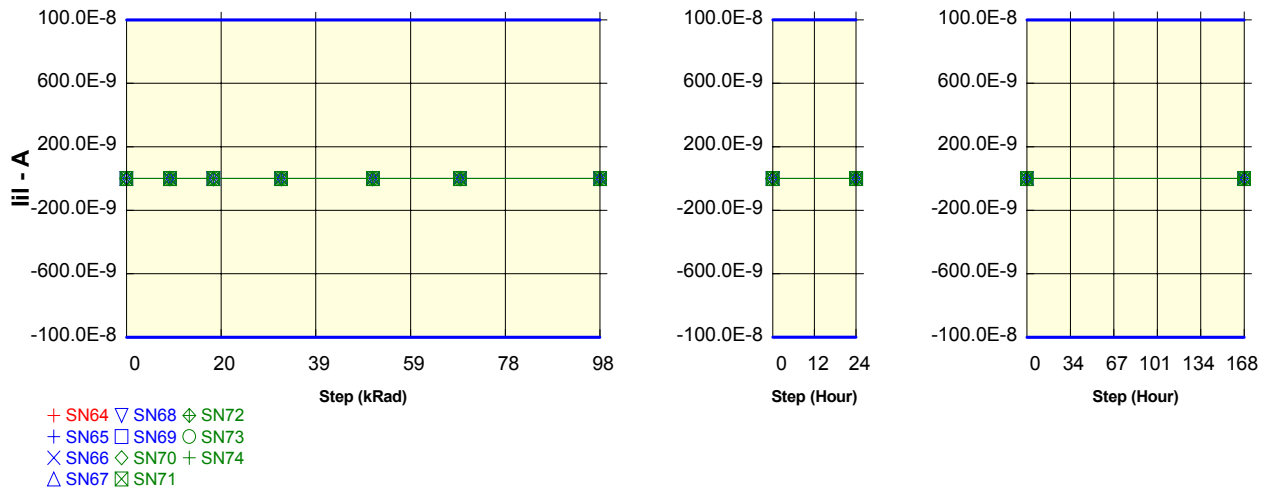
Parameter : Input Low Leakage Current : IilA04

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	200.0E-12	200.0E-12	250.0E-12	200.0E-12	300.0E-12	200.0E-12	200.0E-12
SN65	300.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN66	300.0E-12	300.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12
SN67	250.0E-12	300.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN68	400.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN69	250.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	200.0E-12	100.0E-12
SN70	300.0E-12	150.0E-12	200.0E-12	150.0E-12	250.0E-12	250.0E-12	200.0E-12
SN71	300.0E-12	150.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12
SN72	250.0E-12	250.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12
SN73	300.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12
SN74	250.0E-12	200.0E-12	150.0E-12	250.0E-12	200.0E-12	200.0E-12	250.0E-12
Statistics							
Min	250.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12	100.0E-12
Max	400.0E-12	300.0E-12	200.0E-12	250.0E-12	250.0E-12	250.0E-12	250.0E-12
Mean	290.0E-12	215.0E-12	175.0E-12	190.0E-12	195.0E-12	190.0E-12	190.0E-12
Sigma	459.5E-13	529.7E-13	263.5E-13	316.2E-13	283.8E-13	316.2E-13	394.4E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	200.0E-12	200.0E-12
SN65	200.0E-12	200.0E-12
SN66	200.0E-12	250.0E-12
SN67	200.0E-12	100.0E-12
SN68	200.0E-12	200.0E-12
SN69	100.0E-12	150.0E-12
SN70	200.0E-12	150.0E-12
SN71	200.0E-12	250.0E-12
SN72	150.0E-12	200.0E-12
SN73	200.0E-12	150.0E-12
SN74	250.0E-12	200.0E-12
Statistics		
Min	100.0E-12	100.0E-12
Max	250.0E-12	250.0E-12
Mean	190.0E-12	185.0E-12
Sigma	394.4E-13	474.3E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	150.0E-12
SN65	200.0E-12	500.0E-13
SN66	250.0E-12	200.0E-12
SN67	100.0E-12	500.0E-13
SN68	200.0E-12	150.0E-12
SN69	150.0E-12	150.0E-12
SN70	150.0E-12	150.0E-12
SN71	250.0E-12	150.0E-12
SN72	200.0E-12	250.0E-12
SN73	150.0E-12	100.0E-12
SN74	200.0E-12	150.0E-12
Statistics		
Min	100.0E-12	500.0E-13
Max	250.0E-12	250.0E-12
Mean	185.0E-12	140.0E-12
Sigma	474.3E-13	614.6E-13

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

Test conditions : Tid

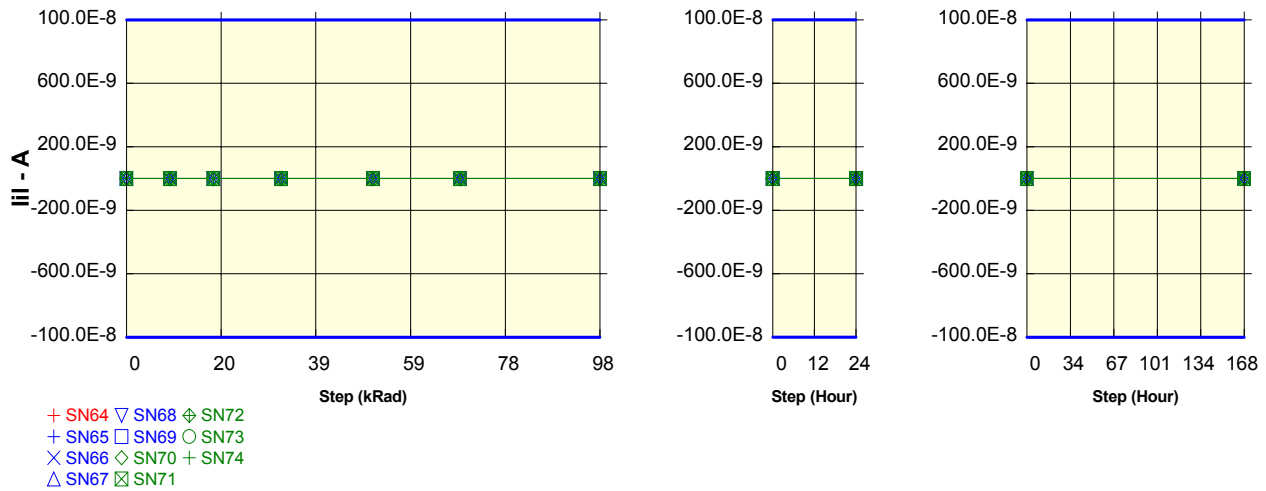
Parameter : Input Low Leakage Current : IilA03

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	250.0E-12	250.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN65	150.0E-12	300.0E-12	100.0E-12	300.0E-12	200.0E-12	200.0E-12	250.0E-12
SN66	150.0E-12	350.0E-12	100.0E-12	200.0E-12	150.0E-12	250.0E-12	300.0E-12
SN67	300.0E-12	250.0E-12	150.0E-12	200.0E-12	150.0E-12	300.0E-12	200.0E-12
SN68	350.0E-12	150.0E-12	250.0E-12	150.0E-12	200.0E-12	250.0E-12	200.0E-12
SN69	200.0E-12	250.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12	300.0E-12
SN70	300.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12
SN71	200.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12
SN72	350.0E-12	300.0E-12	150.0E-12	150.0E-12	200.0E-12	250.0E-12	200.0E-12
SN73	350.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	200.0E-12	200.0E-12
SN74	300.0E-12	300.0E-12	150.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12
Statistics							
Min	150.0E-12	150.0E-12	100.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12
Max	350.0E-12	350.0E-12	250.0E-12	300.0E-12	200.0E-12	300.0E-12	300.0E-12
Mean	265.0E-12	250.0E-12	155.0E-12	195.0E-12	175.0E-12	220.0E-12	220.0E-12
Sigma	818.2E-13	623.6E-13	437.8E-13	437.8E-13	263.5E-13	421.6E-13	483.0E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	200.0E-12	150.0E-12
SN65	250.0E-12	150.0E-12
SN66	300.0E-12	150.0E-12
SN67	200.0E-12	200.0E-12
SN68	200.0E-12	150.0E-12
SN69	300.0E-12	200.0E-12
SN70	200.0E-12	150.0E-12
SN71	200.0E-12	150.0E-12
SN72	200.0E-12	200.0E-12
SN73	200.0E-12	200.0E-12
SN74	150.0E-12	150.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	300.0E-12	200.0E-12
Mean	220.0E-12	170.0E-12
Sigma	483.0E-13	258.2E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	150.0E-12
SN65	150.0E-12	100.0E-12
SN66	150.0E-12	250.0E-12
SN67	200.0E-12	150.0E-12
SN68	150.0E-12	250.0E-12
SN69	200.0E-12	200.0E-12
SN70	150.0E-12	250.0E-12
SN71	150.0E-12	200.0E-12
SN72	200.0E-12	200.0E-12
SN73	200.0E-12	250.0E-12
SN74	150.0E-12	200.0E-12
Statistics		
Min	150.0E-12	100.0E-12
Max	200.0E-12	250.0E-12
Mean	170.0E-12	205.0E-12
Sigma	258.2E-13	497.2E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

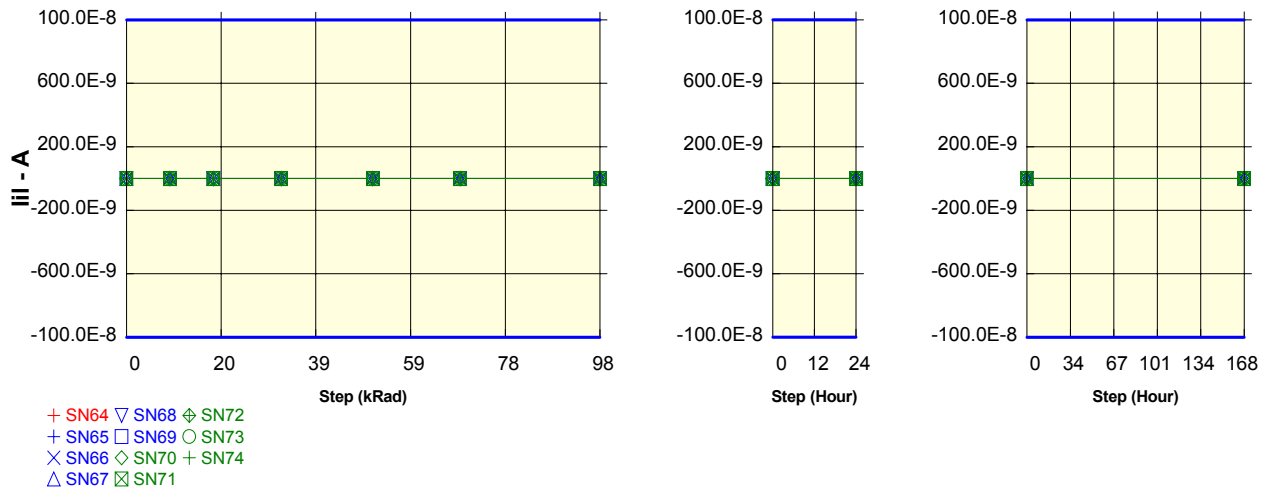
Parameter : Input Low Leakage Current : IilA02

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	200.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12	100.0E-12
SN65	200.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	200.0E-12	150.0E-12
SN66	150.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN67	250.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12
SN68	250.0E-12	200.0E-12	250.0E-12	200.0E-12	200.0E-12	250.0E-12	200.0E-12
SN69	200.0E-12	200.0E-12	100.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12
SN70	200.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	200.0E-12	100.0E-12
SN71	200.0E-12	150.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12
SN72	200.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	200.0E-12	200.0E-12
SN73	250.0E-12	100.0E-12	150.0E-12	150.0E-12	200.0E-12	100.0E-12	200.0E-12
SN74	250.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12	200.0E-12
Statistics							
Min	150.0E-12	100.0E-12	100.0E-12	150.0E-12	150.0E-12	100.0E-12	100.0E-12
Max	250.0E-12	200.0E-12	250.0E-12	200.0E-12	200.0E-12	250.0E-12	200.0E-12
Mean	215.0E-12	185.0E-12	165.0E-12	170.0E-12	170.0E-12	185.0E-12	175.0E-12
Sigma	337.5E-13	337.5E-13	411.6E-13	258.2E-13	258.2E-13	411.6E-13	353.6E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	100.0E-12	150.0E-12
SN65	150.0E-12	150.0E-12
SN66	200.0E-12	150.0E-12
SN67	150.0E-12	200.0E-12
SN68	200.0E-12	200.0E-12
SN69	150.0E-12	150.0E-12
SN70	100.0E-12	150.0E-12
SN71	200.0E-12	200.0E-12
SN72	200.0E-12	200.0E-12
SN73	200.0E-12	100.0E-12
SN74	200.0E-12	150.0E-12
Statistics		
Min	100.0E-12	100.0E-12
Max	200.0E-12	200.0E-12
Mean	175.0E-12	165.0E-12
Sigma	353.6E-13	337.5E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	150.0E-12
SN65	150.0E-12	200.0E-12
SN66	150.0E-12	200.0E-12
SN67	200.0E-12	200.0E-12
SN68	200.0E-12	200.0E-12
SN69	150.0E-12	100.0E-12
SN70	150.0E-12	150.0E-12
SN71	200.0E-12	100.0E-12
SN72	200.0E-12	200.0E-12
SN73	100.0E-12	150.0E-12
SN74	150.0E-12	200.0E-12
Statistics		
Min	100.0E-12	100.0E-12
Max	200.0E-12	200.0E-12
Mean	165.0E-12	170.0E-12
Sigma	337.5E-13	421.6E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

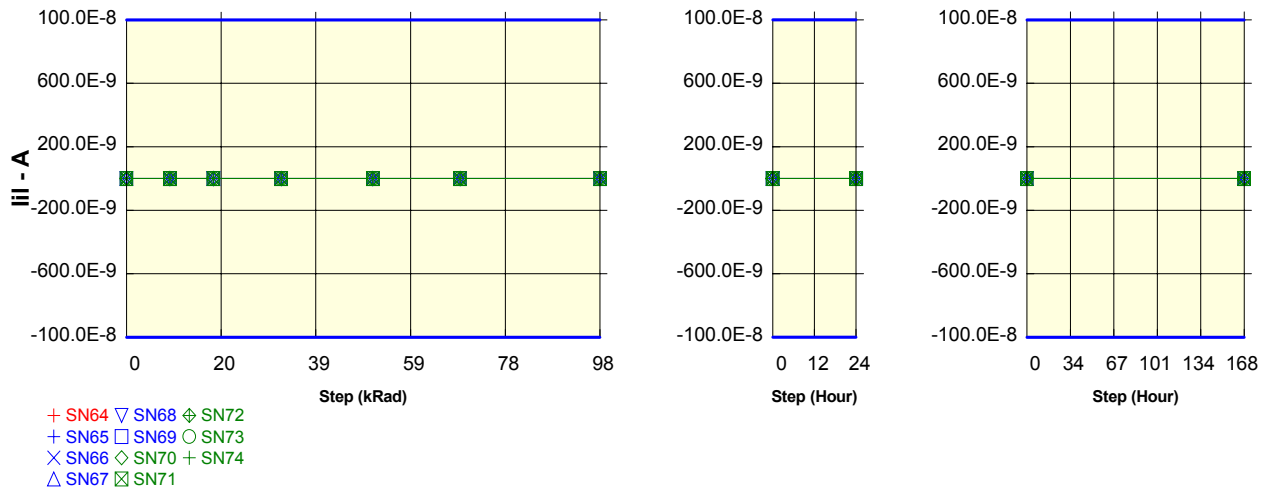
Parameter : Input Low Leakage Current : IilA01

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	150.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12	200.0E-12	100.0E-12
SN65	250.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	150.0E-12
SN66	250.0E-12	200.0E-12	200.0E-12	250.0E-12	200.0E-12	200.0E-12	200.0E-12
SN67	250.0E-12	200.0E-12	100.0E-12	150.0E-12	250.0E-12	200.0E-12	100.0E-12
SN68	250.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	100.0E-12	200.0E-12
SN69	150.0E-12	250.0E-12	100.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN70	200.0E-12	200.0E-12	100.0E-12	150.0E-12	150.0E-12	150.0E-12	150.0E-12
SN71	200.0E-12	200.0E-12	250.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12
SN72	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12
SN73	250.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12
SN74	250.0E-12	200.0E-12	250.0E-12	150.0E-12	150.0E-12	200.0E-12	100.0E-12
Statistics							
Min	150.0E-12	200.0E-12	100.0E-12	150.0E-12	150.0E-12	100.0E-12	100.0E-12
Max	250.0E-12	250.0E-12	250.0E-12	250.0E-12	250.0E-12	200.0E-12	200.0E-12
Mean	225.0E-12	205.0E-12	175.0E-12	185.0E-12	195.0E-12	175.0E-12	160.0E-12
Sigma	353.6E-13	158.1E-13	589.3E-13	337.5E-13	283.8E-13	353.6E-13	394.4E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	100.0E-12	150.0E-12
SN65	150.0E-12	200.0E-12
SN66	200.0E-12	150.0E-12
SN67	100.0E-12	150.0E-12
SN68	200.0E-12	200.0E-12
SN69	200.0E-12	200.0E-12
SN70	150.0E-12	150.0E-12
SN71	150.0E-12	150.0E-12
SN72	150.0E-12	200.0E-12
SN73	200.0E-12	200.0E-12
SN74	100.0E-12	200.0E-12
Statistics		
Min	100.0E-12	150.0E-12
Max	200.0E-12	200.0E-12
Mean	160.0E-12	180.0E-12
Sigma	394.4E-13	258.2E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	200.0E-12
SN65	200.0E-12	100.0E-12
SN66	150.0E-12	200.0E-12
SN67	150.0E-12	150.0E-12
SN68	200.0E-12	200.0E-12
SN69	200.0E-12	200.0E-12
SN70	150.0E-12	150.0E-12
SN71	150.0E-12	200.0E-12
SN72	200.0E-12	200.0E-12
SN73	200.0E-12	200.0E-12
SN74	200.0E-12	150.0E-12
Statistics		
Min	150.0E-12	100.0E-12
Max	200.0E-12	200.0E-12
Mean	180.0E-12	175.0E-12
Sigma	258.2E-13	353.6E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

Parameter : Input High Leakage Current : lozhDQ07

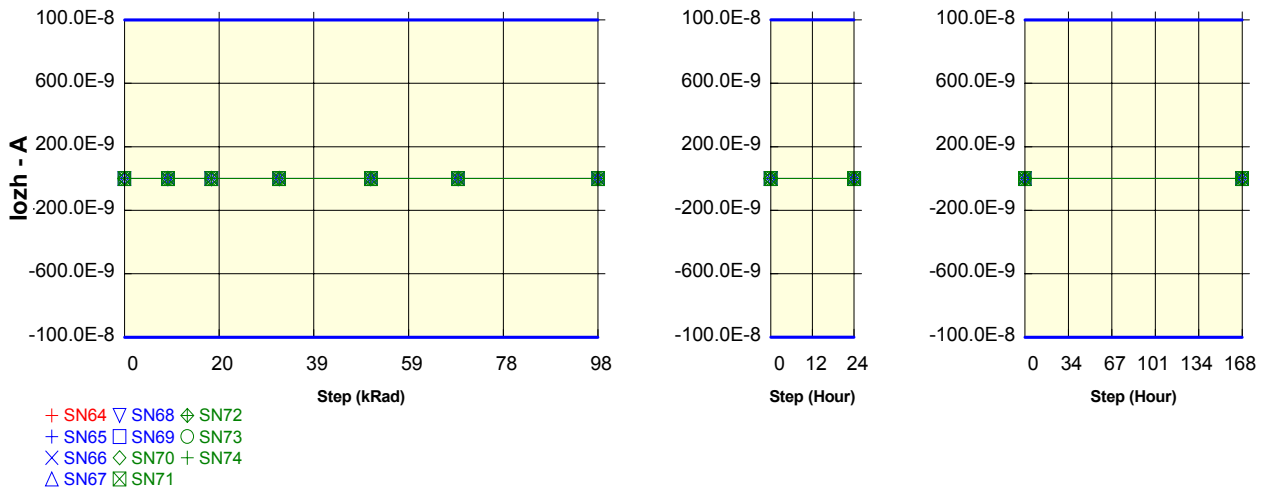
-

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	300.0E-12	200.0E-12	200.0E-12	300.0E-12	150.0E-12	150.0E-12	150.0E-12
SN65	300.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12	250.0E-12	150.0E-12
SN66	250.0E-12	200.0E-12	200.0E-12	200.0E-12	250.0E-12	150.0E-12	200.0E-12
SN67	250.0E-12	150.0E-12	150.0E-12	200.0E-12	150.0E-12	150.0E-12	200.0E-12
SN68	350.0E-12	150.0E-12	150.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN69	200.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12
SN70	200.0E-12	150.0E-12	250.0E-12	200.0E-12	150.0E-12	150.0E-12	200.0E-12
SN71	200.0E-12	150.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	150.0E-12
SN72	250.0E-12	300.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12	100.0E-12
SN73	300.0E-12	200.0E-12	100.0E-12	200.0E-12	200.0E-12	150.0E-12	150.0E-12
SN74	300.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	250.0E-12
Statistics							
Min	200.0E-12	150.0E-12	100.0E-12	150.0E-12	150.0E-12	150.0E-12	100.0E-12
Max	350.0E-12	300.0E-12	250.0E-12	200.0E-12	250.0E-12	250.0E-12	250.0E-12
Mean	260.0E-12	190.0E-12	170.0E-12	195.0E-12	185.0E-12	175.0E-12	175.0E-12
Sigma	516.4E-13	459.5E-13	421.6E-13	158.1E-13	337.5E-13	353.6E-13	424.9E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	150.0E-12	150.0E-12
SN65	150.0E-12	200.0E-12
SN66	200.0E-12	200.0E-12
SN67	200.0E-12	200.0E-12
SN68	200.0E-12	150.0E-12
SN69	150.0E-12	250.0E-12
SN70	200.0E-12	150.0E-12
SN71	150.0E-12	200.0E-12
SN72	100.0E-12	150.0E-12
SN73	150.0E-12	200.0E-12
SN74	250.0E-12	200.0E-12
Statistics		
Min	100.0E-12	150.0E-12
Max	250.0E-12	250.0E-12
Mean	175.0E-12	190.0E-12
Sigma	424.9E-13	316.2E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	100.0E-12
SN65	200.0E-12	200.0E-12
SN66	200.0E-12	250.0E-12
SN67	200.0E-12	200.0E-12
SN68	150.0E-12	150.0E-12
SN69	250.0E-12	200.0E-12
SN70	150.0E-12	200.0E-12
SN71	200.0E-12	200.0E-12
SN72	150.0E-12	200.0E-12
SN73	200.0E-12	200.0E-12
SN74	200.0E-12	150.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	250.0E-12	250.0E-12
Mean	190.0E-12	195.0E-12
Sigma	316.2E-13	283.8E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

