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Product Information

Product Name	2.5" SSD (32GB & 64GB)
Ordering Information	NSS900K032-IP NSS900K064-IP
Grade Temperature	Industrial Grade: -40 ~ 85°C
Flash Type	15nm MLC

Result Overview

Test Item		Test Reference	Sample Size	Test Result
1	High Temperature Operation Test	IEC 60068-2-2	3	Pass
2	Low Temperature Operation Test	IEC 60068-2-1	3	Pass
3	Temperature & Humidity Operation Test	IEC 60068-2-3	3	Pass
4	Temperature Cycling Operation Test	IEC 60068-2-14	3	Pass
5	Four Corner Test	INSIGNIS SPEC.	2	Pass

Test Items vs. Conditions

High Temperature Operation Test

Purpose:

Verify the operational ability of a device in a high temperature environment.

Test Conditions:

- Temperature: 85°C
- Duration: 72 hrs
- DUT State: Operation
- Quantity: 3 PCS
- Temperature & Humidity Equipment: KSON-THS-A4T
- Laboratory Ambience: 23±3°C, 50%±3%(RH)

Pass/Fail Criteria:

1. To ensure that no abnormalities with physical appearance are found or any electrical function failures are detected.
2. Appearance criteria: Refer to product appearance inspection specification.
Electrical function: Burn in test by PC. No data read error, no data write error and no data comparison error as well.

Test Result:

Sample No.	Sample 1	Sample 2	Sample 3
Appearance	Pass	Pass	Pass
Function	Pass	Pass	Pass

Low Temperature Operation Test

Purpose:

Verify the operational ability of a device in a low temperature environment.

Test Conditions:

- Temperature: -40°C
- Duration: 72 hrs
- DUT State: Operation
- Quantity: 3 PCS
- Temperature & Humidity Equipment: KSON-THS-A4T
- Laboratory Ambience: 23±3°C, 50%±3%(RH)

Pass/Fail Criteria:

1. To ensure that no abnormalities with physical appearance are found or any electrical function failures are detected.
2. Appearance criteria: Refer to product appearance inspection specification.
Electrical function: Burn in test by PC. No data read error, no data write error and no data comparison error as well.

Test Result:

Sample No.	Sample 1	Sample 2	Sample 3
Appearance	Pass	Pass	Pass
Function	Pass	Pass	Pass

Temperature and Humidity Operation Test

Purpose:

Verify the operational ability of a device in both a high temperature and high humidity environment.

Test Conditions:

- Temperature: 55°C
- Humidity: 95%
- Duration: 72 hrs
- DUT State: Operation
- Quantity: 3 PCS
- Temperature & Humidity Equipment: KSON-THS-A4T
- Laboratory Ambience: 23±3°C, 50%±3%(RH)

Pass/Fail Criteria:

1. To ensure that no abnormalities with physical appearance are found or any electrical function failures are detected.
2. Appearance criteria: Refer to product appearance inspection specification.
Electrical function: Burn in test by PC. No data read error, no data write error and no data comparison error as well.

Test Result:

Sample No.	Sample 1	Sample 2	Sample 3
Appearance	Pass	Pass	Pass
Function	Pass	Pass	Pass

Temperature Cycling Operation Test

Purpose:

Verify whether an environment with constant thermal change affects the physical appearance and functions of a device or not.

Test Conditions:

- Temperature: -40°C~85°C
- Rise/Drop Rate: 1°C/min.
- Duration:
 - -40°C for 30 minutes
 - 85°C for 30 minutes
 - No. of cycles: 20
- DUT State: Operation
- Quantity: 3 PCS
- Temperature & Humidity Equipment: KSON-THS-A4T
- Laboratory Ambience: 23±3°C, 50%±3%(RH)

Pass/Fail Criteria:

1. To ensure that no abnormalities with physical appearance are found or any electrical function failures are detected.
2. Appearance criteria: Refer to product appearance inspection specification.
Electrical function: Burn in test by PC. No data read error, no data write error and no data comparison error as well.

Test Result:

Sample No.	Sample 1	Sample 2	Sample 3
Appearance	Pass	Pass	Pass
Function	Pass	Pass	Pass

Four Corner Test

Purpose:

Evaluate the design limit of the DUT with a Hi – low voltage and temperature test to maintain operational stability.

Test Conditions:

- Test Temperature limit range: High level 85°C and Low level -40°C
- Rise/Drop Rate: 1°C/min.
- Test Voltage limit range: High level 5.5V (DC) and Low level 4.5V
- Duration:
 - -40°C for 12 hours of each High and Low voltage
 - 85°C for 12 hours of each High and Low voltage
- DUT State: Operation
- Quantity: 2 PCS
- Temperature & Humidity Equipment: KSON-THS-A4T
- Power Supply Equipment: Keysight E3648A 100W
- Software: Burn in Test 7.1 Pro.
- Laboratory Ambience: 23±3°C, 50%±3%(RH)

Pass/Fail Criteria:

1. To ensure that no abnormalities with physical appearance are found or any electrical function failures are detected.
2. Appearance criteria: Refer to product appearance inspection specification.
Electrical function: Burn in test by PC. No data read error, no data write error and no data comparison error as well.

Test Result:

Sample 1	Temperature	Voltage	Duration	Result
Level 1	-40°C	5.5V	12 hours	Pass
Level 2	-40°C	4.5V	12 hours	Pass
Level 3	85°C	4.5V	12 hours	Pass
Level 4	85°C	5.5V	12 hours	Pass

Sample 2	Temperature	Voltage	Duration	Result
Level 1	-40°C	5.5V	12 hours	Pass
Level 2	-40°C	4.5V	12 hours	Pass
Level 3	85°C	4.5V	12 hours	Pass
Level 4	85°C	5.5V	12 hours	Pass

CONCLUSION

All of the samples passed the functional, electrical characteristic, and cosmetic checks before, during and after each reliability test.

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