



2019-10-09

Mr. Mit Hsu
Netstec Technology Corp
6F 17 Guoxing Rd Wanhua District
Taipei, 108
TW

E-mail: mit.hsu@netstec.com.tw

Reference: File SV31514 Project 4789184322 Volume: N/A
Subject: Letter Report of Surge Protective Devices, Model YD40K320DH2

Dear Mr. Hsu,

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Samples of the subject products were tested at our facility in accordance with designated requirement by Netstec Technology Corp.

The following requested test items per UL 1449, 4th Edition have been conducted. See testing datasheet for detailed test results in Appendix (Total 38 pages).

1. SURGE TESTING – INITIAL VOLTAGE PROTECTION RATING TEST (L-N, N-G)
2. SURGE TESTING – NOMINAL DISCHARGE CURRENT TEST (L-N, N-G)
3. SURGE TESTING – REPEATED VOLTAGE PROTECTION RATING TEST (L-N, N-G)

Should you have any questions or comments concerning the above, please feel free to contact the undersigned.

Sincerely,

Stephen Wang
Senior Project Engineer
Department: 3012CTAI
Tel: (02)7737-3230
E-mail: stephen.wang@ul.com

Reviewed by:

Steven Yang
Project Engineer
Department: 3012CTAI

CLIENT INFORMATION	
Company Name	NETSTEC TECHNOLOGY CORP
Address	6f 17 Guoxing Rd Wanhua District Taipei, 108 Taiwan

AUDIT INFORMATION:		
Description of Tests	Per Standard No.	Edition/Revision Date
	UL 1449	4 th / 2018-08-01
<input checked="" type="checkbox"/> Tests Conducted by ¹ Elaine Wu		
<input type="checkbox"/> UL Staff conducting or witnessing testing (WTD, CTF Stage 1 or 2 only) <input type="checkbox"/> UL Staff supervising UL Staff in training		
<input type="checkbox"/> Authorized Signatory (CTDP, TPTDP, TCP, PPP, CTF Stage 3 or 4)		
Printed Name		Signature. Include date for CTDP, TPTDP, TCP, PPP, CTF Stage 3 or 4

TESTS TO BE CONDUCTED:			
Test No.	Done ³	Test Name	<input checked="" type="checkbox"/> Comments/Parameters <input type="checkbox"/> Tests Conducted by ² <input type="checkbox"/> Link to separate data files ⁴
1	X	SURGE TESTING - INITIAL VOLTAGE PROTECTION RATING TEST (COMBINATION WAVE TEST):	Completed
2	X	SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (MLV Not Recorded):	Completed
3	X	SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (Gap Type)	Completed
4	X	SURGE TESTING - REPEATED VOLTAGE PROTECTION RATING TEST (COMBINATION WAVE TEST):	Completed

Instructions -

- 1 - When all tests are conducted by one person, name can be inserted here instead of including name on each page containing data.
- 2 - When test conducted by more than one person, name of person conducting the test can be inserted next to the test name instead of including name on each page containing data. Test dates may be recorded here instead of entering test dates on the individual datasheet pages.
- 3 - Use of this field is optional and may be employed differently. If used to include a date instead of entering the testing date on the individual datasheet pages, the date shall be the date the test was conducted.
- 4 - Link to separate data files for a test can be inserted here. The link must be to a server that is accessible to UL staff, that provides for backup, required retention periods and a path, including file name, that does not change and result in a broken link. Not applicable to DAP.

Special Instructions -

Standard Test Conditions - Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Relative Humidity: Less than 85 percent

Altitude or Pressure: Less than 2000 m (6562 ft) or pressure of 80 - 106 kPa (800 - 1060 mBar)

Ambient Temperature: 25 ±5°C

AC Operating Voltage: Nominal System Voltage or manufacturers normal operating voltage rating, whichever is greater

[] Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, C	±	Relative Humidity, %	±	Barometric Pressure, mBar	±
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RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

<input checked="" type="checkbox"/> Electric shock	<input type="checkbox"/> Radiation
<input checked="" type="checkbox"/> Energy related hazards	<input type="checkbox"/> Chemical hazards
<input checked="" type="checkbox"/> Fire	<input type="checkbox"/> Noise
<input checked="" type="checkbox"/> Heat related hazards	<input type="checkbox"/> Vibration
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Other (Specify)___