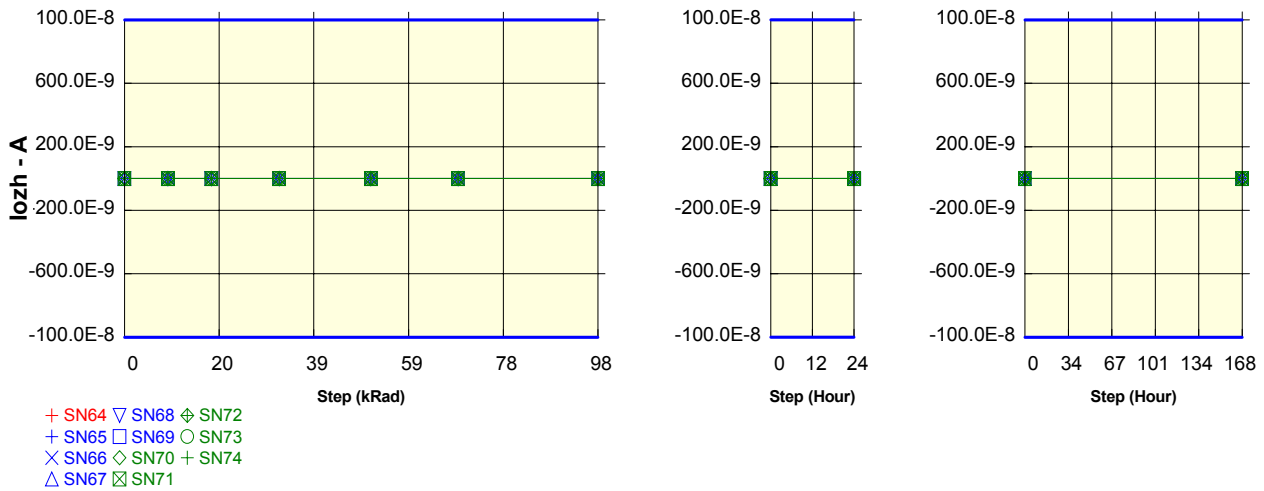
Parameter : Input High Leakage Current : IozhDQ04

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	150.0E-12	200.0E-12	200.0E-12	200.0E-12	250.0E-12	300.0E-12	200.0E-12
SN65	250.0E-12	200.0E-12	200.0E-12	300.0E-12	200.0E-12	250.0E-12	150.0E-12
SN66	200.0E-12	150.0E-12	200.0E-12	250.0E-12	250.0E-12	200.0E-12	200.0E-12
SN67	250.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12
SN68	200.0E-12	250.0E-12	200.0E-12	250.0E-12	200.0E-12	250.0E-12	200.0E-12
SN69	200.0E-12	300.0E-12	250.0E-12	300.0E-12	200.0E-12	250.0E-12	250.0E-12
SN70	300.0E-12	150.0E-12	200.0E-12	250.0E-12	200.0E-12	250.0E-12	150.0E-12
SN71	200.0E-12	200.0E-12	300.0E-12	200.0E-12	200.0E-12	300.0E-12	200.0E-12
SN72	150.0E-12	250.0E-12	200.0E-12	250.0E-12	200.0E-12	200.0E-12	300.0E-12
SN73	200.0E-12	300.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN74	250.0E-12	250.0E-12	200.0E-12	250.0E-12	250.0E-12	200.0E-12	200.0E-12
Statistics							
Min	150.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12
Max	300.0E-12	300.0E-12	300.0E-12	300.0E-12	250.0E-12	300.0E-12	300.0E-12
Mean	220.0E-12	225.0E-12	215.0E-12	245.0E-12	205.0E-12	230.0E-12	205.0E-12
Sigma	421.6E-13	540.1E-13	337.5E-13	368.9E-13	283.8E-13	349.6E-13	437.8E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	200.0E-12	200.0E-12
SN65	150.0E-12	200.0E-12
SN66	200.0E-12	150.0E-12
SN67	200.0E-12	250.0E-12
SN68	200.0E-12	250.0E-12
SN69	250.0E-12	150.0E-12
SN70	150.0E-12	200.0E-12
SN71	200.0E-12	200.0E-12
SN72	300.0E-12	200.0E-12
SN73	200.0E-12	200.0E-12
SN74	200.0E-12	250.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	300.0E-12	250.0E-12
Mean	205.0E-12	205.0E-12
Sigma	437.8E-13	368.9E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	150.0E-12
SN65	200.0E-12	150.0E-12
SN66	150.0E-12	150.0E-12
SN67	250.0E-12	250.0E-12
SN68	250.0E-12	200.0E-12
SN69	150.0E-12	200.0E-12
SN70	200.0E-12	200.0E-12
SN71	200.0E-12	150.0E-12
SN72	200.0E-12	150.0E-12
SN73	200.0E-12	150.0E-12
SN74	250.0E-12	150.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	250.0E-12	250.0E-12
Mean	205.0E-12	175.0E-12
Sigma	368.9E-13	353.6E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

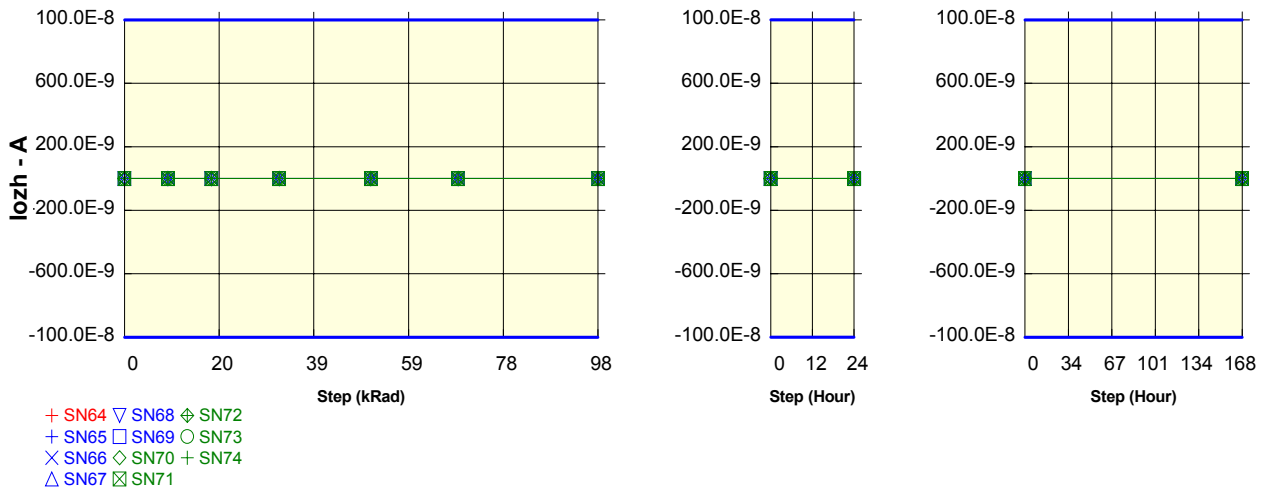
Parameter : Input High Leakage Current : lozhDQ00

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	550.0E-12	600.0E-12	350.0E-12	350.0E-12	500.0E-12	650.0E-12	250.0E-12
SN65	600.0E-12	600.0E-12	350.0E-12	250.0E-12	400.0E-12	450.0E-12	400.0E-12
SN66	500.0E-12	750.0E-12	400.0E-12	350.0E-12	350.0E-12	350.0E-12	350.0E-12
SN67	500.0E-12	500.0E-12	400.0E-12	400.0E-12	400.0E-12	600.0E-12	300.0E-12
SN68	650.0E-12	450.0E-12	350.0E-12	450.0E-12	400.0E-12	500.0E-12	300.0E-12
SN69	550.0E-12	600.0E-12	400.0E-12	400.0E-12	400.0E-12	600.0E-12	400.0E-12
SN70	500.0E-12	500.0E-12	300.0E-12	400.0E-12	300.0E-12	450.0E-12	250.0E-12
SN71	550.0E-12	450.0E-12	450.0E-12	450.0E-12	350.0E-12	600.0E-12	250.0E-12
SN72	600.0E-12	500.0E-12	400.0E-12	400.0E-12	400.0E-12	550.0E-12	300.0E-12
SN73	550.0E-12	350.0E-12	300.0E-12	400.0E-12	500.0E-12	350.0E-12	350.0E-12
SN74	400.0E-12	700.0E-12	250.0E-12	450.0E-12	450.0E-12	500.0E-12	300.0E-12
Statistics							
Min	400.0E-12	350.0E-12	250.0E-12	250.0E-12	300.0E-12	350.0E-12	250.0E-12
Max	650.0E-12	750.0E-12	450.0E-12	450.0E-12	500.0E-12	600.0E-12	400.0E-12
Mean	540.0E-12	540.0E-12	360.0E-12	395.0E-12	395.0E-12	495.0E-12	320.0E-12
Sigma	699.2E-13	122.0E-12	614.6E-13	598.6E-13	550.3E-13	956.0E-13	537.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	250.0E-12	300.0E-12
SN65	400.0E-12	200.0E-12
SN66	350.0E-12	250.0E-12
SN67	300.0E-12	200.0E-12
SN68	300.0E-12	200.0E-12
SN69	400.0E-12	250.0E-12
SN70	250.0E-12	150.0E-12
SN71	250.0E-12	200.0E-12
SN72	300.0E-12	150.0E-12
SN73	350.0E-12	250.0E-12
SN74	300.0E-12	150.0E-12
Statistics		
Min	250.0E-12	150.0E-12
Max	400.0E-12	250.0E-12
Mean	320.0E-12	200.0E-12
Sigma	537.5E-13	408.2E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	300.0E-12	200.0E-12
SN65	200.0E-12	300.0E-12
SN66	250.0E-12	250.0E-12
SN67	200.0E-12	250.0E-12
SN68	200.0E-12	300.0E-12
SN69	250.0E-12	250.0E-12
SN70	150.0E-12	300.0E-12
SN71	200.0E-12	200.0E-12
SN72	150.0E-12	300.0E-12
SN73	250.0E-12	300.0E-12
SN74	150.0E-12	250.0E-12
Statistics		
Min	150.0E-12	200.0E-12
Max	250.0E-12	300.0E-12
Mean	200.0E-12	270.0E-12
Sigma	408.2E-13	349.6E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

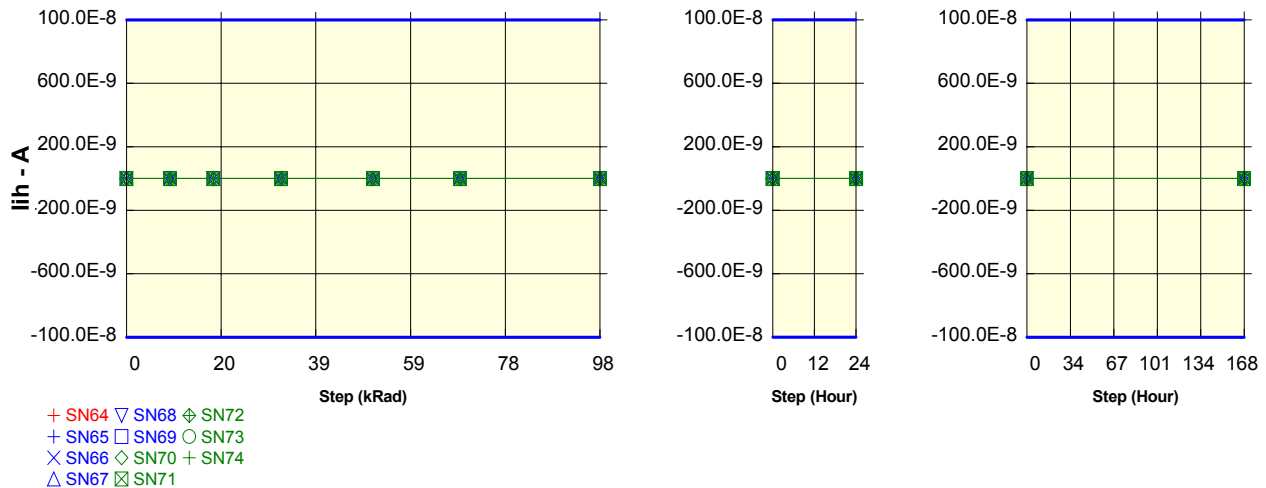
Parameter : Input High Leakage Current : IihCKE

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	450.0E-12	350.0E-12	400.0E-12	250.0E-12	300.0E-12	450.0E-12	250.0E-12
SN65	450.0E-12	350.0E-12	300.0E-12	200.0E-12	300.0E-12	350.0E-12	300.0E-12
SN66	350.0E-12	500.0E-12	200.0E-12	400.0E-12	400.0E-12	350.0E-12	350.0E-12
SN67	400.0E-12	400.0E-12	250.0E-12	400.0E-12	300.0E-12	400.0E-12	250.0E-12
SN68	350.0E-12	350.0E-12	300.0E-12	400.0E-12	250.0E-12	450.0E-12	300.0E-12
SN69	400.0E-12	450.0E-12	300.0E-12	350.0E-12	300.0E-12	450.0E-12	300.0E-12
SN70	350.0E-12	400.0E-12	200.0E-12	300.0E-12	250.0E-12	400.0E-12	200.0E-12
SN71	400.0E-12	250.0E-12	250.0E-12	300.0E-12	250.0E-12	400.0E-12	300.0E-12
SN72	400.0E-12	400.0E-12	200.0E-12	450.0E-12	250.0E-12	400.0E-12	250.0E-12
SN73	350.0E-12	300.0E-12	200.0E-12	400.0E-12	300.0E-12	300.0E-12	300.0E-12
SN74	350.0E-12	450.0E-12	250.0E-12	350.0E-12	250.0E-12	400.0E-12	300.0E-12
Statistics							
Min	350.0E-12	250.0E-12	200.0E-12	200.0E-12	250.0E-12	300.0E-12	200.0E-12
Max	450.0E-12	500.0E-12	300.0E-12	450.0E-12	400.0E-12	450.0E-12	350.0E-12
Mean	380.0E-12	385.0E-12	245.0E-12	355.0E-12	285.0E-12	390.0E-12	285.0E-12
Sigma	349.6E-13	747.2E-13	437.8E-13	724.6E-13	474.3E-13	459.5E-13	411.6E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	250.0E-12	200.0E-12
SN65	300.0E-12	250.0E-12
SN66	350.0E-12	150.0E-12
SN67	250.0E-12	200.0E-12
SN68	300.0E-12	250.0E-12
SN69	300.0E-12	200.0E-12
SN70	200.0E-12	300.0E-12
SN71	300.0E-12	200.0E-12
SN72	250.0E-12	150.0E-12
SN73	300.0E-12	150.0E-12
SN74	300.0E-12	150.0E-12
Statistics		
Min	200.0E-12	150.0E-12
Max	350.0E-12	300.0E-12
Mean	285.0E-12	200.0E-12
Sigma	411.6E-13	527.0E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	200.0E-12
SN65	250.0E-12	250.0E-12
SN66	150.0E-12	300.0E-12
SN67	200.0E-12	200.0E-12
SN68	250.0E-12	300.0E-12
SN69	200.0E-12	200.0E-12
SN70	300.0E-12	200.0E-12
SN71	200.0E-12	200.0E-12
SN72	150.0E-12	200.0E-12
SN73	150.0E-12	200.0E-12
SN74	150.0E-12	250.0E-12
Statistics		
Min	150.0E-12	200.0E-12
Max	300.0E-12	300.0E-12
Mean	200.0E-12	230.0E-12
Sigma	527.0E-13	421.6E-13

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

Test conditions : Tid

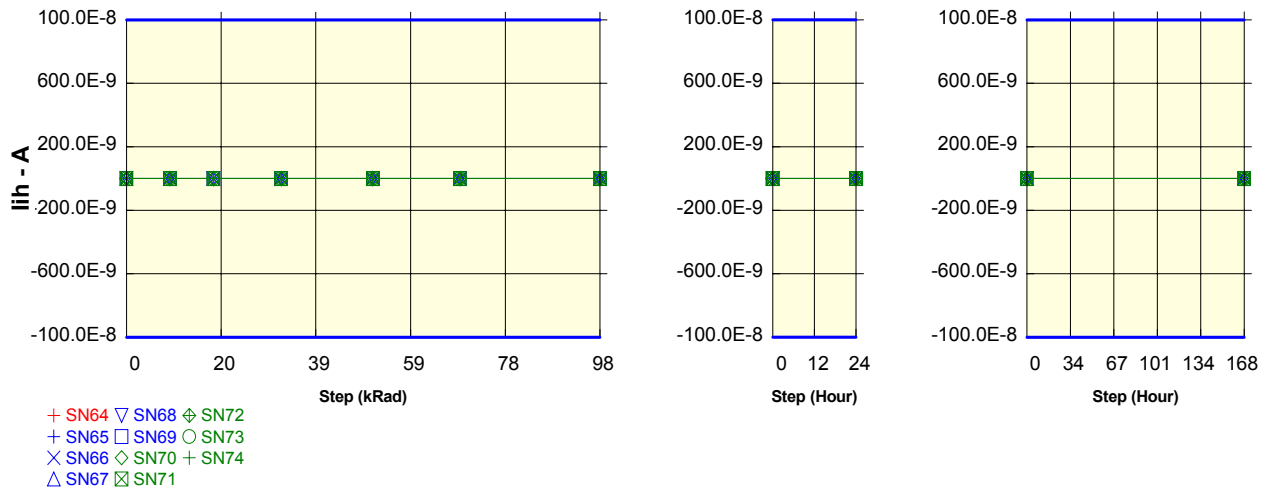
Parameter : Input High Leakage Current : lih/RAS

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	400.0E-12	300.0E-12	200.0E-12	400.0E-12	250.0E-12	350.0E-12	200.0E-12
SN65	450.0E-12	300.0E-12	200.0E-12	200.0E-12	300.0E-12	300.0E-12	250.0E-12
SN66	400.0E-12	350.0E-12	200.0E-12	250.0E-12	250.0E-12	300.0E-12	300.0E-12
SN67	300.0E-12	250.0E-12	200.0E-12	200.0E-12	250.0E-12	300.0E-12	200.0E-12
SN68	250.0E-12	200.0E-12	200.0E-12	250.0E-12	250.0E-12	350.0E-12	250.0E-12
SN69	250.0E-12	350.0E-12	250.0E-12	200.0E-12	300.0E-12	300.0E-12	250.0E-12
SN70	400.0E-12	150.0E-12	250.0E-12	300.0E-12	200.0E-12	250.0E-12	250.0E-12
SN71	250.0E-12	300.0E-12	300.0E-12	200.0E-12	200.0E-12	400.0E-12	200.0E-12
SN72	250.0E-12	300.0E-12	200.0E-12	200.0E-12	250.0E-12	250.0E-12	250.0E-12
SN73	400.0E-12	200.0E-12	200.0E-12	250.0E-12	300.0E-12	300.0E-12	200.0E-12
SN74	400.0E-12	400.0E-12	150.0E-12	250.0E-12	300.0E-12	250.0E-12	200.0E-12
Statistics							
Min	250.0E-12	150.0E-12	150.0E-12	200.0E-12	200.0E-12	250.0E-12	200.0E-12
Max	450.0E-12	400.0E-12	300.0E-12	300.0E-12	300.0E-12	400.0E-12	300.0E-12
Mean	335.0E-12	280.0E-12	215.0E-12	230.0E-12	260.0E-12	300.0E-12	235.0E-12
Sigma	818.2E-13	788.8E-13	411.6E-13	349.6E-13	394.4E-13	471.4E-13	337.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	200.0E-12	200.0E-12
SN65	250.0E-12	200.0E-12
SN66	300.0E-12	200.0E-12
SN67	200.0E-12	200.0E-12
SN68	250.0E-12	200.0E-12
SN69	250.0E-12	200.0E-12
SN70	250.0E-12	200.0E-12
SN71	200.0E-12	150.0E-12
SN72	250.0E-12	200.0E-12
SN73	200.0E-12	200.0E-12
SN74	200.0E-12	200.0E-12
Statistics		
Min	200.0E-12	150.0E-12
Max	300.0E-12	200.0E-12
Mean	235.0E-12	195.0E-12
Sigma	337.5E-13	158.1E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	150.0E-12
SN65	200.0E-12	200.0E-12
SN66	200.0E-12	200.0E-12
SN67	200.0E-12	200.0E-12
SN68	200.0E-12	250.0E-12
SN69	200.0E-12	250.0E-12
SN70	200.0E-12	200.0E-12
SN71	150.0E-12	150.0E-12
SN72	200.0E-12	200.0E-12
SN73	200.0E-12	150.0E-12
SN74	200.0E-12	200.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	200.0E-12	250.0E-12
Mean	195.0E-12	200.0E-12
Sigma	158.1E-13	333.3E-13

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

Test conditions : Tid

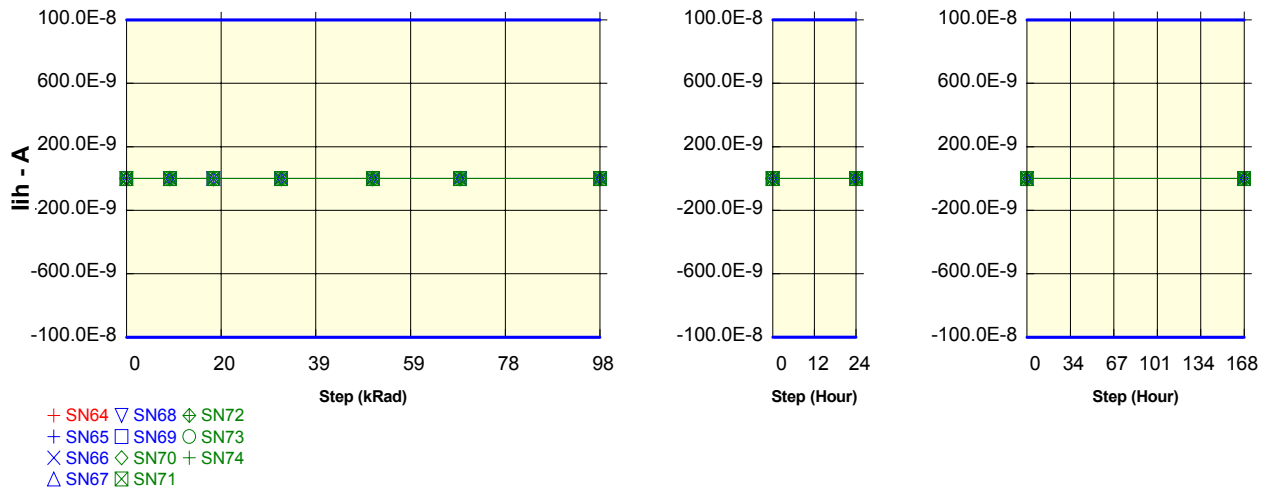
Parameter : Input High Leakage Current : lih/CAS

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	350.0E-12	400.0E-12	200.0E-12	300.0E-12	200.0E-12	500.0E-12	250.0E-12
SN65	450.0E-12	350.0E-12	250.0E-12	350.0E-12	300.0E-12	350.0E-12	250.0E-12
SN66	400.0E-12	450.0E-12	250.0E-12	200.0E-12	300.0E-12	400.0E-12	300.0E-12
SN67	350.0E-12	350.0E-12	250.0E-12	250.0E-12	400.0E-12	400.0E-12	250.0E-12
SN68	350.0E-12	300.0E-12	200.0E-12	300.0E-12	300.0E-12	300.0E-12	250.0E-12
SN69	400.0E-12	400.0E-12	200.0E-12	250.0E-12	250.0E-12	350.0E-12	300.0E-12
SN70	350.0E-12	400.0E-12	250.0E-12	300.0E-12	300.0E-12	300.0E-12	200.0E-12
SN71	350.0E-12	250.0E-12	300.0E-12	400.0E-12	250.0E-12	450.0E-12	300.0E-12
SN72	400.0E-12	350.0E-12	200.0E-12	250.0E-12	300.0E-12	450.0E-12	250.0E-12
SN73	400.0E-12	250.0E-12	200.0E-12	350.0E-12	250.0E-12	300.0E-12	250.0E-12
SN74	350.0E-12	500.0E-12	200.0E-12	200.0E-12	300.0E-12	350.0E-12	300.0E-12
Statistics							
Min	350.0E-12	250.0E-12	200.0E-12	200.0E-12	250.0E-12	300.0E-12	200.0E-12
Max	450.0E-12	500.0E-12	300.0E-12	400.0E-12	400.0E-12	450.0E-12	300.0E-12
Mean	380.0E-12	360.0E-12	230.0E-12	285.0E-12	295.0E-12	365.0E-12	265.0E-12
Sigma	349.6E-13	809.7E-13	349.6E-13	668.7E-13	437.8E-13	579.8E-13	337.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	250.0E-12	150.0E-12
SN65	250.0E-12	150.0E-12
SN66	300.0E-12	150.0E-12
SN67	250.0E-12	200.0E-12
SN68	250.0E-12	200.0E-12
SN69	300.0E-12	150.0E-12
SN70	200.0E-12	200.0E-12
SN71	300.0E-12	150.0E-12
SN72	250.0E-12	150.0E-12
SN73	250.0E-12	150.0E-12
SN74	300.0E-12	150.0E-12
Statistics		
Min	200.0E-12	150.0E-12
Max	300.0E-12	200.0E-12
Mean	265.0E-12	165.0E-12
Sigma	337.5E-13	241.5E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	250.0E-12
SN65	150.0E-12	200.0E-12
SN66	150.0E-12	200.0E-12
SN67	200.0E-12	200.0E-12
SN68	200.0E-12	250.0E-12
SN69	150.0E-12	200.0E-12
SN70	200.0E-12	200.0E-12
SN71	150.0E-12	150.0E-12
SN72	150.0E-12	300.0E-12
SN73	150.0E-12	200.0E-12
SN74	150.0E-12	200.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	200.0E-12	300.0E-12
Mean	165.0E-12	210.0E-12
Sigma	241.5E-13	394.4E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

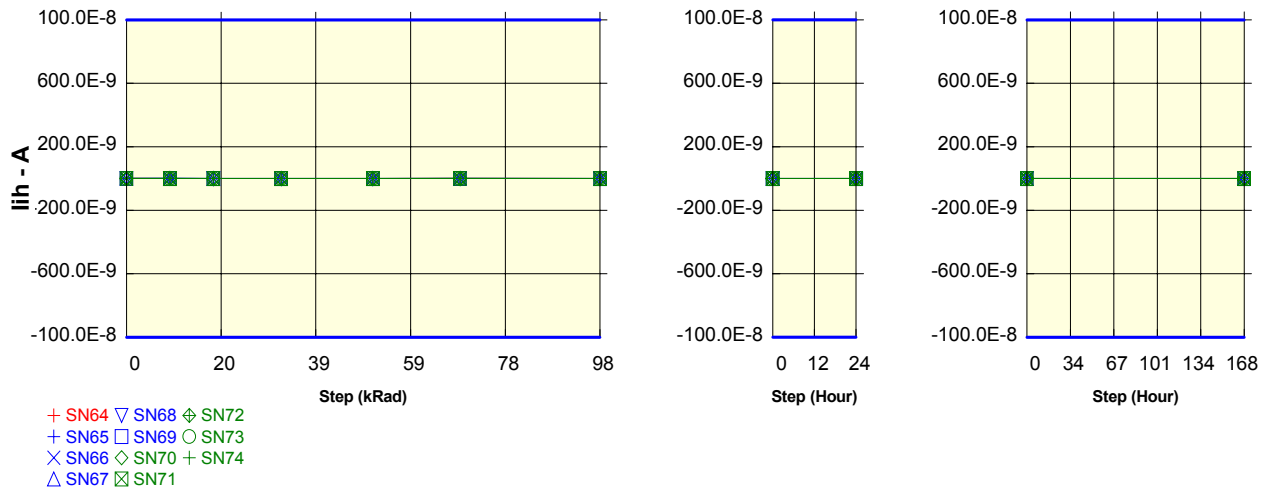
Parameter : Input High Leakage Current : lih/WE

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	900.0E-12	800.0E-12	550.0E-12	550.0E-12	500.0E-12	850.0E-12	350.0E-12
SN65	950.0E-12	650.0E-12	500.0E-12	500.0E-12	500.0E-12	600.0E-12	450.0E-12
SN66	800.0E-12	100.0E-11	500.0E-12	550.0E-12	550.0E-12	500.0E-12	500.0E-12
SN67	800.0E-12	650.0E-12	600.0E-12	600.0E-12	450.0E-12	700.0E-12	350.0E-12
SN68	800.0E-12	800.0E-12	500.0E-12	600.0E-12	500.0E-12	650.0E-12	400.0E-12
SN69	700.0E-12	850.0E-12	600.0E-12	600.0E-12	550.0E-12	850.0E-12	500.0E-12
SN70	800.0E-12	700.0E-12	450.0E-12	600.0E-12	500.0E-12	650.0E-12	400.0E-12
SN71	750.0E-12	450.0E-12	550.0E-12	600.0E-12	450.0E-12	850.0E-12	400.0E-12
SN72	900.0E-12	700.0E-12	450.0E-12	600.0E-12	450.0E-12	750.0E-12	400.0E-12
SN73	800.0E-12	650.0E-12	450.0E-12	550.0E-12	550.0E-12	550.0E-12	400.0E-12
SN74	650.0E-12	950.0E-12	450.0E-12	600.0E-12	600.0E-12	600.0E-12	350.0E-12
Statistics							
Min	650.0E-12	450.0E-12	450.0E-12	500.0E-12	450.0E-12	500.0E-12	350.0E-12
Max	950.0E-12	100.0E-11	600.0E-12	600.0E-12	600.0E-12	850.0E-12	500.0E-12
Mean	795.0E-12	740.0E-12	505.0E-12	580.0E-12	510.0E-12	670.0E-12	415.0E-12
Sigma	864.4E-13	163.0E-12	598.6E-13	349.6E-13	516.4E-13	118.3E-12	529.7E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	350.0E-12	200.0E-12
SN65	450.0E-12	200.0E-12
SN66	500.0E-12	150.0E-12
SN67	350.0E-12	150.0E-12
SN68	400.0E-12	200.0E-12
SN69	500.0E-12	200.0E-12
SN70	400.0E-12	150.0E-12
SN71	400.0E-12	300.0E-12
SN72	400.0E-12	200.0E-12
SN73	400.0E-12	200.0E-12
SN74	350.0E-12	150.0E-12
Statistics		
Min	350.0E-12	150.0E-12
Max	500.0E-12	300.0E-12
Mean	415.0E-12	190.0E-12
Sigma	529.7E-13	459.5E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	400.0E-12
SN65	200.0E-12	400.0E-12
SN66	150.0E-12	400.0E-12
SN67	150.0E-12	450.0E-12
SN68	200.0E-12	450.0E-12
SN69	200.0E-12	350.0E-12
SN70	150.0E-12	400.0E-12
SN71	300.0E-12	400.0E-12
SN72	200.0E-12	350.0E-12
SN73	200.0E-12	350.0E-12
SN74	150.0E-12	350.0E-12
Statistics		
Min	150.0E-12	350.0E-12
Max	300.0E-12	450.0E-12
Mean	190.0E-12	390.0E-12
Sigma	459.5E-13	394.4E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

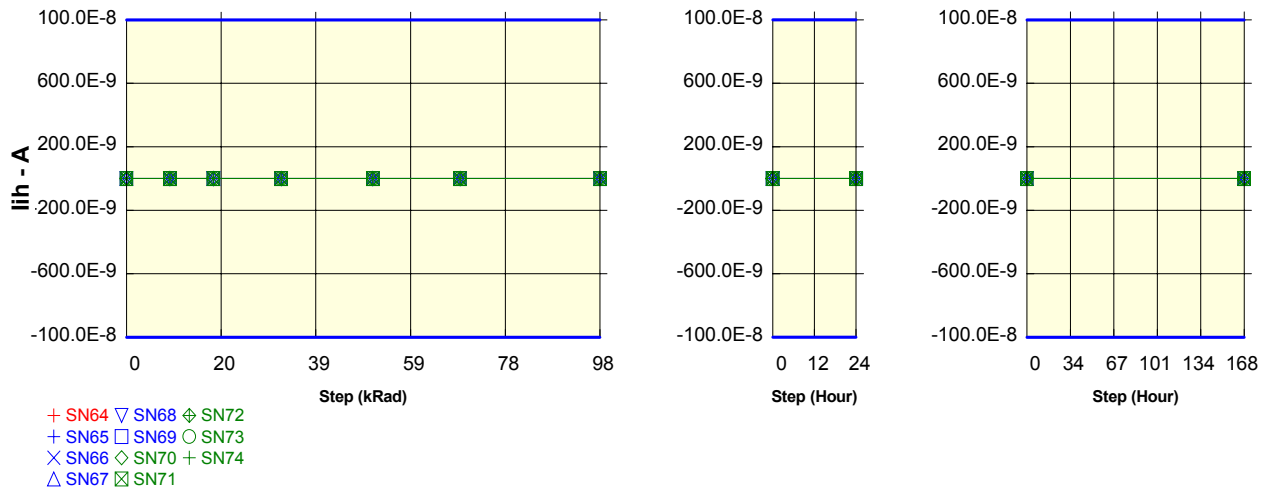
Parameter : Input High Leakage Current : IihBA1

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	250.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12
SN65	250.0E-12	300.0E-12	150.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12
SN66	250.0E-12	300.0E-12	150.0E-12	200.0E-12	200.0E-12	250.0E-12	250.0E-12
SN67	250.0E-12	200.0E-12	200.0E-12	200.0E-12	300.0E-12	250.0E-12	200.0E-12
SN68	300.0E-12	150.0E-12	250.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12
SN69	250.0E-12	200.0E-12	150.0E-12	200.0E-12	250.0E-12	200.0E-12	150.0E-12
SN70	250.0E-12	200.0E-12	300.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12
SN71	250.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	150.0E-12
SN72	250.0E-12	250.0E-12	200.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12
SN73	300.0E-12	250.0E-12	200.0E-12	300.0E-12	300.0E-12	200.0E-12	200.0E-12
SN74	350.0E-12	250.0E-12	200.0E-12	200.0E-12	150.0E-12	200.0E-12	200.0E-12
Statistics							
Min	250.0E-12	150.0E-12	150.0E-12	200.0E-12	150.0E-12	150.0E-12	150.0E-12
Max	350.0E-12	300.0E-12	300.0E-12	300.0E-12	300.0E-12	250.0E-12	250.0E-12
Mean	270.0E-12	230.0E-12	200.0E-12	210.0E-12	215.0E-12	205.0E-12	185.0E-12
Sigma	349.6E-13	483.0E-13	471.4E-13	316.2E-13	529.7E-13	283.8E-13	337.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	150.0E-12	200.0E-12
SN65	200.0E-12	150.0E-12
SN66	250.0E-12	200.0E-12
SN67	200.0E-12	150.0E-12
SN68	150.0E-12	150.0E-12
SN69	150.0E-12	150.0E-12
SN70	200.0E-12	150.0E-12
SN71	150.0E-12	200.0E-12
SN72	150.0E-12	250.0E-12
SN73	200.0E-12	150.0E-12
SN74	200.0E-12	150.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	250.0E-12	250.0E-12
Mean	185.0E-12	170.0E-12
Sigma	337.5E-13	349.6E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	100.0E-12
SN65	150.0E-12	150.0E-12
SN66	200.0E-12	200.0E-12
SN67	150.0E-12	150.0E-12
SN68	150.0E-12	150.0E-12
SN69	150.0E-12	150.0E-12
SN70	150.0E-12	150.0E-12
SN71	200.0E-12	150.0E-12
SN72	250.0E-12	150.0E-12
SN73	150.0E-12	200.0E-12
SN74	150.0E-12	100.0E-12
Statistics		
Min	150.0E-12	100.0E-12
Max	250.0E-12	200.0E-12
Mean	170.0E-12	155.0E-12
Sigma	349.6E-13	283.8E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

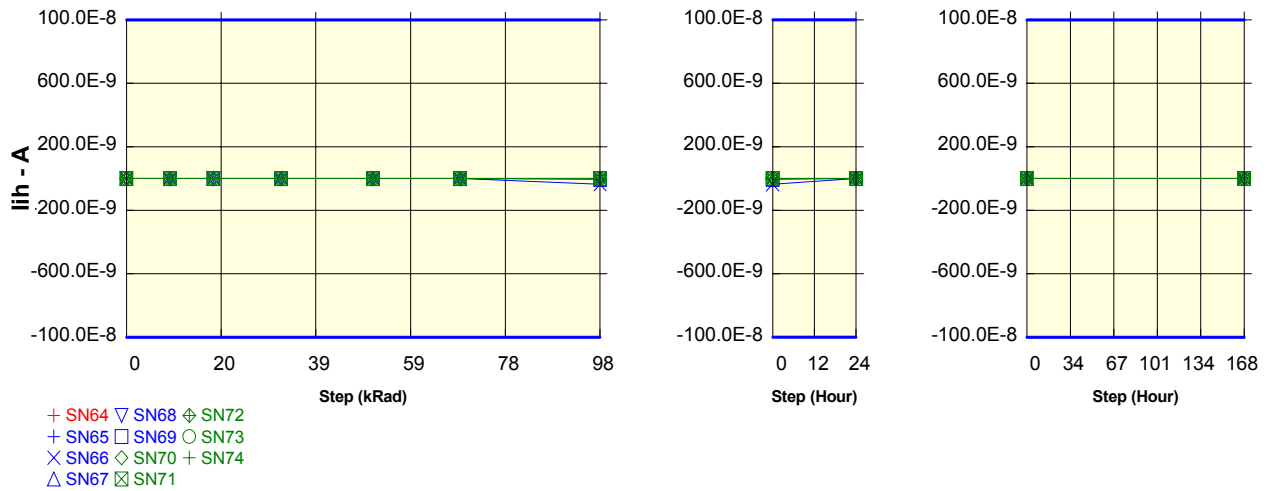
Parameter : Input High Leakage Current : IihBA0

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-300.0E-12	-350.0E-12	-350.0E-12	-400.0E-12	-400.0E-12	-450.0E-12	-350.0E-12
SN65	-250.0E-12	-250.0E-12	-300.0E-12	-350.0E-12	-400.0E-12	-350.0E-12	-350.0E-12
SN66	-400.0E-12	-350.0E-12	-400.0E-12	-450.0E-12	-500.0E-12	-400.0E-12	-351.5E-10
SN67	-400.0E-12	-350.0E-12	-300.0E-12	-400.0E-12	-400.0E-12	-450.0E-12	-525.0E-11
SN68	-350.0E-12	-300.0E-12	-250.0E-12	-400.0E-12	-350.0E-12	-300.0E-12	-250.0E-12
SN69	-250.0E-12	-250.0E-12	-250.0E-12	-400.0E-12	-300.0E-12	-300.0E-12	-400.0E-12
SN70	-300.0E-12	-350.0E-12	-300.0E-12	-400.0E-12	-300.0E-12	-350.0E-12	-450.0E-12
SN71	-300.0E-12	-300.0E-12	-300.0E-12	-300.0E-12	-350.0E-12	-400.0E-12	-300.0E-12
SN72	-250.0E-12	-250.0E-12	-300.0E-12	-300.0E-12	-350.0E-12	-450.0E-12	-300.0E-12
SN73	-300.0E-12	-300.0E-12	-350.0E-12	-400.0E-12	-450.0E-12	-350.0E-12	-350.0E-12
SN74	-350.0E-12	-350.0E-12	-300.0E-12	-400.0E-12	-350.0E-12	-350.0E-12	-300.0E-12
Statistics							
Min	-400.0E-12	-350.0E-12	-400.0E-12	-450.0E-12	-500.0E-12	-450.0E-12	-351.5E-10
Max	-250.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-300.0E-12	-300.0E-12	-250.0E-12
Mean	-315.0E-12	-305.0E-12	-305.0E-12	-380.0E-12	-375.0E-12	-370.0E-12	-431.0E-11
Sigma	579.8E-13	437.8E-13	437.8E-13	483.0E-13	634.6E-13	537.5E-13	109.5E-10

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-350.0E-12	-450.0E-12
SN65	-350.0E-12	-300.0E-12
SN66	-351.5E-10	-400.0E-12
SN67	-525.0E-11	-400.0E-12
SN68	-250.0E-12	-350.0E-12
SN69	-400.0E-12	-300.0E-12
SN70	-450.0E-12	-300.0E-12
SN71	-300.0E-12	-350.0E-12
SN72	-300.0E-12	-350.0E-12
SN73	-350.0E-12	-350.0E-12
SN74	-300.0E-12	-350.0E-12
Statistics		
Min	-351.5E-10	-400.0E-12
Max	-250.0E-12	-300.0E-12
Mean	-431.0E-11	-345.0E-12
Sigma	109.5E-10	368.9E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-450.0E-12	-350.0E-12
SN65	-300.0E-12	-400.0E-12
SN66	-400.0E-12	-450.0E-12
SN67	-400.0E-12	-350.0E-12
SN68	-350.0E-12	-400.0E-12
SN69	-300.0E-12	-350.0E-12
SN70	-300.0E-12	-300.0E-12
SN71	-350.0E-12	-350.0E-12
SN72	-350.0E-12	-350.0E-12
SN73	-350.0E-12	-300.0E-12
SN74	-350.0E-12	-400.0E-12
Statistics		
Min	-400.0E-12	-450.0E-12
Max	-300.0E-12	-300.0E-12
Mean	-345.0E-12	-365.0E-12
Sigma	368.9E-13	474.3E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

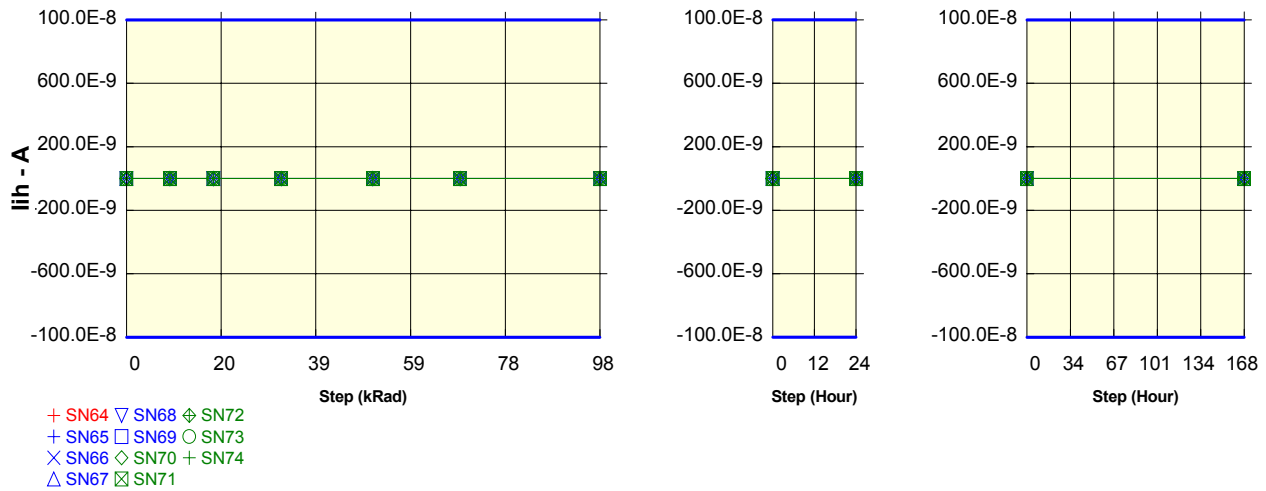
Parameter : Input High Leakage Current : lihDQMH

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-400.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-450.0E-12	-450.0E-12	-300.0E-12
SN65	-350.0E-12	-250.0E-12	-200.0E-12	-300.0E-12	-300.0E-12	-450.0E-12	-300.0E-12
SN66	-400.0E-12	-350.0E-12	-300.0E-12	-400.0E-12	-350.0E-12	-350.0E-12	-350.0E-12
SN67	-400.0E-12	-250.0E-12	-250.0E-12	-350.0E-12	-350.0E-12	-550.0E-12	-450.0E-12
SN68	-300.0E-12	-250.0E-12	-200.0E-12	-300.0E-12	-250.0E-12	-300.0E-12	-250.0E-12
SN69	-200.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-350.0E-12	-300.0E-12
SN70	-250.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-300.0E-12	-200.0E-12	-350.0E-12
SN71	-250.0E-12	-200.0E-12	-250.0E-12	-300.0E-12	-250.0E-12	-450.0E-12	-250.0E-12
SN72	-350.0E-12	-250.0E-12	-250.0E-12	-350.0E-12	-200.0E-12	-450.0E-12	-200.0E-12
SN73	-250.0E-12	-250.0E-12	-200.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN74	-300.0E-12	-300.0E-12	-250.0E-12	-400.0E-12	-350.0E-12	-200.0E-12	-300.0E-12
Statistics							
Min	-400.0E-12	-350.0E-12	-300.0E-12	-400.0E-12	-350.0E-12	-550.0E-12	-450.0E-12
Max	-200.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-200.0E-12	-200.0E-12
Mean	-305.0E-12	-260.0E-12	-240.0E-12	-325.0E-12	-285.0E-12	-355.0E-12	-300.0E-12
Sigma	685.2E-13	394.4E-13	316.2E-13	485.9E-13	529.7E-13	118.9E-12	707.1E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-300.0E-12	-350.0E-12
SN65	-300.0E-12	-250.0E-12
SN66	-350.0E-12	-300.0E-12
SN67	-450.0E-12	-350.0E-12
SN68	-250.0E-12	-250.0E-12
SN69	-300.0E-12	-250.0E-12
SN70	-350.0E-12	-250.0E-12
SN71	-250.0E-12	-250.0E-12
SN72	-200.0E-12	-250.0E-12
SN73	-250.0E-12	-250.0E-12
SN74	-300.0E-12	-250.0E-12
Statistics		
Min	-450.0E-12	-350.0E-12
Max	-200.0E-12	-250.0E-12
Mean	-300.0E-12	-265.0E-12
Sigma	707.1E-13	337.5E-13

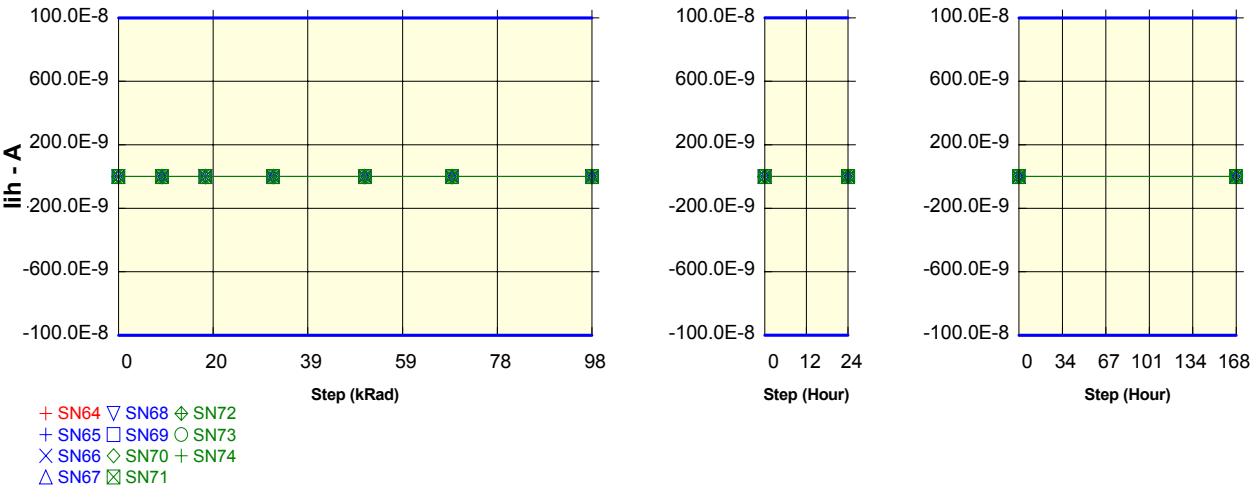
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-350.0E-12	-300.0E-12
SN65	-250.0E-12	-400.0E-12
SN66	-300.0E-12	-500.0E-12
SN67	-350.0E-12	-450.0E-12
SN68	-250.0E-12	-400.0E-12
SN69	-250.0E-12	-400.0E-12
SN70	-250.0E-12	-400.0E-12
SN71	-250.0E-12	-450.0E-12
SN72	-250.0E-12	-300.0E-12
SN73	-250.0E-12	-350.0E-12
SN74	-250.0E-12	-400.0E-12
Statistics		
Min	-350.0E-12	-500.0E-12
Max	-250.0E-12	-300.0E-12
Mean	-265.0E-12	-405.0E-12
Sigma	337.5E-13	550.3E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
 Parameter : Input High Leakage Current : Iih/CS

Unit : A
 Spec Limit Min : -100.0E-8
 Spec Limit Max : 100.0E-8
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-350.0E-12	-200.0E-12	-350.0E-12	-300.0E-12	-350.0E-12	-300.0E-12	-350.0E-12
SN65	-200.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-250.0E-12	-350.0E-12	-250.0E-12
SN66	-250.0E-12	-300.0E-12	-250.0E-12	-350.0E-12	-350.0E-12	-250.0E-12	-300.0E-12
SN67	-300.0E-12	-200.0E-12	-250.0E-12	-300.0E-12	-350.0E-12	-300.0E-12	-300.0E-12
SN68	-250.0E-12	-200.0E-12	-300.0E-12	-350.0E-12	-300.0E-12	-250.0E-12	-250.0E-12
SN69	-200.0E-12	-250.0E-12	-150.0E-12	-250.0E-12	-200.0E-12	-300.0E-12	-300.0E-12
SN70	-200.0E-12	-250.0E-12	-200.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN71	-200.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12
SN72	-250.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN73	-200.0E-12	-150.0E-12	-150.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN74	-250.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-300.0E-12	-250.0E-12	-250.0E-12
Statistics							
Min	-300.0E-12	-300.0E-12	-300.0E-12	-350.0E-12	-350.0E-12	-350.0E-12	-300.0E-12
Max	-200.0E-12	-150.0E-12	-150.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12
Mean	-230.0E-12	-225.0E-12	-220.0E-12	-295.0E-12	-270.0E-12	-270.0E-12	-265.0E-12
Sigma	349.6E-13	424.9E-13	483.0E-13	368.9E-13	537.5E-13	349.6E-13	241.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-350.0E-12	-350.0E-12
SN65	-250.0E-12	-200.0E-12
SN66	-300.0E-12	-300.0E-12
SN67	-300.0E-12	-250.0E-12
SN68	-250.0E-12	-250.0E-12
SN69	-300.0E-12	-250.0E-12
SN70	-250.0E-12	-300.0E-12
SN71	-250.0E-12	-200.0E-12
SN72	-250.0E-12	-250.0E-12
SN73	-250.0E-12	-250.0E-12
SN74	-250.0E-12	-250.0E-12
Statistics		
Min	-300.0E-12	-300.0E-12
Max	-250.0E-12	-200.0E-12
Mean	-265.0E-12	-250.0E-12
Sigma	241.5E-13	333.3E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-350.0E-12	-250.0E-12
SN65	-200.0E-12	-250.0E-12
SN66	-300.0E-12	-300.0E-12
SN67	-250.0E-12	-250.0E-12
SN68	-250.0E-12	-250.0E-12
SN69	-250.0E-12	-300.0E-12
SN70	-300.0E-12	-200.0E-12
SN71	-200.0E-12	-200.0E-12
SN72	-250.0E-12	-200.0E-12
SN73	-250.0E-12	-250.0E-12
SN74	-250.0E-12	-200.0E-12
Statistics		
Min	-300.0E-12	-300.0E-12
Max	-200.0E-12	-200.0E-12
Mean	-250.0E-12	-240.0E-12
Sigma	333.3E-13	394.4E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

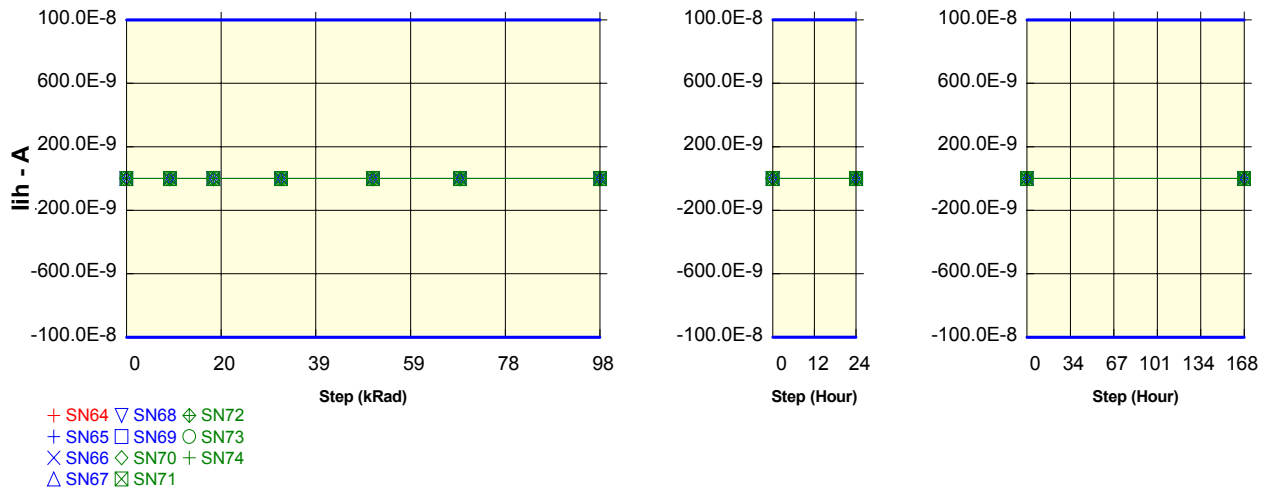
Parameter : Input High Leakage Current : IihA11

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-350.0E-12	-250.0E-12	-300.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-300.0E-12
SN65	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-300.0E-12	-300.0E-12
SN66	-250.0E-12	-200.0E-12	-200.0E-12	-350.0E-12	-250.0E-12	-250.0E-12	-200.0E-12
SN67	-400.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-300.0E-12	-300.0E-12	-300.0E-12
SN68	-350.0E-12	-200.0E-12	-250.0E-12	-350.0E-12	-200.0E-12	-200.0E-12	-300.0E-12
SN69	-300.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-300.0E-12	-250.0E-12	-250.0E-12
SN70	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-300.0E-12
SN71	-250.0E-12	-200.0E-12	-250.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN72	-250.0E-12	-200.0E-12	-150.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN73	-350.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-300.0E-12	-250.0E-12	-200.0E-12
SN74	-300.0E-12	-250.0E-12	-200.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-200.0E-12
Statistics							
Min	-400.0E-12	-250.0E-12	-250.0E-12	-350.0E-12	-300.0E-12	-300.0E-12	-300.0E-12
Max	-250.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-200.0E-12
Mean	-300.0E-12	-220.0E-12	-220.0E-12	-285.0E-12	-260.0E-12	-255.0E-12	-255.0E-12
Sigma	527.0E-13	258.2E-13	349.6E-13	474.3E-13	394.4E-13	283.8E-13	437.8E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-300.0E-12	-350.0E-12
SN65	-300.0E-12	-250.0E-12
SN66	-200.0E-12	-250.0E-12
SN67	-300.0E-12	-350.0E-12
SN68	-300.0E-12	-200.0E-12
SN69	-250.0E-12	-300.0E-12
SN70	-300.0E-12	-250.0E-12
SN71	-250.0E-12	-250.0E-12
SN72	-250.0E-12	-200.0E-12
SN73	-200.0E-12	-200.0E-12
SN74	-200.0E-12	-250.0E-12
Statistics		
Min	-300.0E-12	-350.0E-12
Max	-200.0E-12	-200.0E-12
Mean	-255.0E-12	-250.0E-12
Sigma	437.8E-13	471.4E-13

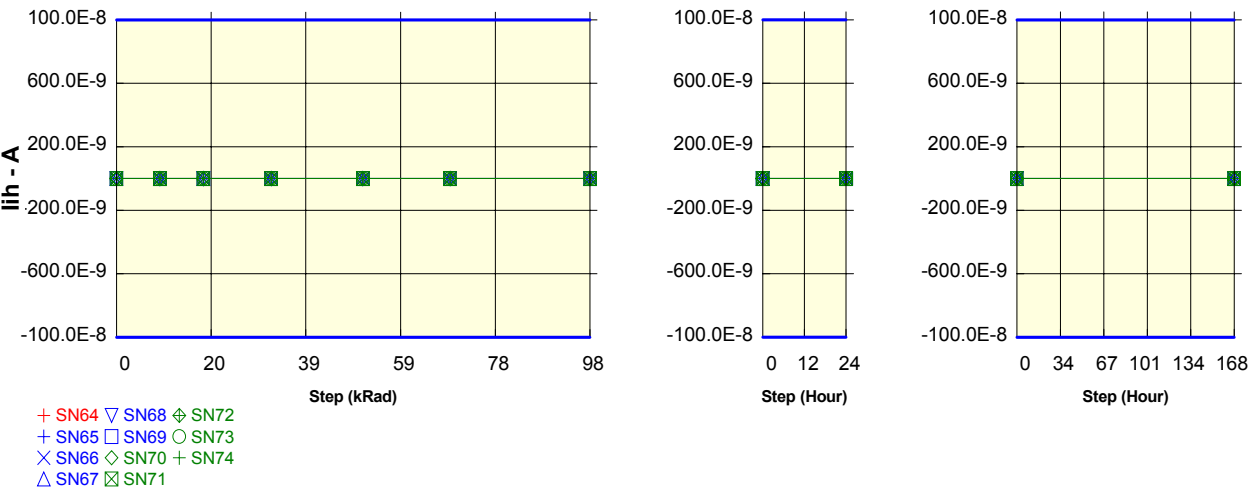
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-350.0E-12	-250.0E-12
SN65	-250.0E-12	-200.0E-12
SN66	-250.0E-12	-150.0E-12
SN67	-350.0E-12	-250.0E-12
SN68	-200.0E-12	-200.0E-12
SN69	-300.0E-12	-200.0E-12
SN70	-250.0E-12	-150.0E-12
SN71	-250.0E-12	-250.0E-12
SN72	-200.0E-12	-250.0E-12
SN73	-200.0E-12	-250.0E-12
SN74	-250.0E-12	-200.0E-12
Statistics		
Min	-350.0E-12	-250.0E-12
Max	-200.0E-12	-150.0E-12
Mean	-250.0E-12	-210.0E-12
Sigma	471.4E-13	394.4E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Input High Leakage Current : lihA10

Unit : A
Spec Limit Min : -100.0E-8
Spec Limit Max : 100.0E-8
Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-350.0E-12	-300.0E-12	-300.0E-12	-350.0E-12	-250.0E-12	-300.0E-12	-350.0E-12
SN65	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-200.0E-12	-300.0E-12
SN66	-250.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-200.0E-12	-250.0E-12	-300.0E-12
SN67	-300.0E-12	-200.0E-12	-250.0E-12	-350.0E-12	-250.0E-12	-350.0E-12	-350.0E-12
SN68	-300.0E-12	-200.0E-12	-250.0E-12	-350.0E-12	-300.0E-12	-200.0E-12	-200.0E-12
SN69	-250.0E-12	-250.0E-12	-200.0E-12	-300.0E-12	-250.0E-12	-150.0E-12	-300.0E-12
SN70	-250.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12
SN71	-200.0E-12	-150.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-200.0E-12
SN72	-200.0E-12	-200.0E-12	-200.0E-12	-300.0E-12	-200.0E-12	-300.0E-12	-150.0E-12
SN73	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-200.0E-12
SN74	-250.0E-12	-350.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-200.0E-12	-200.0E-12
Statistics							
Min	-300.0E-12	-350.0E-12	-250.0E-12	-350.0E-12	-300.0E-12	-350.0E-12	-350.0E-12
Max	-200.0E-12	-150.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-150.0E-12	-150.0E-12
Mean	-255.0E-12	-230.0E-12	-230.0E-12	-285.0E-12	-230.0E-12	-240.0E-12	-245.0E-12
Sigma	368.9E-13	537.5E-13	258.2E-13	411.6E-13	349.6E-13	567.6E-13	643.3E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-350.0E-12	-300.0E-12
SN65	-300.0E-12	-250.0E-12
SN66	-300.0E-12	-250.0E-12
SN67	-350.0E-12	-250.0E-12
SN68	-200.0E-12	-250.0E-12
SN69	-300.0E-12	-250.0E-12
SN70	-250.0E-12	-250.0E-12
SN71	-200.0E-12	-150.0E-12
SN72	-150.0E-12	-200.0E-12
SN73	-200.0E-12	-200.0E-12
SN74	-200.0E-12	-200.0E-12
Statistics		
Min	-350.0E-12	-250.0E-12
Max	-150.0E-12	-150.0E-12
Mean	-245.0E-12	-225.0E-12
Sigma	643.3E-13	353.6E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-300.0E-12	-250.0E-12
SN65	-250.0E-12	-250.0E-12
SN66	-250.0E-12	-250.0E-12
SN67	-250.0E-12	-250.0E-12
SN68	-250.0E-12	-300.0E-12
SN69	-250.0E-12	-250.0E-12
SN70	-250.0E-12	-200.0E-12
SN71	-150.0E-12	-200.0E-12
SN72	-200.0E-12	-250.0E-12
SN73	-200.0E-12	-250.0E-12
SN74	-200.0E-12	-300.0E-12
Statistics		
Min	-250.0E-12	-300.0E-12
Max	-150.0E-12	-200.0E-12
Mean	-225.0E-12	-250.0E-12
Sigma	353.6E-13	333.3E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

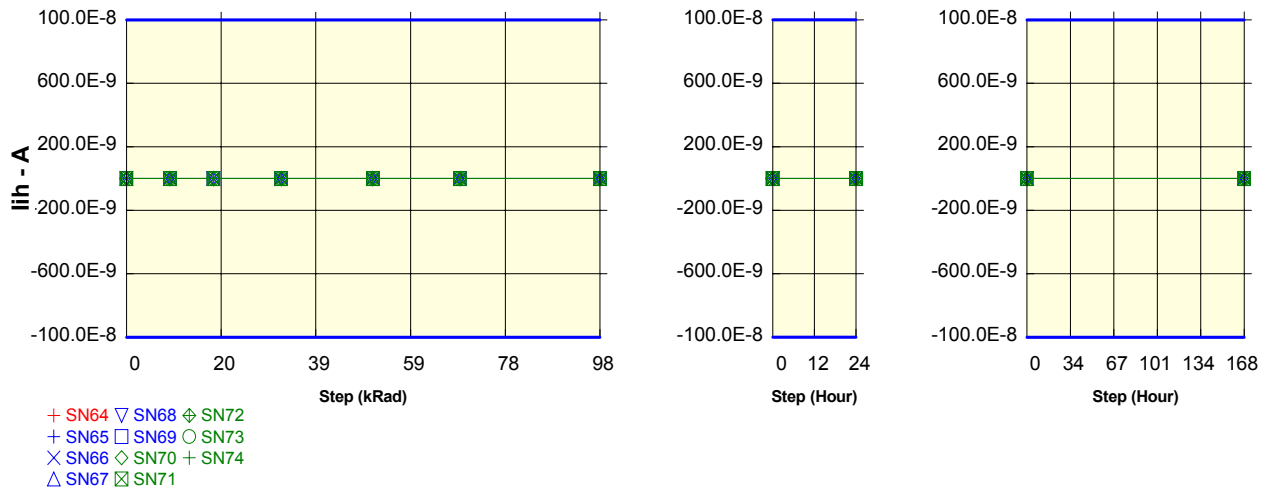
Parameter : Input High Leakage Current : lihA09

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-350.0E-12	-300.0E-12	-350.0E-12	-350.0E-12	-350.0E-12	-350.0E-12	-300.0E-12
SN65	-300.0E-12	-200.0E-12	-200.0E-12	-300.0E-12	-200.0E-12	-300.0E-12	-250.0E-12
SN66	-250.0E-12	-300.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-200.0E-12	-250.0E-12
SN67	-300.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-350.0E-12	-250.0E-12
SN68	-400.0E-12	-250.0E-12	-250.0E-12	-300.0E-12	-200.0E-12	-250.0E-12	-200.0E-12
SN69	-250.0E-12	-200.0E-12	-150.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-250.0E-12
SN70	-200.0E-12	-250.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-250.0E-12
SN71	-250.0E-12	-150.0E-12	-200.0E-12	-250.0E-12	-200.0E-12	-250.0E-12	-200.0E-12
SN72	-350.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-250.0E-12	-250.0E-12	-200.0E-12
SN73	-350.0E-12	-200.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-200.0E-12
SN74	-250.0E-12	-300.0E-12	-250.0E-12	-250.0E-12	-250.0E-12	-200.0E-12	-200.0E-12
Statistics							
Min	-400.0E-12	-300.0E-12	-250.0E-12	-300.0E-12	-250.0E-12	-350.0E-12	-250.0E-12
Max	-200.0E-12	-150.0E-12	-150.0E-12	-200.0E-12	-200.0E-12	-200.0E-12	-200.0E-12
Mean	-290.0E-12	-230.0E-12	-200.0E-12	-245.0E-12	-220.0E-12	-250.0E-12	-225.0E-12
Sigma	614.6E-13	483.0E-13	333.3E-13	368.9E-13	258.2E-13	471.4E-13	263.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-300.0E-12	-250.0E-12
SN65	-250.0E-12	-200.0E-12
SN66	-250.0E-12	-250.0E-12
SN67	-250.0E-12	-250.0E-12
SN68	-200.0E-12	-200.0E-12
SN69	-250.0E-12	-200.0E-12
SN70	-250.0E-12	-200.0E-12
SN71	-200.0E-12	-200.0E-12
SN72	-200.0E-12	-250.0E-12
SN73	-200.0E-12	-200.0E-12
SN74	-200.0E-12	-200.0E-12
Statistics		
Min	-250.0E-12	-250.0E-12
Max	-200.0E-12	-200.0E-12
Mean	-225.0E-12	-215.0E-12
Sigma	263.5E-13	241.5E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-250.0E-12	-250.0E-12
SN65	-200.0E-12	-200.0E-12
SN66	-250.0E-12	-250.0E-12
SN67	-250.0E-12	-250.0E-12
SN68	-200.0E-12	-200.0E-12
SN69	-200.0E-12	-150.0E-12
SN70	-200.0E-12	-200.0E-12
SN71	-200.0E-12	-200.0E-12
SN72	-250.0E-12	-200.0E-12
SN73	-200.0E-12	-150.0E-12
SN74	-200.0E-12	-200.0E-12
Statistics		
Min	-250.0E-12	-250.0E-12
Max	-200.0E-12	-150.0E-12
Mean	-215.0E-12	-200.0E-12
Sigma	241.5E-13	333.3E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

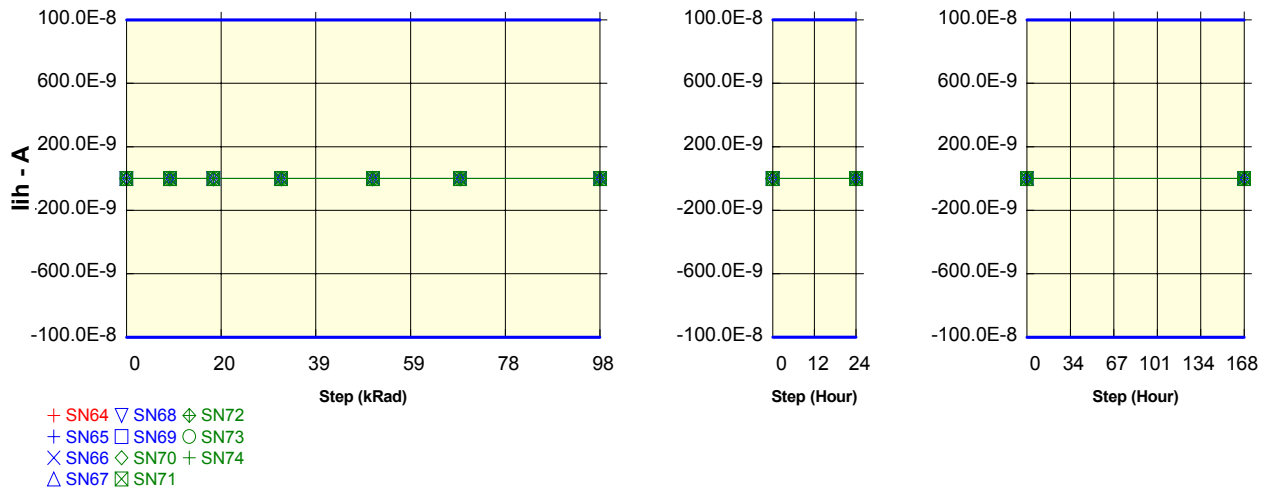
Parameter : Input High Leakage Current : IihA06

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	400.0E-12	350.0E-12	200.0E-12	250.0E-12	300.0E-12	350.0E-12	250.0E-12
SN65	400.0E-12	250.0E-12	250.0E-12	250.0E-12	400.0E-12	650.0E-12	350.0E-12
SN66	400.0E-12	400.0E-12	200.0E-12	300.0E-12	400.0E-12	400.0E-12	400.0E-12
SN67	400.0E-12	300.0E-12	200.0E-12	450.0E-12	300.0E-12	600.0E-12	300.0E-12
SN68	450.0E-12	150.0E-12	200.0E-12	400.0E-12	500.0E-12	450.0E-12	250.0E-12
SN69	350.0E-12	300.0E-12	200.0E-12	300.0E-12	350.0E-12	400.0E-12	250.0E-12
SN70	300.0E-12	150.0E-12	200.0E-12	400.0E-12	250.0E-12	300.0E-12	200.0E-12
SN71	400.0E-12	350.0E-12	150.0E-12	300.0E-12	250.0E-12	600.0E-12	250.0E-12
SN72	450.0E-12	250.0E-12	250.0E-12	300.0E-12	400.0E-12	350.0E-12	150.0E-12
SN73	400.0E-12	250.0E-12	200.0E-12	300.0E-12	350.0E-12	350.0E-12	200.0E-12
SN74	350.0E-12	250.0E-12	200.0E-12	450.0E-12	450.0E-12	300.0E-12	250.0E-12
Statistics							
Min	300.0E-12	150.0E-12	150.0E-12	250.0E-12	250.0E-12	300.0E-12	150.0E-12
Max	450.0E-12	400.0E-12	250.0E-12	450.0E-12	500.0E-12	650.0E-12	400.0E-12
Mean	390.0E-12	265.0E-12	205.0E-12	345.0E-12	365.0E-12	440.0E-12	260.0E-12
Sigma	459.5E-13	783.5E-13	283.8E-13	724.6E-13	818.2E-13	130.8E-12	737.9E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	250.0E-12	400.0E-12
SN65	350.0E-12	200.0E-12
SN66	400.0E-12	250.0E-12
SN67	300.0E-12	250.0E-12
SN68	250.0E-12	250.0E-12
SN69	250.0E-12	300.0E-12
SN70	200.0E-12	300.0E-12
SN71	250.0E-12	150.0E-12
SN72	150.0E-12	250.0E-12
SN73	200.0E-12	400.0E-12
SN74	250.0E-12	250.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	400.0E-12	400.0E-12
Mean	260.0E-12	260.0E-12
Sigma	737.9E-13	658.3E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	400.0E-12	200.0E-12
SN65	200.0E-12	350.0E-12
SN66	250.0E-12	400.0E-12
SN67	250.0E-12	450.0E-12
SN68	250.0E-12	500.0E-12
SN69	300.0E-12	450.0E-12
SN70	300.0E-12	500.0E-12
SN71	150.0E-12	600.0E-12
SN72	250.0E-12	450.0E-12
SN73	400.0E-12	400.0E-12
SN74	250.0E-12	500.0E-12
Statistics		
Min	150.0E-12	350.0E-12
Max	400.0E-12	600.0E-12
Mean	260.0E-12	460.0E-12
Sigma	658.3E-13	699.2E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

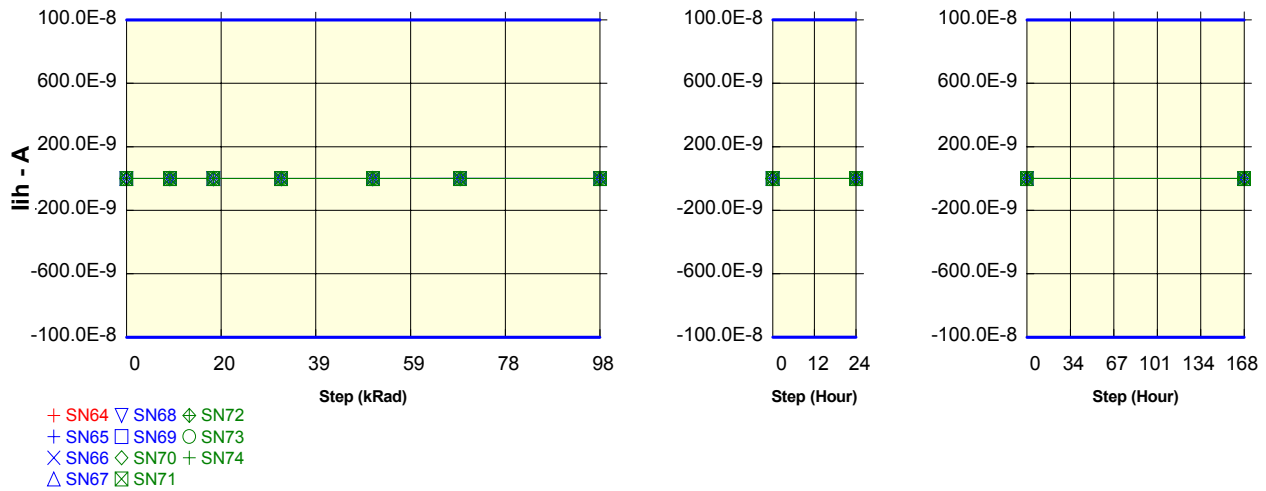
Parameter : Input High Leakage Current : lihA04

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	400.0E-12	350.0E-12	200.0E-12	350.0E-12	300.0E-12	700.0E-12	150.0E-12
SN65	550.0E-12	300.0E-12	150.0E-12	300.0E-12	400.0E-12	800.0E-12	400.0E-12
SN66	400.0E-12	400.0E-12	150.0E-12	350.0E-12	350.0E-12	450.0E-12	200.0E-12
SN67	400.0E-12	200.0E-12	250.0E-12	300.0E-12	300.0E-12	850.0E-12	350.0E-12
SN68	500.0E-12	150.0E-12	200.0E-12	250.0E-12	400.0E-12	650.0E-12	300.0E-12
SN69	200.0E-12	350.0E-12	200.0E-12	400.0E-12	300.0E-12	600.0E-12	350.0E-12
SN70	300.0E-12	100.0E-12	200.0E-12	400.0E-12	450.0E-12	350.0E-12	300.0E-12
SN71	500.0E-12	350.0E-12	200.0E-12	300.0E-12	350.0E-12	500.0E-12	200.0E-12
SN72	400.0E-12	200.0E-12	200.0E-12	300.0E-12	350.0E-12	800.0E-12	150.0E-12
SN73	400.0E-12	300.0E-12	150.0E-12	300.0E-12	400.0E-12	250.0E-12	250.0E-12
SN74	300.0E-12	500.0E-12	200.0E-12	300.0E-12	400.0E-12	300.0E-12	200.0E-12
Statistics							
Min	200.0E-12	100.0E-12	150.0E-12	250.0E-12	300.0E-12	250.0E-12	150.0E-12
Max	550.0E-12	500.0E-12	250.0E-12	400.0E-12	450.0E-12	850.0E-12	400.0E-12
Mean	395.0E-12	285.0E-12	190.0E-12	320.0E-12	370.0E-12	555.0E-12	270.0E-12
Sigma	106.6E-12	122.6E-12	316.2E-13	483.0E-13	483.0E-13	219.2E-12	823.3E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	150.0E-12	200.0E-12
SN65	400.0E-12	250.0E-12
SN66	200.0E-12	200.0E-12
SN67	350.0E-12	150.0E-12
SN68	300.0E-12	150.0E-12
SN69	350.0E-12	200.0E-12
SN70	300.0E-12	150.0E-12
SN71	200.0E-12	250.0E-12
SN72	150.0E-12	200.0E-12
SN73	250.0E-12	150.0E-12
SN74	200.0E-12	250.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	400.0E-12	250.0E-12
Mean	270.0E-12	195.0E-12
Sigma	823.3E-13	437.8E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	200.0E-12	200.0E-12
SN65	250.0E-12	350.0E-12
SN66	200.0E-12	400.0E-12
SN67	150.0E-12	400.0E-12
SN68	150.0E-12	400.0E-12
SN69	200.0E-12	500.0E-12
SN70	150.0E-12	450.0E-12
SN71	250.0E-12	450.0E-12
SN72	200.0E-12	400.0E-12
SN73	150.0E-12	250.0E-12
SN74	250.0E-12	450.0E-12
Statistics		
Min	150.0E-12	250.0E-12
Max	250.0E-12	500.0E-12
Mean	195.0E-12	405.0E-12
Sigma	437.8E-13	685.2E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

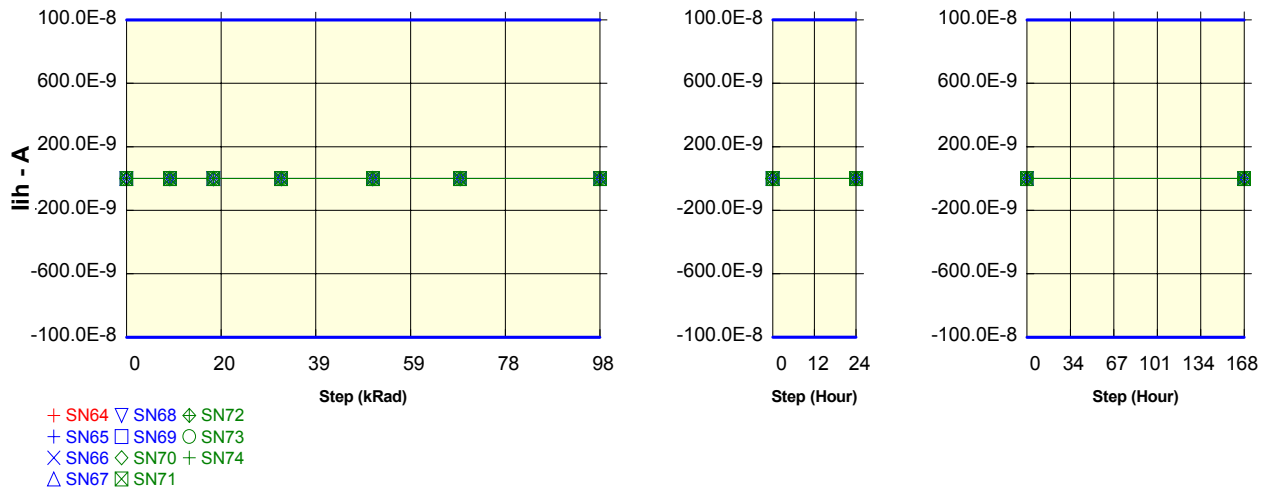
Parameter : Input High Leakage Current : lihA03

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	300.0E-12	200.0E-12	300.0E-12	300.0E-12	200.0E-12	250.0E-12	200.0E-12
SN65	450.0E-12	250.0E-12	150.0E-12	250.0E-12	250.0E-12	250.0E-12	150.0E-12
SN66	300.0E-12	250.0E-12	150.0E-12	300.0E-12	250.0E-12	200.0E-12	200.0E-12
SN67	300.0E-12	200.0E-12	200.0E-12	300.0E-12	300.0E-12	300.0E-12	200.0E-12
SN68	350.0E-12	200.0E-12	250.0E-12	250.0E-12	250.0E-12	300.0E-12	200.0E-12
SN69	250.0E-12	200.0E-12	200.0E-12	200.0E-12	300.0E-12	250.0E-12	200.0E-12
SN70	300.0E-12	250.0E-12	200.0E-12	250.0E-12	300.0E-12	250.0E-12	150.0E-12
SN71	300.0E-12	250.0E-12	200.0E-12	400.0E-12	250.0E-12	400.0E-12	200.0E-12
SN72	350.0E-12	250.0E-12	150.0E-12	300.0E-12	200.0E-12	250.0E-12	200.0E-12
SN73	400.0E-12	150.0E-12	200.0E-12	250.0E-12	300.0E-12	200.0E-12	250.0E-12
SN74	500.0E-12	350.0E-12	250.0E-12	250.0E-12	200.0E-12	300.0E-12	250.0E-12
Statistics							
Min	250.0E-12	150.0E-12	150.0E-12	200.0E-12	200.0E-12	200.0E-12	150.0E-12
Max	500.0E-12	350.0E-12	250.0E-12	400.0E-12	300.0E-12	400.0E-12	250.0E-12
Mean	350.0E-12	235.0E-12	195.0E-12	275.0E-12	260.0E-12	270.0E-12	200.0E-12
Sigma	781.7E-13	529.7E-13	368.9E-13	540.1E-13	394.4E-13	586.9E-13	333.3E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	200.0E-12	150.0E-12
SN65	150.0E-12	200.0E-12
SN66	200.0E-12	200.0E-12
SN67	200.0E-12	200.0E-12
SN68	200.0E-12	200.0E-12
SN69	200.0E-12	250.0E-12
SN70	150.0E-12	200.0E-12
SN71	200.0E-12	200.0E-12
SN72	200.0E-12	200.0E-12
SN73	250.0E-12	200.0E-12
SN74	250.0E-12	250.0E-12
Statistics		
Min	150.0E-12	200.0E-12
Max	250.0E-12	250.0E-12
Mean	200.0E-12	210.0E-12
Sigma	333.3E-13	210.8E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	150.0E-12	150.0E-12
SN65	200.0E-12	200.0E-12
SN66	200.0E-12	250.0E-12
SN67	200.0E-12	150.0E-12
SN68	200.0E-12	250.0E-12
SN69	250.0E-12	200.0E-12
SN70	200.0E-12	150.0E-12
SN71	200.0E-12	200.0E-12
SN72	200.0E-12	250.0E-12
SN73	200.0E-12	150.0E-12
SN74	250.0E-12	200.0E-12
Statistics		
Min	200.0E-12	150.0E-12
Max	250.0E-12	250.0E-12
Mean	210.0E-12	200.0E-12
Sigma	210.8E-13	408.2E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

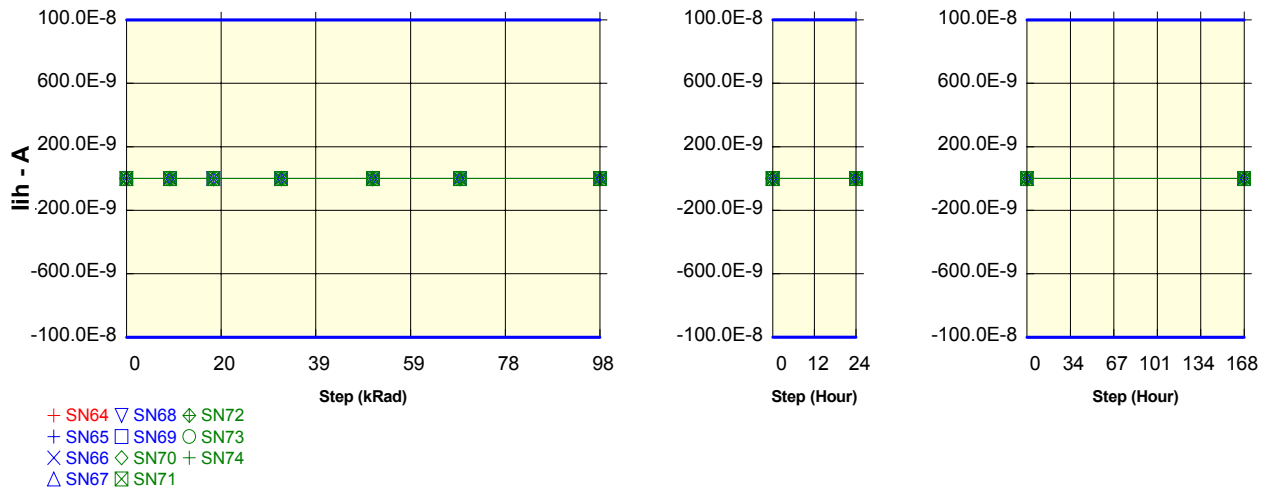
Parameter : Input High Leakage Current : lihA01

Unit : A

Spec Limit Min : -100.0E-8

Spec Limit Max : 100.0E-8

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	400.0E-12	400.0E-12	150.0E-12	250.0E-12	300.0E-12	400.0E-12	250.0E-12
SN65	450.0E-12	350.0E-12	300.0E-12	250.0E-12	350.0E-12	400.0E-12	300.0E-12
SN66	400.0E-12	500.0E-12	250.0E-12	400.0E-12	300.0E-12	200.0E-12	350.0E-12
SN67	300.0E-12	200.0E-12	200.0E-12	300.0E-12	250.0E-12	400.0E-12	250.0E-12
SN68	400.0E-12	350.0E-12	200.0E-12	250.0E-12	250.0E-12	400.0E-12	250.0E-12
SN69	350.0E-12	350.0E-12	150.0E-12	300.0E-12	250.0E-12	300.0E-12	250.0E-12
SN70	400.0E-12	350.0E-12	300.0E-12	300.0E-12	250.0E-12	250.0E-12	250.0E-12
SN71	400.0E-12	300.0E-12	250.0E-12	300.0E-12	400.0E-12	450.0E-12	250.0E-12
SN72	500.0E-12	400.0E-12	300.0E-12	350.0E-12	350.0E-12	350.0E-12	200.0E-12
SN73	400.0E-12	350.0E-12	250.0E-12	300.0E-12	350.0E-12	300.0E-12	300.0E-12
SN74	400.0E-12	500.0E-12	200.0E-12	250.0E-12	250.0E-12	350.0E-12	200.0E-12
Statistics							
Min	300.0E-12	200.0E-12	150.0E-12	250.0E-12	250.0E-12	200.0E-12	200.0E-12
Max	500.0E-12	500.0E-12	300.0E-12	400.0E-12	400.0E-12	450.0E-12	350.0E-12
Mean	400.0E-12	365.0E-12	240.0E-12	300.0E-12	300.0E-12	340.0E-12	260.0E-12
Sigma	527.0E-13	883.5E-13	516.4E-13	471.4E-13	577.4E-13	774.6E-13	459.5E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	250.0E-12	250.0E-12
SN65	300.0E-12	200.0E-12
SN66	350.0E-12	200.0E-12
SN67	250.0E-12	200.0E-12
SN68	250.0E-12	200.0E-12
SN69	250.0E-12	250.0E-12
SN70	250.0E-12	150.0E-12
SN71	250.0E-12	200.0E-12
SN72	200.0E-12	300.0E-12
SN73	300.0E-12	200.0E-12
SN74	200.0E-12	200.0E-12
Statistics		
Min	200.0E-12	150.0E-12
Max	350.0E-12	300.0E-12
Mean	260.0E-12	210.0E-12
Sigma	459.5E-13	394.4E-13

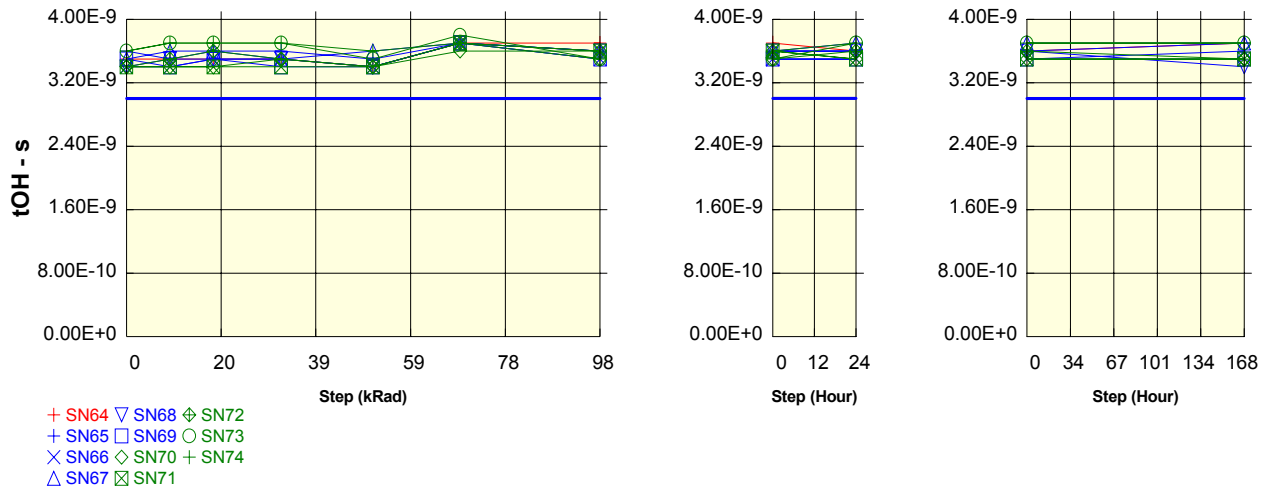
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	250.0E-12	200.0E-12
SN65	200.0E-12	250.0E-12
SN66	200.0E-12	250.0E-12
SN67	200.0E-12	250.0E-12
SN68	200.0E-12	250.0E-12
SN69	250.0E-12	150.0E-12
SN70	150.0E-12	200.0E-12
SN71	200.0E-12	150.0E-12
SN72	300.0E-12	200.0E-12
SN73	200.0E-12	200.0E-12
SN74	200.0E-12	250.0E-12
Statistics		
Min	150.0E-12	150.0E-12
Max	300.0E-12	250.0E-12
Mean	210.0E-12	215.0E-12
Sigma	394.4E-13	411.6E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Data Out Hold Time : tOH

Unit : s
Spec Limit Min : 3.00E-9
Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	3.50E-9	3.50E-9	3.50E-9	3.50E-9	3.40E-9	3.70E-9	3.70E-9
SN65	3.60E-9	3.50E-9	3.60E-9	3.60E-9	3.50E-9	3.70E-9	3.60E-9
SN66	3.40E-9	3.40E-9	3.50E-9	3.50E-9	3.40E-9	3.70E-9	3.50E-9
SN67	3.50E-9	3.60E-9	3.60E-9	3.50E-9	3.60E-9	3.70E-9	3.60E-9
SN68	3.40E-9	3.50E-9	3.50E-9	3.50E-9	3.40E-9	3.70E-9	3.60E-9
SN69	3.50E-9	3.40E-9	3.50E-9	3.40E-9	3.40E-9	3.70E-9	3.50E-9
SN70	3.40E-9	3.40E-9	3.40E-9	3.50E-9	3.40E-9	3.60E-9	3.60E-9
SN71	3.40E-9	3.40E-9	3.40E-9	3.40E-9	3.40E-9	3.70E-9	3.60E-9
SN72	3.40E-9	3.50E-9	3.60E-9	3.50E-9	3.40E-9	3.70E-9	3.50E-9
SN73	3.60E-9	3.70E-9	3.70E-9	3.70E-9	3.50E-9	3.80E-9	3.50E-9
SN74	3.60E-9	3.70E-9	3.70E-9	3.70E-9	3.60E-9	3.70E-9	3.60E-9
Statistics							
Min	3.40E-9	3.40E-9	3.40E-9	3.40E-9	3.40E-9	3.60E-9	3.50E-9
Max	3.60E-9	3.70E-9	3.70E-9	3.70E-9	3.60E-9	3.80E-9	3.60E-9
Mean	3.48E-9	3.51E-9	3.55E-9	3.53E-9	3.46E-9	3.70E-9	3.56E-9
Sigma	9.19E-11	1.20E-10	1.08E-10	1.06E-10	8.43E-11	4.71E-11	5.16E-11

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	3.70E-9	3.60E-9
SN65	3.60E-9	3.60E-9
SN66	3.50E-9	3.50E-9
SN67	3.60E-9	3.70E-9
SN68	3.60E-9	3.60E-9
SN69	3.50E-9	3.50E-9
SN70	3.60E-9	3.50E-9
SN71	3.60E-9	3.50E-9
SN72	3.50E-9	3.60E-9
SN73	3.50E-9	3.70E-9
SN74	3.60E-9	3.70E-9
Statistics		
Min	3.50E-9	3.50E-9
Max	3.60E-9	3.70E-9
Mean	3.56E-9	3.59E-9
Sigma	5.16E-11	8.76E-11

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	3.60E-9	3.70E-9
SN65	3.60E-9	3.70E-9
SN66	3.50E-9	3.60E-9
SN67	3.70E-9	3.70E-9
SN68	3.60E-9	3.40E-9
SN69	3.50E-9	3.50E-9
SN70	3.50E-9	3.50E-9
SN71	3.50E-9	3.50E-9
SN72	3.60E-9	3.50E-9
SN73	3.70E-9	3.70E-9
SN74	3.70E-9	3.70E-9
Statistics		
Min	3.50E-9	3.40E-9
Max	3.70E-9	3.70E-9
Mean	3.59E-9	3.58E-9
Sigma	8.76E-11	1.14E-10

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

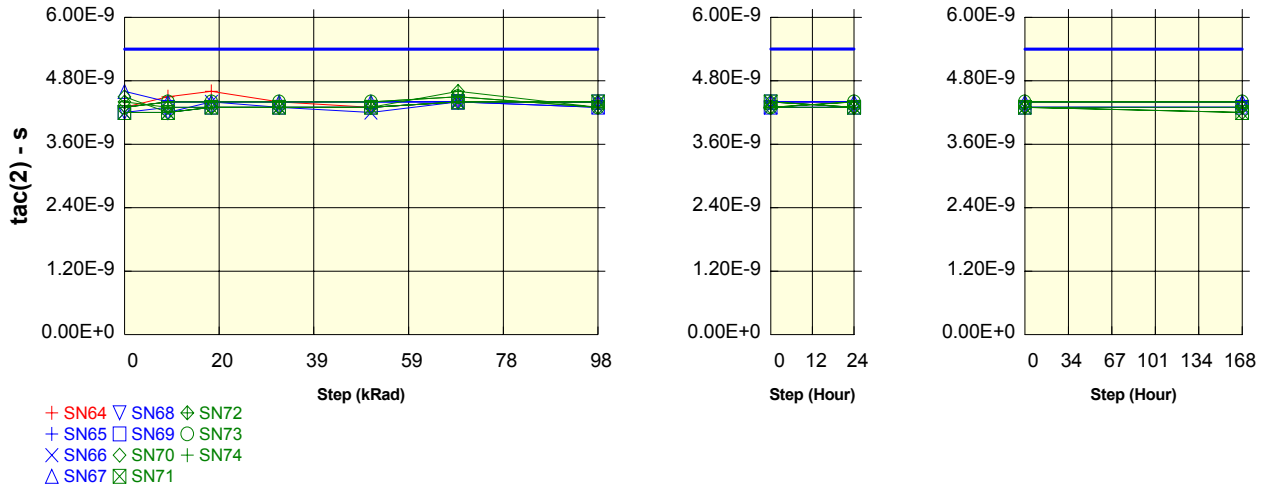
Parameter : Access Time from CLK : tac(2)

CAS Latency = 2

Unit : s

Spec Limit Max : 5.40E-9

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	4.30E-9	4.50E-9	4.60E-9	4.40E-9	4.30E-9	4.40E-9	4.40E-9
SN65	4.30E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9
SN66	4.20E-9	4.20E-9	4.40E-9	4.30E-9	4.20E-9	4.40E-9	4.30E-9
SN67	4.60E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9
SN68	4.20E-9	4.20E-9	4.30E-9	4.30E-9	4.30E-9	4.40E-9	4.40E-9
SN69	4.20E-9	4.30E-9	4.30E-9	4.30E-9	4.30E-9	4.40E-9	4.30E-9
SN70	4.50E-9	4.20E-9	4.30E-9	4.30E-9	4.30E-9	4.40E-9	4.40E-9
SN71	4.20E-9	4.20E-9	4.30E-9	4.30E-9	4.30E-9	4.40E-9	4.40E-9
SN72	4.40E-9	4.30E-9	4.30E-9	4.30E-9	4.30E-9	4.60E-9	4.30E-9
SN73	4.30E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9	4.50E-9	4.30E-9
SN74	4.30E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9	4.50E-9	4.30E-9
Statistics							
Min	4.20E-9	4.20E-9	4.30E-9	4.30E-9	4.20E-9	4.40E-9	4.30E-9
Max	4.60E-9	4.40E-9	4.40E-9	4.40E-9	4.40E-9	4.60E-9	4.40E-9
Mean	4.32E-9	4.30E-9	4.35E-9	4.34E-9	4.33E-9	4.44E-9	4.35E-9
Sigma	1.40E-10	9.43E-11	5.27E-11	5.16E-11	6.75E-11	6.99E-11	5.27E-11

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	4.40E-9	4.40E-9
SN65	4.40E-9	4.40E-9
SN66	4.30E-9	4.30E-9
SN67	4.40E-9	4.40E-9
SN68	4.40E-9	4.30E-9
SN69	4.30E-9	4.30E-9
SN70	4.40E-9	4.30E-9
SN71	4.40E-9	4.30E-9
SN72	4.30E-9	4.30E-9
SN73	4.30E-9	4.40E-9
SN74	4.30E-9	4.40E-9
Statistics		
Min	4.30E-9	4.30E-9
Max	4.40E-9	4.40E-9
Mean	4.35E-9	4.34E-9
Sigma	5.27E-11	5.16E-11

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	4.40E-9	4.40E-9
SN65	4.40E-9	4.40E-9
SN66	4.30E-9	4.30E-9
SN67	4.40E-9	4.40E-9
SN68	4.30E-9	4.30E-9
SN69	4.30E-9	4.30E-9
SN70	4.30E-9	4.20E-9
SN71	4.30E-9	4.20E-9
SN72	4.30E-9	4.30E-9
SN73	4.40E-9	4.40E-9
SN74	4.40E-9	4.40E-9
Statistics		
Min	4.30E-9	4.20E-9
Max	4.40E-9	4.40E-9
Mean	4.34E-9	4.32E-9
Sigma	5.16E-11	7.89E-11

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

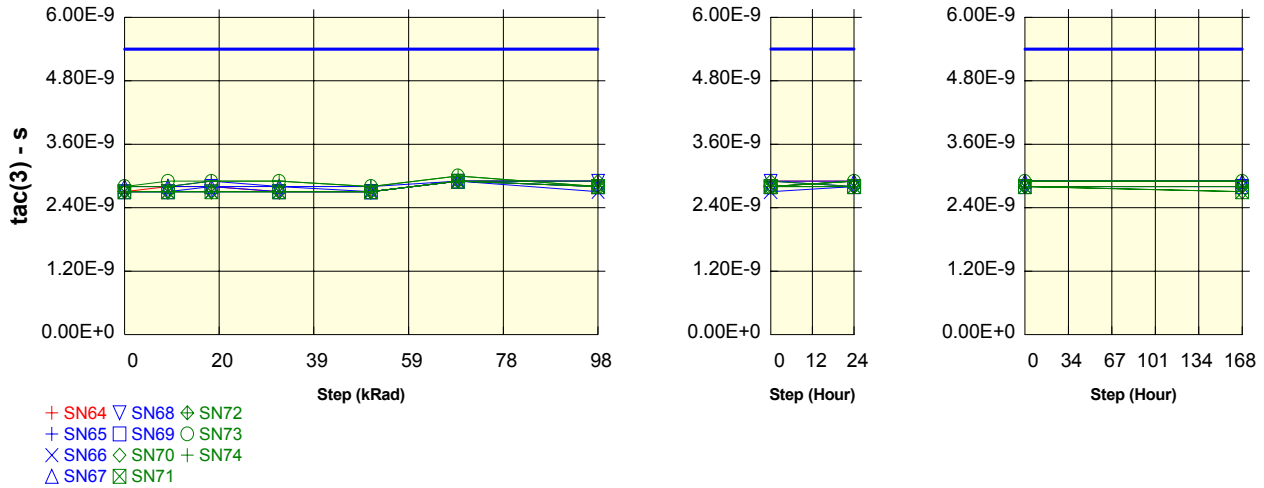
Parameter : Access Time from CLK : tac(3)

CAS Latency = 3

Unit : s

Spec Limit Max : 5.40E-9

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	2.70E-9	2.80E-9	2.80E-9	2.70E-9	2.70E-9	2.90E-9	2.90E-9
SN65	2.80E-9	2.80E-9	2.90E-9	2.80E-9	2.80E-9	2.90E-9	2.90E-9
SN66	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.90E-9	2.70E-9
SN67	2.80E-9	2.80E-9	2.80E-9	2.80E-9	2.70E-9	2.90E-9	2.80E-9
SN68	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.90E-9	2.90E-9
SN69	2.70E-9	2.70E-9	2.80E-9	2.70E-9	2.70E-9	2.90E-9	2.80E-9
SN70	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.90E-9	2.90E-9
SN71	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.90E-9	2.80E-9
SN72	2.80E-9	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.90E-9	2.80E-9
SN73	2.80E-9	2.90E-9	2.90E-9	2.90E-9	2.80E-9	3.00E-9	2.80E-9
SN74	2.80E-9	2.80E-9	2.90E-9	2.90E-9	2.80E-9	3.00E-9	2.80E-9
Statistics							
Min	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.70E-9	2.90E-9	2.70E-9
Max	2.80E-9	2.90E-9	2.90E-9	2.90E-9	2.80E-9	3.00E-9	2.90E-9
Mean	2.74E-9	2.75E-9	2.78E-9	2.76E-9	2.73E-9	2.92E-9	2.82E-9
Sigma	5.16E-11	7.07E-11	9.19E-11	8.43E-11	4.83E-11	4.22E-11	6.32E-11

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	2.90E-9	2.90E-9
SN65	2.90E-9	2.90E-9
SN66	2.70E-9	2.80E-9
SN67	2.80E-9	2.90E-9
SN68	2.90E-9	2.80E-9
SN69	2.80E-9	2.80E-9
SN70	2.90E-9	2.80E-9
SN71	2.80E-9	2.80E-9
SN72	2.80E-9	2.80E-9
SN73	2.80E-9	2.90E-9
SN74	2.80E-9	2.90E-9
Statistics		
Min	2.70E-9	2.80E-9
Max	2.90E-9	2.90E-9
Mean	2.82E-9	2.84E-9
Sigma	6.32E-11	5.16E-11

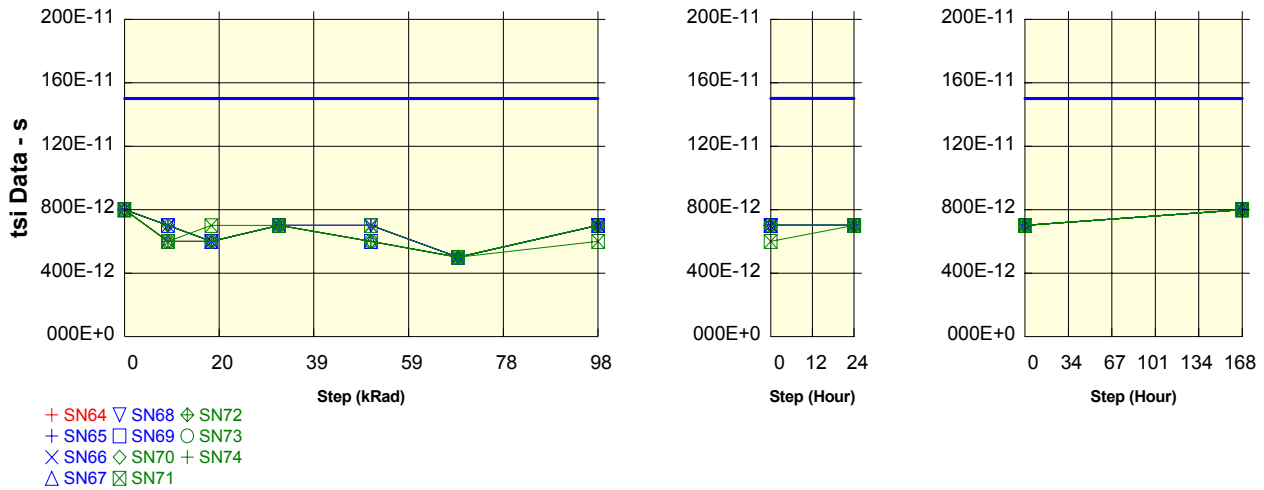
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	2.90E-9	2.90E-9
SN65	2.90E-9	2.90E-9
SN66	2.80E-9	2.80E-9
SN67	2.90E-9	2.90E-9
SN68	2.80E-9	2.80E-9
SN69	2.80E-9	2.80E-9
SN70	2.80E-9	2.70E-9
SN71	2.80E-9	2.70E-9
SN72	2.80E-9	2.80E-9
SN73	2.90E-9	2.90E-9
SN74	2.90E-9	2.90E-9
Statistics		
Min	2.80E-9	2.70E-9
Max	2.90E-9	2.90E-9
Mean	2.84E-9	2.82E-9
Sigma	5.16E-11	7.89E-11

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Input Setup Time : tsi Data

Unit : s
Spec Limit Max : 150E-11
Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	800E-12	600E-12	600E-12	700E-12	700E-12	500E-12	700E-12
SN65	800E-12	700E-12	600E-12	700E-12	700E-12	500E-12	700E-12
SN66	800E-12	700E-12	600E-12	700E-12	700E-12	500E-12	700E-12
SN67	800E-12	600E-12	600E-12	700E-12	600E-12	500E-12	700E-12
SN68	800E-12	700E-12	600E-12	700E-12	700E-12	500E-12	700E-12
SN69	800E-12	700E-12	600E-12	700E-12	600E-12	500E-12	700E-12
SN70	800E-12	700E-12	600E-12	700E-12	600E-12	500E-12	700E-12
SN71	800E-12	600E-12	700E-12	700E-12	700E-12	500E-12	600E-12
SN72	800E-12	600E-12	600E-12	700E-12	600E-12	500E-12	700E-12
SN73	800E-12	600E-12	600E-12	700E-12	600E-12	500E-12	700E-12
SN74	800E-12	700E-12	600E-12	700E-12	600E-12	500E-12	700E-12
Statistics							
Min	800E-12	600E-12	600E-12	700E-12	600E-12	500E-12	600E-12
Max	800E-12	700E-12	700E-12	700E-12	700E-12	500E-12	700E-12
Mean	800E-12	660E-12	610E-12	700E-12	640E-12	500E-12	690E-12
Sigma	131E-19	516E-13	316E-13	131E-19	516E-13	925E-20	316E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	700E-12	700E-12
SN65	700E-12	700E-12
SN66	700E-12	700E-12
SN67	700E-12	700E-12
SN68	700E-12	700E-12
SN69	700E-12	700E-12
SN70	700E-12	700E-12
SN71	600E-12	700E-12
SN72	700E-12	700E-12
SN73	700E-12	700E-12
SN74	700E-12	700E-12
Statistics		
Min	600E-12	700E-12
Max	700E-12	700E-12
Mean	690E-12	700E-12
Sigma	316E-13	131E-19

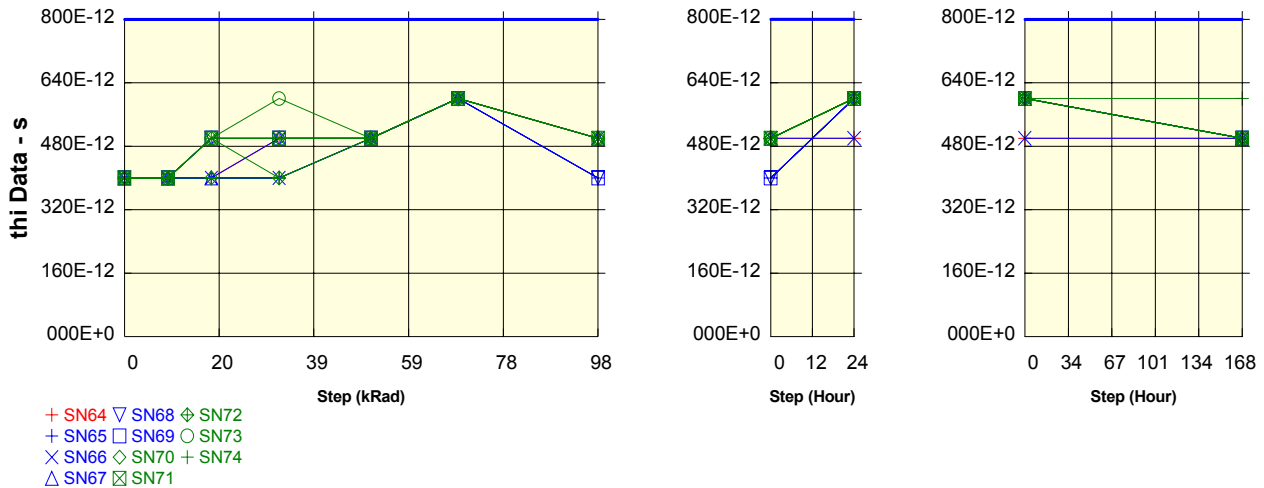
Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	700E-12	800E-12
SN65	700E-12	800E-12
SN66	700E-12	800E-12
SN67	700E-12	800E-12
SN68	700E-12	800E-12
SN69	700E-12	800E-12
SN70	700E-12	800E-12
SN71	700E-12	800E-12
SN72	700E-12	800E-12
SN73	700E-12	800E-12
SN74	700E-12	800E-12
Statistics		
Min	700E-12	800E-12
Max	700E-12	800E-12
Mean	700E-12	800E-12
Sigma	131E-19	131E-19

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.

Test conditions : Tid
Parameter : Input Hold Time : thi Data

Unit : s
Spec Limit Max : 800E-12
Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	400E-12	400E-12	400E-12	500E-12	500E-12	600E-12	500E-12
SN65	400E-12	400E-12	400E-12	400E-12	500E-12	600E-12	400E-12
SN66	400E-12	400E-12	400E-12	400E-12	500E-12	600E-12	500E-12
SN67	400E-12	400E-12	400E-12	500E-12	500E-12	600E-12	500E-12
SN68	400E-12	400E-12	500E-12	500E-12	500E-12	600E-12	400E-12
SN69	400E-12	400E-12	500E-12	500E-12	500E-12	600E-12	400E-12
SN70	400E-12	400E-12	500E-12	500E-12	500E-12	600E-12	500E-12
SN71	400E-12	400E-12	500E-12	500E-12	500E-12	600E-12	500E-12
SN72	400E-12	400E-12	400E-12	400E-12	500E-12	600E-12	500E-12
SN73	400E-12	400E-12	500E-12	600E-12	500E-12	600E-12	500E-12
SN74	400E-12	400E-12	500E-12	400E-12	500E-12	600E-12	500E-12
Statistics							
Min	400E-12	400E-12	400E-12	400E-12	500E-12	600E-12	400E-12
Max	400E-12	400E-12	500E-12	600E-12	500E-12	600E-12	500E-12
Mean	400E-12	400E-12	460E-12	470E-12	500E-12	600E-12	470E-12
Sigma	654E-20	654E-20	516E-13	675E-13	925E-20	925E-20	483E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	500E-12	500E-12
SN65	400E-12	600E-12
SN66	500E-12	500E-12
SN67	500E-12	600E-12
SN68	400E-12	600E-12
SN69	400E-12	600E-12
SN70	500E-12	600E-12
SN71	500E-12	600E-12
SN72	500E-12	600E-12
SN73	500E-12	600E-12
SN74	500E-12	600E-12
Statistics		
Min	400E-12	500E-12
Max	500E-12	600E-12
Mean	470E-12	590E-12
Sigma	483E-13	316E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	500E-12	500E-12
SN65	600E-12	500E-12
SN66	500E-12	500E-12
SN67	600E-12	500E-12
SN68	600E-12	500E-12
SN69	600E-12	500E-12
SN70	600E-12	500E-12
SN71	600E-12	500E-12
SN72	600E-12	500E-12
SN73	600E-12	500E-12
SN74	600E-12	600E-12
Statistics		
Min	500E-12	500E-12
Max	600E-12	600E-12
Mean	590E-12	510E-12
Sigma	316E-13	316E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

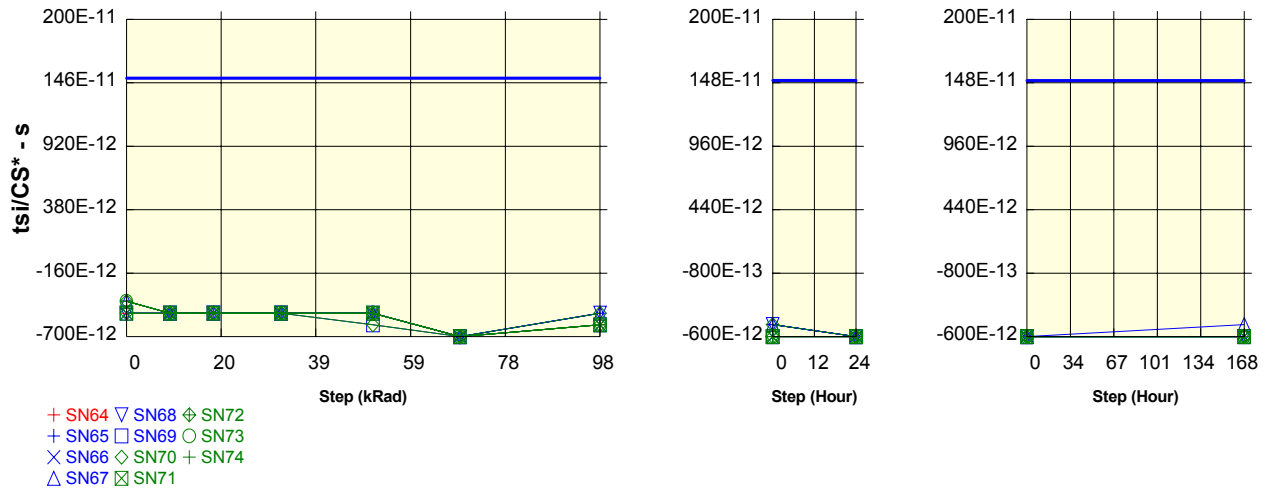
Parameter : Input Setup Time : tsi /CS*

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 150E-11

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-500E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-600E-12
SN65	-400E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-500E-12
SN66	-500E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-600E-12
SN67	-400E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-500E-12
SN68	-500E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-500E-12
SN69	-500E-12	-500E-12	-500E-12	-500E-12	-600E-12	-700E-12	-600E-12
SN70	-500E-12	-500E-12	-500E-12	-500E-12	-600E-12	-700E-12	-500E-12
SN71	-500E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-600E-12
SN72	-400E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-600E-12
SN73	-400E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-600E-12
SN74	-400E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-600E-12
Statistics							
Min	-500E-12	-500E-12	-500E-12	-500E-12	-600E-12	-700E-12	-600E-12
Max	-400E-12	-500E-12	-500E-12	-500E-12	-500E-12	-700E-12	-500E-12
Mean	-450E-12	-500E-12	-500E-12	-500E-12	-520E-12	-700E-12	-560E-12
Sigma	527E-13	925E-20	925E-20	925E-20	422E-13	131E-19	516E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-600E-12	-600E-12
SN65	-500E-12	-600E-12
SN66	-600E-12	-600E-12
SN67	-500E-12	-600E-12
SN68	-500E-12	-600E-12
SN69	-600E-12	-600E-12
SN70	-500E-12	-600E-12
SN71	-600E-12	-600E-12
SN72	-600E-12	-600E-12
SN73	-600E-12	-600E-12
SN74	-600E-12	-600E-12
Statistics		
Min	-600E-12	-600E-12
Max	-500E-12	-600E-12
Mean	-560E-12	-600E-12
Sigma	516E-13	925E-20

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-600E-12	-600E-12
SN65	-600E-12	-600E-12
SN66	-600E-12	-600E-12
SN67	-600E-12	-500E-12
SN68	-600E-12	-600E-12
SN69	-600E-12	-600E-12
SN70	-600E-12	-600E-12
SN71	-600E-12	-600E-12
SN72	-600E-12	-600E-12
SN73	-600E-12	-600E-12
SN74	-600E-12	-600E-12
Statistics		
Min	-600E-12	-600E-12
Max	-600E-12	-500E-12
Mean	-600E-12	-590E-12
Sigma	925E-20	316E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

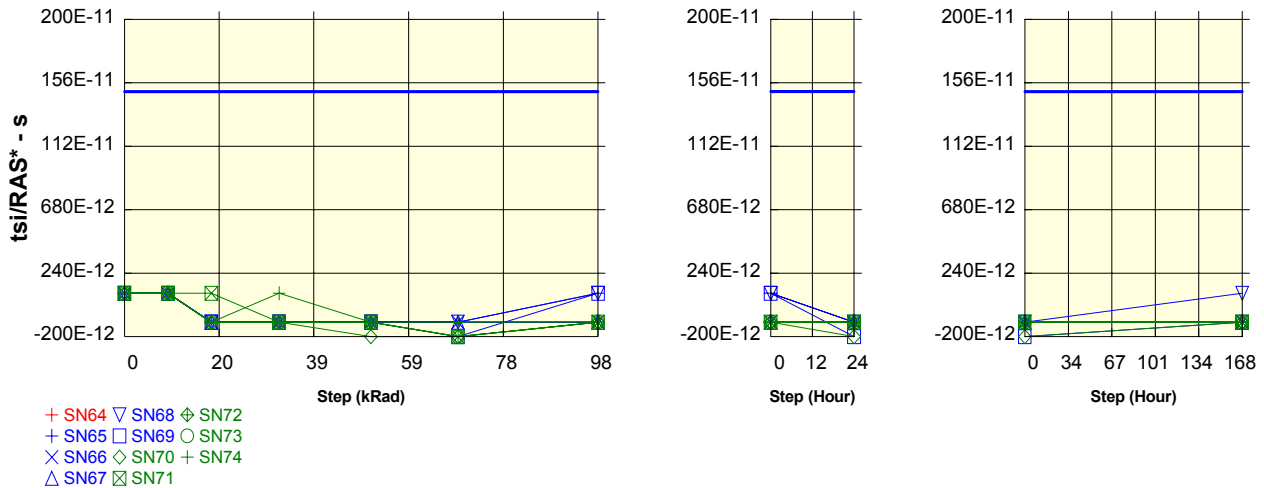
Parameter : Input Setup Time : tsi /RAS*

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 150E-11

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12
SN65	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-100E-12	100E-12
SN66	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12
SN67	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12
SN68	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-100E-12	100E-12
SN69	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-200E-12	100E-12
SN70	100E-12	100E-12	-100E-12	-100E-12	-200E-12	-200E-12	-100E-12
SN71	100E-12	100E-12	100E-12	-100E-12	-100E-12	-200E-12	-100E-12
SN72	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-200E-12	-100E-12
SN73	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-200E-12	-100E-12
SN74	100E-12	100E-12	-100E-12	100E-12	-100E-12	-100E-12	-100E-12
Statistics							
Min	100E-12	100E-12	-100E-12	-100E-12	-200E-12	-200E-12	-100E-12
Max	100E-12	100E-12	100E-12	100E-12	-100E-12	-100E-12	100E-12
Mean	100E-12	100E-12	-800E-13	-800E-13	-110E-12	-150E-12	-400E-13
Sigma	164E-20	164E-20	632E-13	632E-13	316E-13	527E-13	966E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-100E-12	-100E-12
SN65	100E-12	-100E-12
SN66	-100E-12	-100E-12
SN67	-100E-12	-100E-12
SN68	100E-12	-100E-12
SN69	100E-12	-200E-12
SN70	-100E-12	-200E-12
SN71	-100E-12	-100E-12
SN72	-100E-12	-100E-12
SN73	-100E-12	-100E-12
SN74	-100E-12	-100E-12
Statistics		
Min	-100E-12	-200E-12
Max	100E-12	-100E-12
Mean	-400E-13	-120E-12
Sigma	966E-13	422E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-100E-12	-100E-12
SN65	-100E-12	-100E-12
SN66	-100E-12	-100E-12
SN67	-100E-12	-100E-12
SN68	-100E-12	100E-12
SN69	-200E-12	-100E-12
SN70	-200E-12	-100E-12
SN71	-100E-12	-100E-12
SN72	-100E-12	-100E-12
SN73	-100E-12	-100E-12
SN74	-100E-12	-100E-12
Statistics		
Min	-200E-12	-100E-12
Max	-100E-12	100E-12
Mean	-120E-12	-800E-13
Sigma	422E-13	632E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

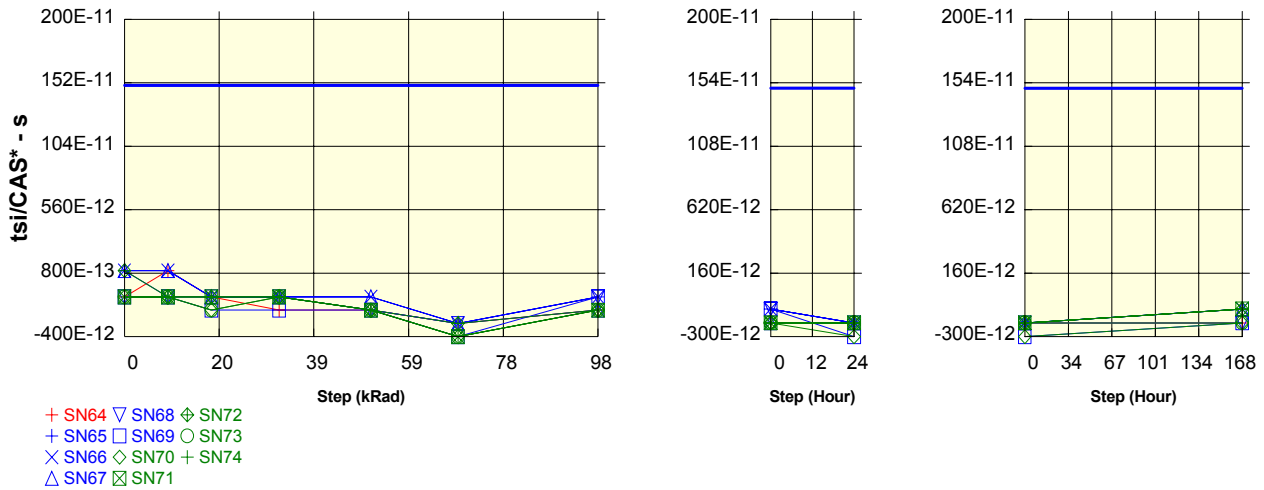
Parameter : Input Setup Time : tsi /CAS*

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 150E-11

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-100E-12	100E-12	-100E-12	-200E-12	-200E-12	-300E-12	-200E-12
SN65	100E-12	-100E-12	-100E-12	-100E-12	-200E-12	-300E-12	-100E-12
SN66	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-300E-12	-100E-12
SN67	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-300E-12	-200E-12
SN68	-100E-12	-100E-12	-100E-12	-100E-12	-200E-12	-300E-12	-100E-12
SN69	-100E-12	-100E-12	-200E-12	-200E-12	-200E-12	-400E-12	-100E-12
SN70	-100E-12	-100E-12	-200E-12	-100E-12	-200E-12	-400E-12	-200E-12
SN71	-100E-12	-100E-12	-100E-12	-100E-12	-200E-12	-400E-12	-200E-12
SN72	100E-12	-100E-12	-100E-12	-100E-12	-200E-12	-300E-12	-200E-12
SN73	-100E-12	-100E-12	-200E-12	-100E-12	-200E-12	-400E-12	-200E-12
SN74	-100E-12	-100E-12	-100E-12	-100E-12	-200E-12	-400E-12	-200E-12
Statistics							
Min	-100E-12	-100E-12	-200E-12	-200E-12	-200E-12	-400E-12	-200E-12
Max	100E-12	100E-12	-100E-12	-100E-12	-100E-12	-300E-12	-100E-12
Mean	-200E-13	-600E-13	-130E-12	-110E-12	-180E-12	-350E-12	-160E-12
Sigma	103E-12	843E-13	483E-13	316E-13	422E-13	527E-13	516E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-200E-12	-200E-12
SN65	-100E-12	-200E-12
SN66	-100E-12	-200E-12
SN67	-200E-12	-200E-12
SN68	-100E-12	-200E-12
SN69	-100E-12	-300E-12
SN70	-200E-12	-300E-12
SN71	-200E-12	-200E-12
SN72	-200E-12	-200E-12
SN73	-200E-12	-200E-12
SN74	-200E-12	-200E-12
Statistics		
Min	-200E-12	-300E-12
Max	-100E-12	-200E-12
Mean	-160E-12	-220E-12
Sigma	516E-13	422E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-200E-12	-200E-12
SN65	-200E-12	-100E-12
SN66	-200E-12	-100E-12
SN67	-200E-12	-100E-12
SN68	-200E-12	-200E-12
SN69	-300E-12	-200E-12
SN70	-300E-12	-200E-12
SN71	-200E-12	-100E-12
SN72	-200E-12	-100E-12
SN73	-200E-12	-200E-12
SN74	-200E-12	-100E-12
Statistics		
Min	-300E-12	-200E-12
Max	-200E-12	-100E-12
Mean	-220E-12	-140E-12
Sigma	422E-13	516E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

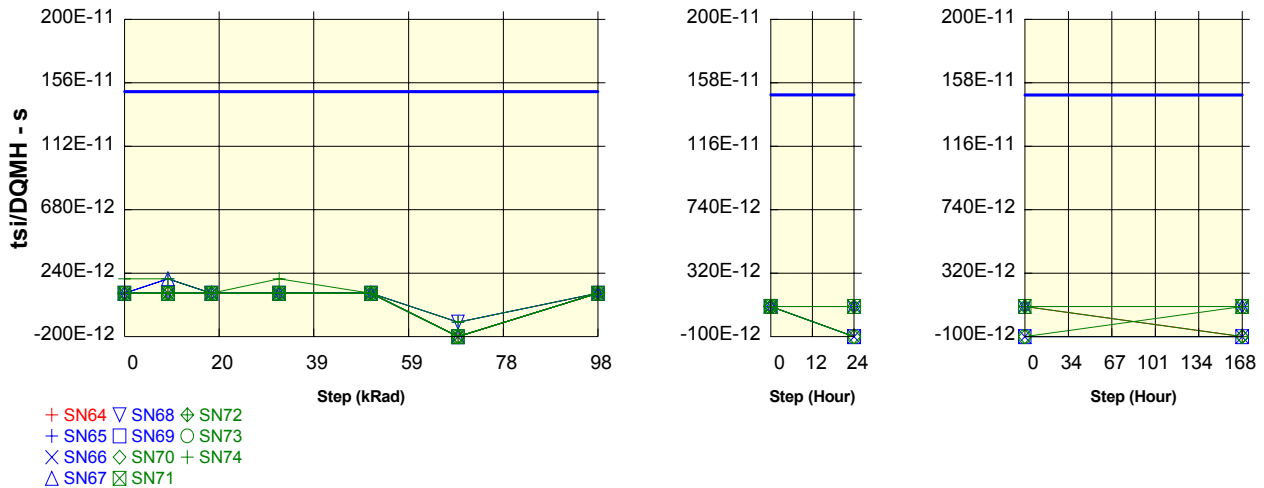
Parameter : Input Setup Time : tsi /DQMH

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 150E-11

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN65	100E-12	200E-12	100E-12	100E-12	100E-12	-100E-12	100E-12
SN66	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN67	100E-12	200E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN68	100E-12	100E-12	100E-12	100E-12	100E-12	-100E-12	100E-12
SN69	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN70	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN71	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN72	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN73	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
SN74	200E-12	200E-12	100E-12	200E-12	100E-12	-100E-12	100E-12
Statistics							
Min	100E-12	100E-12	100E-12	100E-12	100E-12	-200E-12	100E-12
Max	200E-12	200E-12	100E-12	200E-12	100E-12	-100E-12	100E-12
Mean	110E-12	130E-12	100E-12	110E-12	100E-12	-170E-12	100E-12
Sigma	316E-13	483E-13	164E-20	316E-13	164E-20	483E-13	164E-20

Test TST002 : Annealing 24H

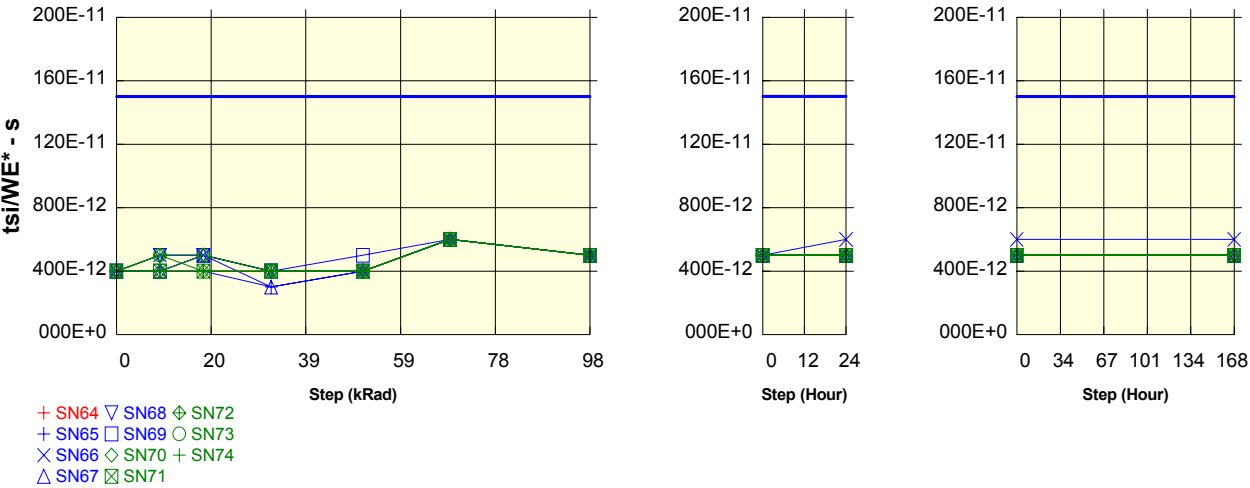
	0 Hour	24 Hour
SN64	100E-12	100E-12
SN65	100E-12	100E-12
SN66	100E-12	-100E-12
SN67	100E-12	100E-12
SN68	100E-12	100E-12
SN69	100E-12	-100E-12
SN70	100E-12	-100E-12
SN71	100E-12	100E-12
SN72	100E-12	100E-12
SN73	100E-12	-100E-12
SN74	100E-12	100E-12
Statistics		
Min	100E-12	-100E-12
Max	100E-12	100E-12
Mean	100E-12	200E-13
Sigma	164E-20	103E-12

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	100E-12	-100E-12
SN65	100E-12	100E-12
SN66	-100E-12	-100E-12
SN67	100E-12	100E-12
SN68	100E-12	100E-12
SN69	-100E-12	-100E-12
SN70	-100E-12	-100E-12
SN71	100E-12	100E-12
SN72	100E-12	-100E-12
SN73	-100E-12	100E-12
SN74	100E-12	100E-12
Statistics		
Min	-100E-12	-100E-12
Max	100E-12	100E-12
Mean	200E-13	200E-13
Sigma	103E-12	103E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Input Setup Time : tsi /WE*
VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA
 Unit : s
 Spec Limit Max : 150E-11
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	400E-12	400E-12	400E-12	400E-12	400E-12	600E-12	500E-12
SN65	400E-12	400E-12	400E-12	300E-12	400E-12	600E-12	500E-12
SN66	400E-12	500E-12	500E-12	400E-12	400E-12	600E-12	500E-12
SN67	400E-12	400E-12	500E-12	300E-12	400E-12	600E-12	500E-12
SN68	400E-12	500E-12	500E-12	400E-12	400E-12	600E-12	500E-12
SN69	400E-12	400E-12	500E-12	400E-12	500E-12	600E-12	500E-12
SN70	400E-12	400E-12	500E-12	400E-12	400E-12	600E-12	500E-12
SN71	400E-12	400E-12	400E-12	400E-12	400E-12	600E-12	500E-12
SN72	400E-12	500E-12	400E-12	400E-12	400E-12	600E-12	500E-12
SN73	400E-12	500E-12	500E-12	400E-12	400E-12	600E-12	500E-12
SN74	400E-12	400E-12	400E-12	400E-12	400E-12	600E-12	500E-12
Statistics							
Min	400E-12	400E-12	400E-12	300E-12	400E-12	600E-12	500E-12
Max	400E-12	500E-12	500E-12	400E-12	500E-12	600E-12	500E-12
Mean	400E-12	440E-12	460E-12	380E-12	410E-12	600E-12	500E-12
Sigma	654E-20	516E-13	516E-13	422E-13	316E-13	925E-20	925E-20

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	500E-12	500E-12
SN65	500E-12	500E-12
SN66	500E-12	600E-12
SN67	500E-12	500E-12
SN68	500E-12	500E-12
SN69	500E-12	500E-12
SN70	500E-12	500E-12
SN71	500E-12	500E-12
SN72	500E-12	500E-12
SN73	500E-12	500E-12
SN74	500E-12	500E-12
Statistics		
Min	500E-12	500E-12
Max	500E-12	600E-12
Mean	500E-12	510E-12
Sigma	925E-20	316E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	500E-12	500E-12
SN65	500E-12	500E-12
SN66	600E-12	600E-12
SN67	500E-12	500E-12
SN68	500E-12	500E-12
SN69	500E-12	500E-12
SN70	500E-12	500E-12
SN71	500E-12	500E-12
SN72	500E-12	500E-12
SN73	500E-12	500E-12
SN74	500E-12	500E-12
Statistics		
Min	500E-12	500E-12
Max	600E-12	600E-12
Mean	510E-12	510E-12
Sigma	316E-13	316E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

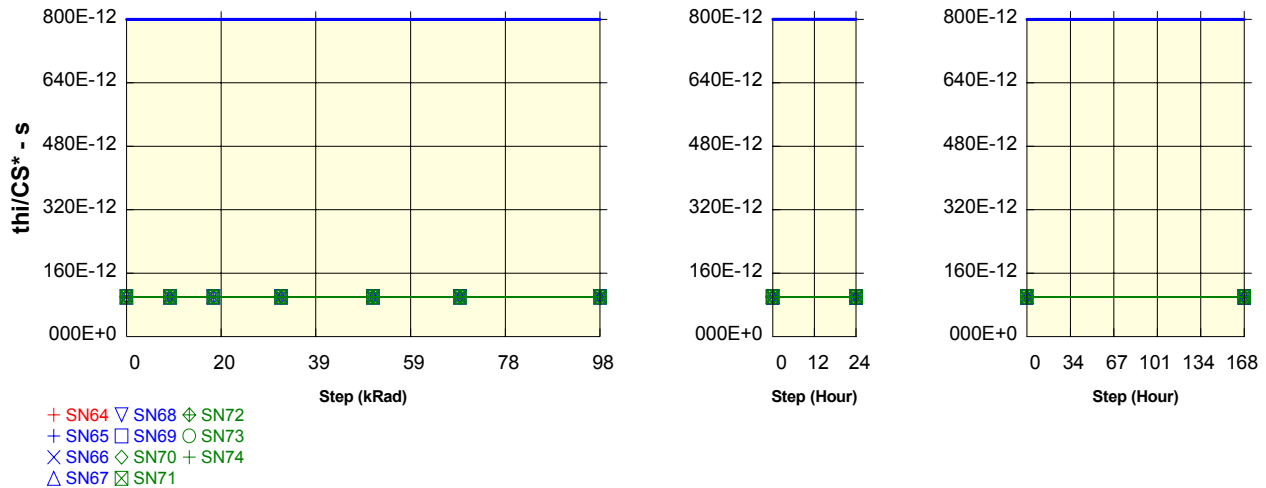
Parameter : Input Hold Time : t_{hi}/CS^*

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 800E-12

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN65	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN66	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN67	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN68	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN69	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN70	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN71	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN72	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN73	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
SN74	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
Statistics							
Min	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
Max	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
Mean	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12	100E-12
Sigma	164E-20	164E-20	164E-20	164E-20	164E-20	164E-20	164E-20

Test TST002 : Annealing 24H

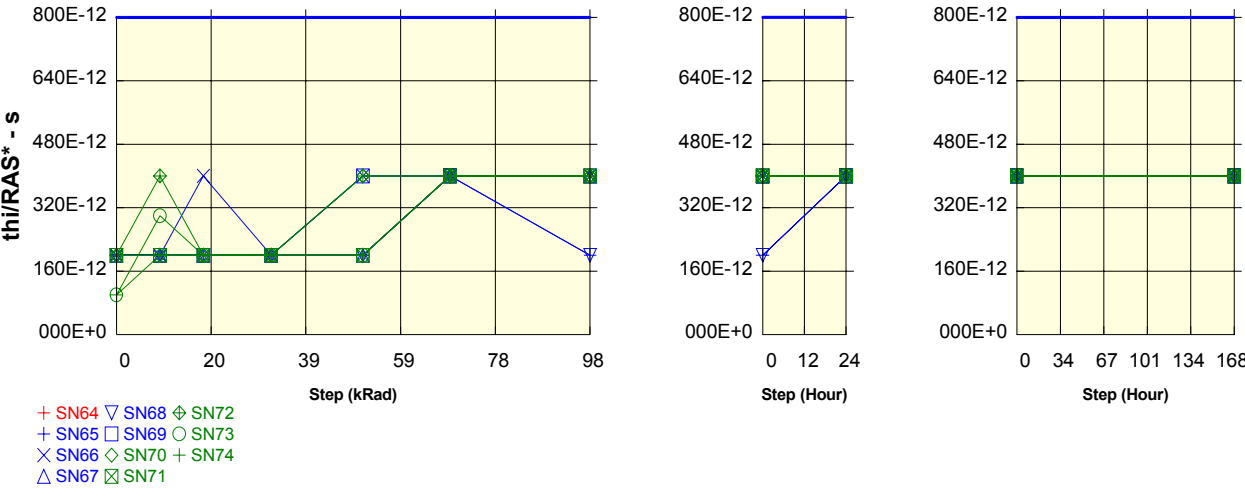
	0 Hour	24 Hour
SN64	100E-12	100E-12
SN65	100E-12	100E-12
SN66	100E-12	100E-12
SN67	100E-12	100E-12
SN68	100E-12	100E-12
SN69	100E-12	100E-12
SN70	100E-12	100E-12
SN71	100E-12	100E-12
SN72	100E-12	100E-12
SN73	100E-12	100E-12
SN74	100E-12	100E-12
Statistics		
Min	100E-12	100E-12
Max	100E-12	100E-12
Mean	100E-12	100E-12
Sigma	164E-20	164E-20

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	100E-12	100E-12
SN65	100E-12	100E-12
SN66	100E-12	100E-12
SN67	100E-12	100E-12
SN68	100E-12	100E-12
SN69	100E-12	100E-12
SN70	100E-12	100E-12
SN71	100E-12	100E-12
SN72	100E-12	100E-12
SN73	100E-12	100E-12
SN74	100E-12	100E-12
Statistics		
Min	100E-12	100E-12
Max	100E-12	100E-12
Mean	100E-12	100E-12
Sigma	164E-20	164E-20

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid
Parameter : Input Hold Time : thi /RAS*
VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA
 Unit : s
 Spec Limit Max : 800E-12
 Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	200E-12	200E-12	200E-12	200E-12	200E-12	400E-12	400E-12
SN65	200E-12	200E-12	200E-12	200E-12	200E-12	400E-12	200E-12
SN66	200E-12	200E-12	400E-12	200E-12	400E-12	400E-12	400E-12
SN67	200E-12	200E-12	200E-12	200E-12	200E-12	400E-12	400E-12
SN68	200E-12	200E-12	200E-12	200E-12	200E-12	400E-12	200E-12
SN69	200E-12	200E-12	200E-12	200E-12	400E-12	400E-12	400E-12
SN70	200E-12	200E-12	200E-12	200E-12	400E-12	400E-12	400E-12
SN71	200E-12	200E-12	200E-12	200E-12	200E-12	400E-12	400E-12
SN72	200E-12	400E-12	200E-12	200E-12	400E-12	400E-12	400E-12
SN73	100E-12	300E-12	200E-12	200E-12	200E-12	400E-12	400E-12
SN74	100E-12	200E-12	200E-12	200E-12	200E-12	400E-12	400E-12
Statistics							
Min	100E-12	200E-12	200E-12	200E-12	200E-12	400E-12	200E-12
Max	200E-12	400E-12	400E-12	200E-12	400E-12	400E-12	400E-12
Mean	180E-12	230E-12	220E-12	200E-12	280E-12	400E-12	360E-12
Sigma	422E-13	675E-13	632E-13	327E-20	103E-12	654E-20	843E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	400E-12	400E-12
SN65	200E-12	400E-12
SN66	400E-12	400E-12
SN67	400E-12	400E-12
SN68	200E-12	400E-12
SN69	400E-12	400E-12
SN70	400E-12	400E-12
SN71	400E-12	400E-12
SN72	400E-12	400E-12
SN73	400E-12	400E-12
SN74	400E-12	400E-12
Statistics		
Min	200E-12	400E-12
Max	400E-12	400E-12
Mean	360E-12	400E-12
Sigma	843E-13	654E-20

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	400E-12	400E-12
SN65	400E-12	400E-12
SN66	400E-12	400E-12
SN67	400E-12	400E-12
SN68	400E-12	400E-12
SN69	400E-12	400E-12
SN70	400E-12	400E-12
SN71	400E-12	400E-12
SN72	400E-12	400E-12
SN73	400E-12	400E-12
SN74	400E-12	400E-12
Statistics		
Min	400E-12	400E-12
Max	400E-12	400E-12
Mean	400E-12	400E-12
Sigma	654E-20	654E-20

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

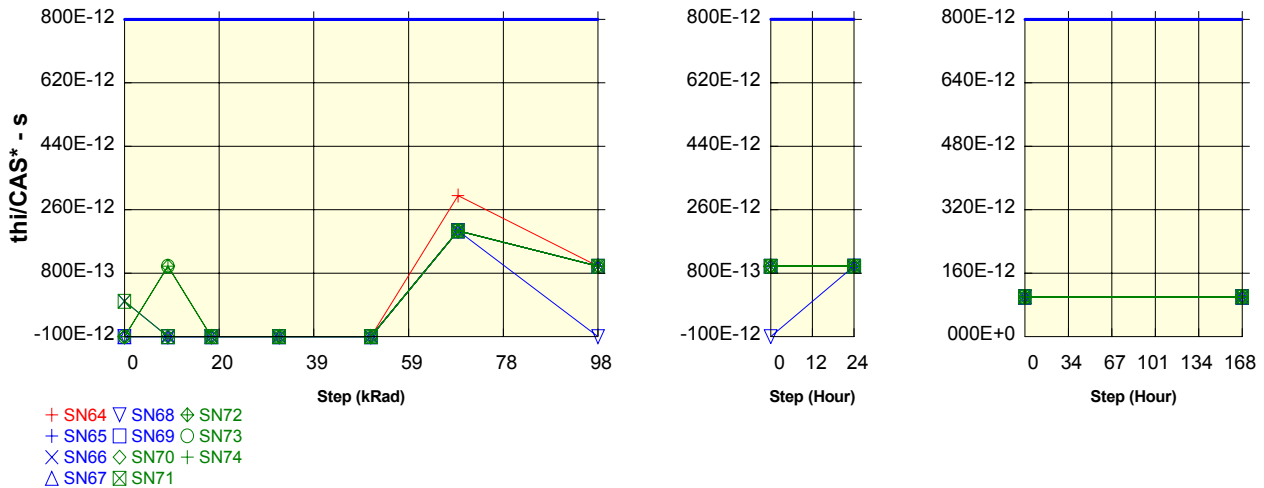
Parameter : Input Hold Time : thi /CAS*

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 800E-12

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	300E-12	100E-12
SN65	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN66	000E+0	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN67	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN68	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	-100E-12
SN69	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN70	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN71	000E+0	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN72	-100E-12	100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN73	-100E-12	100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
SN74	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
Statistics							
Min	-100E-12	-100E-12	-100E-12	-100E-12	-100E-12	200E-12	-100E-12
Max	000E+0	100E-12	-100E-12	-100E-12	-100E-12	200E-12	100E-12
Mean	-800E-13	-600E-13	-100E-12	-100E-12	-100E-12	200E-12	800E-13
Sigma	422E-13	843E-13	164E-20	164E-20	164E-20	327E-20	632E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	100E-12	100E-12
SN65	100E-12	100E-12
SN66	100E-12	100E-12
SN67	100E-12	100E-12
SN68	-100E-12	100E-12
SN69	100E-12	100E-12
SN70	100E-12	100E-12
SN71	100E-12	100E-12
SN72	100E-12	100E-12
SN73	100E-12	100E-12
SN74	100E-12	100E-12
Statistics		
Min	-100E-12	100E-12
Max	100E-12	100E-12
Mean	800E-13	100E-12
Sigma	632E-13	164E-20

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	100E-12	100E-12
SN65	100E-12	100E-12
SN66	100E-12	100E-12
SN67	100E-12	100E-12
SN68	100E-12	100E-12
SN69	100E-12	100E-12
SN70	100E-12	100E-12
SN71	100E-12	100E-12
SN72	100E-12	100E-12
SN73	100E-12	100E-12
SN74	100E-12	100E-12
Statistics		
Min	100E-12	100E-12
Max	100E-12	100E-12
Mean	100E-12	100E-12
Sigma	164E-20	164E-20

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

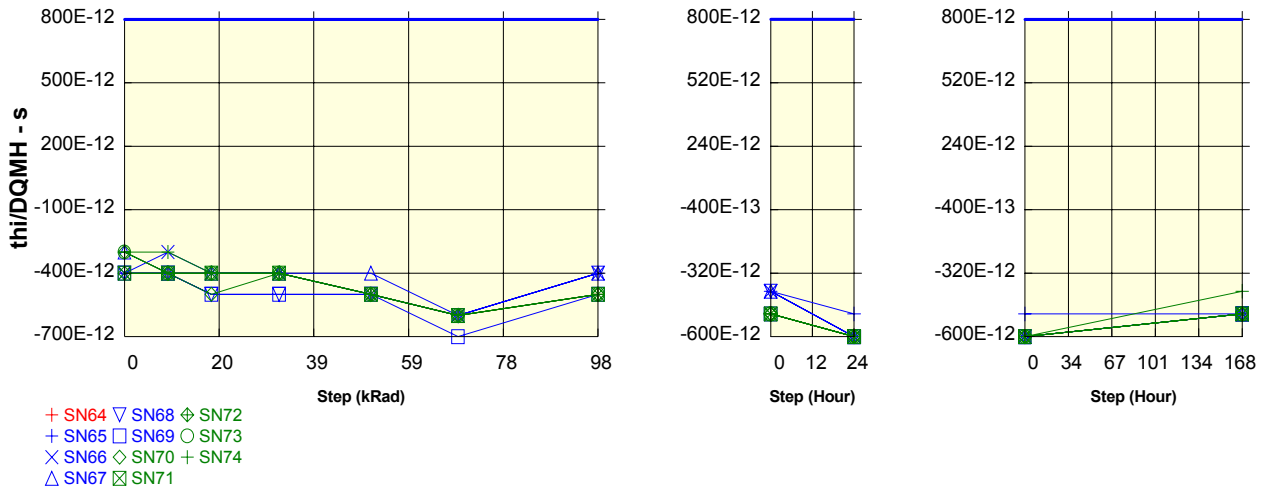
Parameter : Input Hold Time : thi /DQMH

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 800E-12

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-400E-12	-400E-12	-400E-12	-400E-12	-500E-12	-600E-12	-500E-12
SN65	-400E-12	-400E-12	-400E-12	-400E-12	-500E-12	-600E-12	-400E-12
SN66	-400E-12	-300E-12	-400E-12	-400E-12	-500E-12	-600E-12	-400E-12
SN67	-300E-12	-400E-12	-400E-12	-400E-12	-400E-12	-600E-12	-400E-12
SN68	-400E-12	-400E-12	-500E-12	-500E-12	-500E-12	-600E-12	-400E-12
SN69	-400E-12	-400E-12	-500E-12	-500E-12	-500E-12	-700E-12	-500E-12
SN70	-400E-12	-400E-12	-500E-12	-400E-12	-500E-12	-600E-12	-500E-12
SN71	-400E-12	-400E-12	-400E-12	-400E-12	-500E-12	-600E-12	-500E-12
SN72	-300E-12	-400E-12	-400E-12	-400E-12	-500E-12	-600E-12	-500E-12
SN73	-300E-12	-400E-12	-400E-12	-400E-12	-500E-12	-600E-12	-500E-12
SN74	-300E-12	-300E-12	-400E-12	-400E-12	-500E-12	-600E-12	-500E-12
Statistics							
Min	-400E-12	-400E-12	-500E-12	-500E-12	-500E-12	-700E-12	-500E-12
Max	-300E-12	-300E-12	-400E-12	-400E-12	-400E-12	-600E-12	-400E-12
Mean	-360E-12	-380E-12	-430E-12	-420E-12	-490E-12	-610E-12	-460E-12
Sigma	516E-13	422E-13	483E-13	422E-13	316E-13	316E-13	516E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-500E-12	-600E-12
SN65	-400E-12	-500E-12
SN66	-400E-12	-600E-12
SN67	-400E-12	-600E-12
SN68	-400E-12	-600E-12
SN69	-500E-12	-600E-12
SN70	-500E-12	-600E-12
SN71	-500E-12	-600E-12
SN72	-500E-12	-600E-12
SN73	-500E-12	-600E-12
SN74	-500E-12	-600E-12
Statistics		
Min	-500E-12	-600E-12
Max	-400E-12	-500E-12
Mean	-460E-12	-590E-12
Sigma	516E-13	316E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-600E-12	-500E-12
SN65	-500E-12	-500E-12
SN66	-600E-12	-500E-12
SN67	-600E-12	-500E-12
SN68	-600E-12	-500E-12
SN69	-600E-12	-500E-12
SN70	-600E-12	-500E-12
SN71	-600E-12	-500E-12
SN72	-600E-12	-500E-12
SN73	-600E-12	-500E-12
SN74	-600E-12	-400E-12
Statistics		
Min	-600E-12	-500E-12
Max	-500E-12	-400E-12
Mean	-590E-12	-490E-12
Sigma	316E-13	316E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

Test conditions : Tid

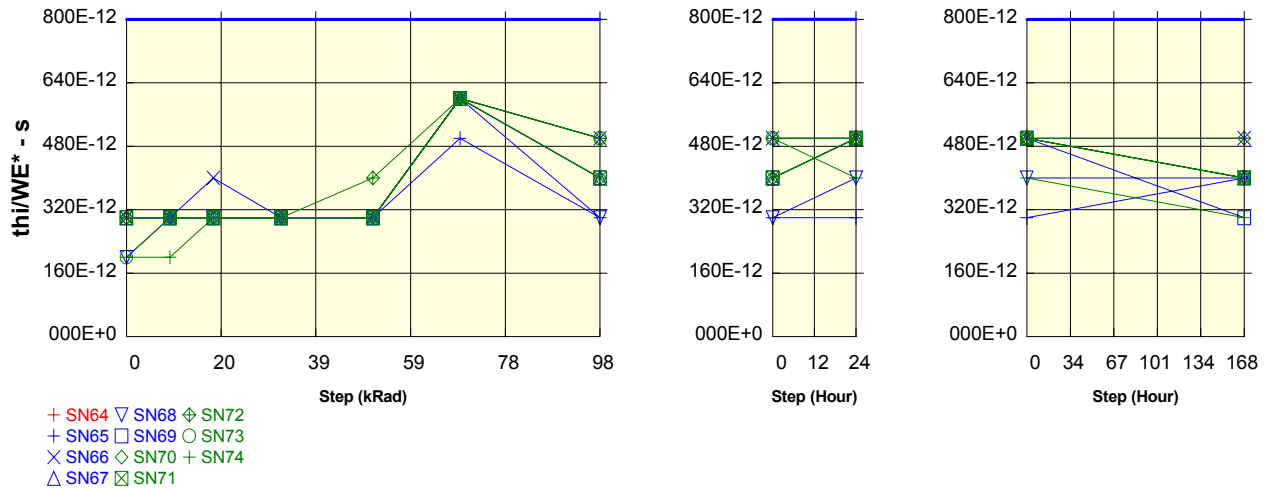
Parameter : Input Hold Time : thi /WE*

VIL = 0.4V et VIH = 2.4V. IOH = - 2mA. IOL = 2mA

Unit : s

Spec Limit Max : 800E-12

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	300E-12	300E-12	300E-12	300E-12	300E-12	600E-12	500E-12
SN65	300E-12	300E-12	300E-12	300E-12	300E-12	500E-12	300E-12
SN66	300E-12	300E-12	400E-12	300E-12	300E-12	600E-12	500E-12
SN67	300E-12	300E-12	300E-12	300E-12	300E-12	600E-12	400E-12
SN68	200E-12	300E-12	300E-12	300E-12	300E-12	600E-12	300E-12
SN69	300E-12	300E-12	300E-12	300E-12	300E-12	600E-12	400E-12
SN70	300E-12	300E-12	300E-12	300E-12	300E-12	600E-12	500E-12
SN71	300E-12	300E-12	300E-12	300E-12	300E-12	600E-12	400E-12
SN72	300E-12	300E-12	300E-12	300E-12	400E-12	600E-12	400E-12
SN73	200E-12	300E-12	300E-12	300E-12	300E-12	600E-12	500E-12
SN74	200E-12	200E-12	300E-12	300E-12	300E-12	600E-12	500E-12
Statistics							
Min	200E-12	200E-12	300E-12	300E-12	300E-12	500E-12	300E-12
Max	300E-12	300E-12	400E-12	300E-12	400E-12	600E-12	500E-12
Mean	270E-12	290E-12	310E-12	300E-12	310E-12	590E-12	420E-12
Sigma	483E-13	316E-13	316E-13	463E-20	316E-13	316E-13	789E-13

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	500E-12	500E-12
SN65	300E-12	300E-12
SN66	500E-12	500E-12
SN67	400E-12	500E-12
SN68	300E-12	400E-12
SN69	400E-12	500E-12
SN70	500E-12	500E-12
SN71	400E-12	500E-12
SN72	400E-12	500E-12
SN73	500E-12	500E-12
SN74	500E-12	400E-12
Statistics		
Min	300E-12	300E-12
Max	500E-12	500E-12
Mean	420E-12	460E-12
Sigma	789E-13	699E-13

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	500E-12	500E-12
SN65	300E-12	400E-12
SN66	500E-12	500E-12
SN67	500E-12	400E-12
SN68	400E-12	400E-12
SN69	500E-12	300E-12
SN70	500E-12	400E-12
SN71	500E-12	400E-12
SN72	500E-12	500E-12
SN73	500E-12	400E-12
SN74	400E-12	300E-12
Statistics		
Min	300E-12	300E-12
Max	500E-12	500E-12
Mean	460E-12	400E-12
Sigma	699E-13	667E-13

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240
				Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

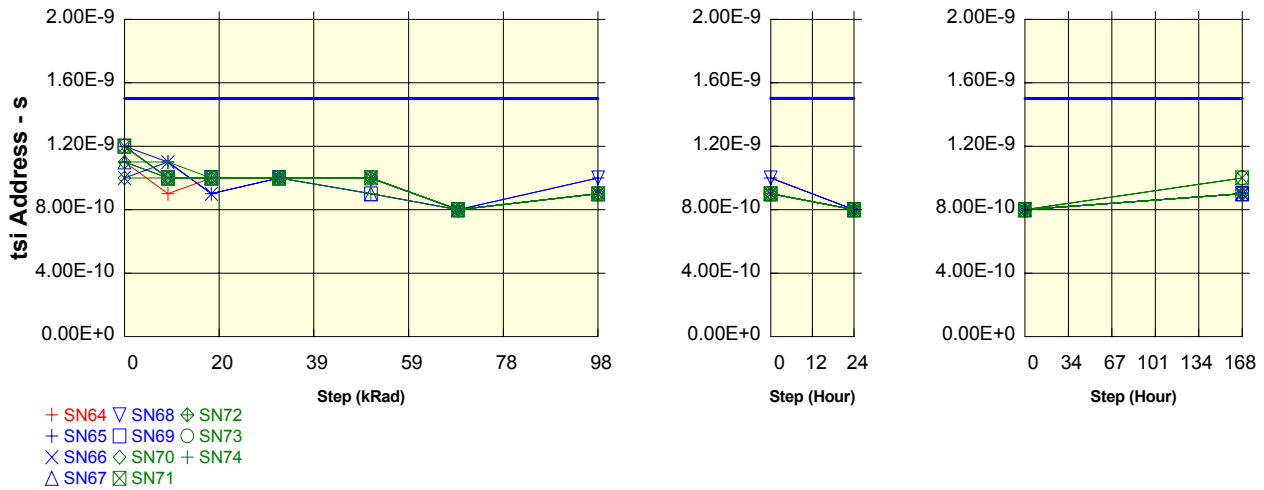
Test conditions : Tid

Parameter : Input Setup Time : tsi Address

Unit : s

Spec Limit Max : 1.50E-9

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	1.10E-9	9.00E-10	1.00E-9	1.00E-9	1.00E-9	8.00E-10	9.00E-10
SN65	1.20E-9	1.10E-9	9.00E-10	1.00E-9	1.00E-9	8.00E-10	1.00E-9
SN66	1.00E-9	1.10E-9	9.00E-10	1.00E-9	1.00E-9	8.00E-10	9.00E-10
SN67	1.10E-9	1.00E-9	1.00E-9	1.00E-9	9.00E-10	8.00E-10	9.00E-10
SN68	1.20E-9	1.00E-9	1.00E-9	1.00E-9	1.00E-9	8.00E-10	1.00E-9
SN69	1.20E-9	1.00E-9	1.00E-9	1.00E-9	9.00E-10	8.00E-10	9.00E-10
SN70	1.00E-9	1.00E-9	1.00E-9	1.00E-9	1.00E-9	8.00E-10	9.00E-10
SN71	1.20E-9	1.00E-9	1.00E-9	1.00E-9	1.00E-9	8.00E-10	9.00E-10
SN72	1.10E-9	1.00E-9	1.00E-9	1.00E-9	1.00E-9	8.00E-10	9.00E-10
SN73	1.20E-9	1.00E-9	1.00E-9	1.00E-9	1.00E-9	8.00E-10	9.00E-10
SN74	1.10E-9	1.10E-9	1.00E-9	1.00E-9	9.00E-10	8.00E-10	9.00E-10
Statistics							
Min	1.00E-9	1.00E-9	9.00E-10	1.00E-9	9.00E-10	8.00E-10	9.00E-10
Max	1.20E-9	1.10E-9	1.00E-9	1.00E-9	1.00E-9	8.00E-10	1.00E-9
Mean	1.13E-9	1.03E-9	9.80E-10	1.00E-9	9.70E-10	8.00E-10	9.20E-10
Sigma	8.23E-11	4.83E-11	4.22E-11	1.85E-17	4.83E-11	1.31E-17	4.22E-11

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	9.00E-10	8.00E-10
SN65	1.00E-9	8.00E-10
SN66	9.00E-10	8.00E-10
SN67	9.00E-10	8.00E-10
SN68	1.00E-9	8.00E-10
SN69	9.00E-10	8.00E-10
SN70	9.00E-10	8.00E-10
SN71	9.00E-10	8.00E-10
SN72	9.00E-10	8.00E-10
SN73	9.00E-10	8.00E-10
SN74	9.00E-10	8.00E-10
Statistics		
Min	9.00E-10	8.00E-10
Max	1.00E-9	8.00E-10
Mean	9.20E-10	8.00E-10
Sigma	4.22E-11	1.31E-17

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	8.00E-10	9.00E-10
SN65	8.00E-10	9.00E-10
SN66	8.00E-10	9.00E-10
SN67	8.00E-10	9.00E-10
SN68	8.00E-10	9.00E-10
SN69	8.00E-10	9.00E-10
SN70	8.00E-10	9.00E-10
SN71	8.00E-10	1.00E-9
SN72	8.00E-10	9.00E-10
SN73	8.00E-10	1.00E-9
SN74	8.00E-10	9.00E-10
Statistics		
Min	8.00E-10	9.00E-10
Max	8.00E-10	1.00E-9
Mean	8.00E-10	9.20E-10
Sigma	1.31E-17	4.22E-11

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0240 Issue : 01
Part Type :	EDS2508APTA	Manufacturer :	Elpida Memory, Inc.	

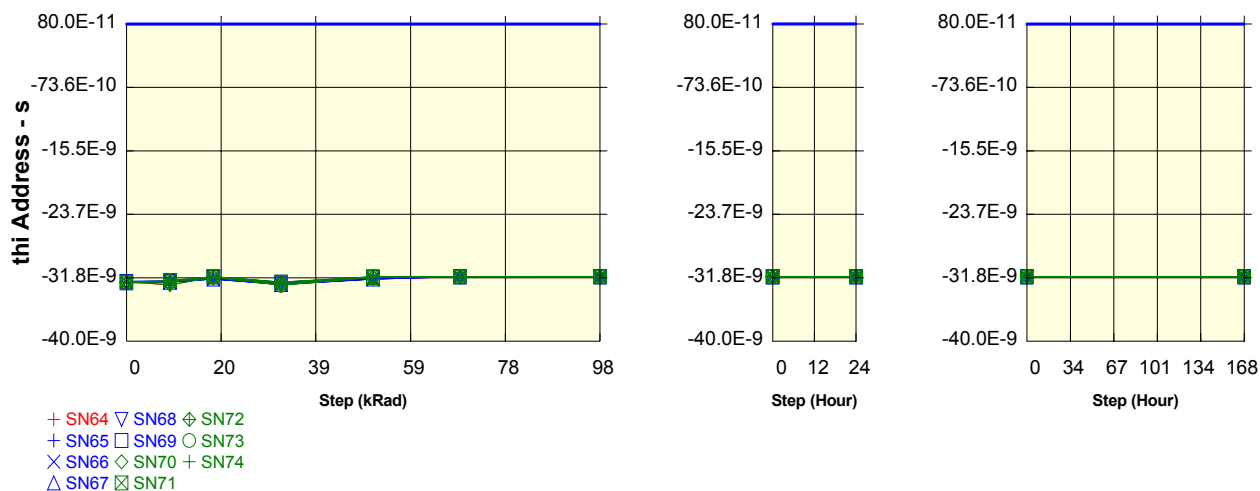
Test conditions : Tid

Parameter : Input Hold Time : thi Address

Unit : s

Spec Limit Max : 80.0E-11

Spec limits are represented in bold lines on the graphic.



Test TST001 : Exposure

	0 kRad	9 kRad	18 kRad	32 kRad	51 kRad	69 kRad	98 kRad
SN64	-32.3E-9	-32.8E-9	-31.7E-9	-32.6E-9	-32.0E-9	-31.7E-9	-31.7E-9
SN65	-32.4E-9	-32.4E-9	-31.8E-9	-32.6E-9	-31.8E-9	-31.7E-9	-31.7E-9
SN66	-32.4E-9	-32.4E-9	-32.0E-9	-32.7E-9	-32.0E-9	-31.7E-9	-31.7E-9
SN67	-32.5E-9	-32.4E-9	-32.0E-9	-32.7E-9	-32.0E-9	-31.7E-9	-31.7E-9
SN68	-32.4E-9	-32.3E-9	-31.8E-9	-32.6E-9	-31.8E-9	-31.7E-9	-31.7E-9
SN69	-32.3E-9	-32.2E-9	-31.7E-9	-32.4E-9	-31.7E-9	-31.7E-9	-31.7E-9
SN70	-32.4E-9	-32.3E-9	-31.7E-9	-32.4E-9	-31.7E-9	-31.7E-9	-31.8E-9
SN71	-32.4E-9	-32.2E-9	-31.7E-9	-32.4E-9	-31.8E-9	-31.7E-9	-31.7E-9
SN72	-32.4E-9	-32.7E-9	-31.8E-9	-32.8E-9	-31.8E-9	-31.7E-9	-31.7E-9
SN73	-32.4E-9	-32.3E-9	-31.7E-9	-32.8E-9	-31.7E-9	-31.7E-9	-31.7E-9
SN74	-32.4E-9	-32.4E-9	-31.8E-9	-32.6E-9	-31.8E-9	-31.7E-9	-31.7E-9
Statistics							
Min	-32.5E-9	-32.7E-9	-32.0E-9	-32.8E-9	-32.0E-9	-31.7E-9	-31.8E-9
Max	-32.3E-9	-32.2E-9	-31.7E-9	-32.4E-9	-31.7E-9	-31.7E-9	-31.7E-9
Mean	-32.4E-9	-32.4E-9	-31.8E-9	-32.6E-9	-31.8E-9	-31.7E-9	-31.7E-9
Sigma	47.1E-12	14.3E-11	11.5E-11	15.6E-11	11.0E-11	41.9E-17	31.6E-12

Test TST002 : Annealing 24H

	0 Hour	24 Hour
SN64	-31.7E-9	-31.7E-9
SN65	-31.7E-9	-31.7E-9
SN66	-31.7E-9	-31.7E-9
SN67	-31.7E-9	-31.7E-9
SN68	-31.7E-9	-31.7E-9
SN69	-31.7E-9	-31.7E-9
SN70	-31.8E-9	-31.7E-9
SN71	-31.7E-9	-31.7E-9
SN72	-31.7E-9	-31.7E-9
SN73	-31.7E-9	-31.7E-9
SN74	-31.7E-9	-31.7E-9
Statistics		
Min	-31.8E-9	-31.7E-9
Max	-31.7E-9	-31.7E-9
Mean	-31.7E-9	-31.7E-9
Sigma	31.6E-12	41.9E-17

Test TST003 : Annealing 168H

	0 Hour	168 Hour
SN64	-31.7E-9	-31.7E-9
SN65	-31.7E-9	-31.7E-9
SN66	-31.7E-9	-31.7E-9
SN67	-31.7E-9	-31.7E-9
SN68	-31.7E-9	-31.7E-9
SN69	-31.7E-9	-31.7E-9
SN70	-31.7E-9	-31.7E-9
SN71	-31.7E-9	-31.7E-9
SN72	-31.7E-9	-31.7E-9
SN73	-31.7E-9	-31.7E-9
SN74	-31.7E-9	-31.7E-9
Statistics		
Min	-31.7E-9	-31.7E-9
Max	-31.7E-9	-31.7E-9
Mean	-31.7E-9	-31.7E-9
Sigma	41.9E-17	41.9E-17