Tested by: _____

Date _____

TEST LOCATION: (To be completed by Staff Conducting the Testing)					
<input checked="" type="checkbox"/> UL or Affiliate	<input type="checkbox"/> WTDP	<input type="checkbox"/> CTDP	<input type="checkbox"/> TPTDP	<input type="checkbox"/> TCP	<input type="checkbox"/> PPP
	<input type="checkbox"/> CTF	<input type="checkbox"/> CTF	<input type="checkbox"/> CTF	<input type="checkbox"/> CTF	
	Stage 1	Stage 2	Stage 3	Stage 4	
Company Name: Underwriters Laboratories Taiwan Co., Ltd.					
Address: 1st FL 260, DA-YEH ROAD, PEITOU, TAIPEI CITY, TAIWAN 112					

TEST EQUIPMENT INFORMATION

☒ UL test equipment information is recorded on UL's Aurora database.

☐ UL test equipment information is recorded on <<insert location and local laboratory equipment system identification.>>

Inst. ID No.	Instrument Type	Test Number +, Test Title or Conditioning	Function /Range	Last Cal. Date	Next Cal. Date
-	-	-	-	-	-

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.
-	-

Tested by: _____

Date _____

TEST SAMPLE IDENTIFICATION:

The table below is provided to establish correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	[X] Test No. +	Sample No.	Manufacturer, Product Identification and Ratings
2591110	2019-10-02	1~4	1	NETSTEC TECHNOLOGY CORP (DOWIN), Model YD40K320DH2, rated 230VAC, MCOV L-N 320VAC, N-G 255VAC, In 20kA

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

[] Sampling Procedure -

[] This document contains data or information using color and if printed, should be printed in color to retain legibility and the information represented by the color.

Tested by: _____

Date _____

SURGE TESTING - INITIAL VOLTAGE PROTECTION RATING TEST
(COMBINATION WAVE TEST):

UL 1449, Cl. 40.6
(CSA 269.X, Cl. 6.2)

LAB: All calibration and test waveforms are to be captured and included with the Data Sheet Package.

For Gap Type Devices: Please capture the front edge of the test waveforms with a finer timeframe than typically used for MOVs to insure accurate peak readings. This typically requires the time scale to be set for 1 microsecond/division.

It is critical that these Gap Type Devices actually discharge during testing. The Gap Type SPDs will conduct AC current when they operate.

METHOD

Three previously untested samples of the SPDs with six inches of leads exiting from the enclosure including external Fuse/Circuit Breaker, when if provided, wired in accordance with the manufacturer's installation instructions, were connected to an ac power source at the voltage as detailed in the table below.

Any specified overcurrent protection means (circuit breakers or fuses) shall be installed with the samples for this test. The same overcurrent protection means sample shall be used for an SPD sample/mode throughout the Initial Voltage Protection Rating test, the Nominal Discharge Test, and the Repeated Voltage Protection Ratings Test (3+15+3 shots per OCP device).

[X] The AC short circuit current available at the output of the surge generator needs to be confirmed as minimum 100 A with a power factor between 0.8 and 1.0 for each AC Voltage test level (MCOV). Use the attached Short Circuit Current Capacity datasheet for the test method and place to record data.

[] SPDs that permit follow-current were tested on a circuit with an available short-circuit current of _____ A, with a power factor of _____ as per paragraph 40.2.2.3 of UL 1449, 4th edition.

Three separate impulses were applied between the points indicated at the 90° point of the ac waveform. The peak voltage that resulted from the impulse was then measured within 100 µs after the application of the specified surge. The transient voltage surge impulse had the following parameters:

Open Circuit Voltage - 1.2 by 50 µs, 6 kV peak
Short Circuit Current - 8 by 20 µs, 3000 A peak

LAB: When determining the Short Circuit Current the noise measured during the Determination of No Signal Noise for Current is to be subtracted from the value measured during the calibration of the waveform. The Short Circuit Current may need to be increased to account for the noise.

Tested by: _____

Date _____

A recording or print out shall be obtained of the resultant waveform for each applied surge. Following the application of all specified surges, a Voltage Protection Rating shall be assigned for each protection mode tested based on the average of the measured peak voltages recorded and the nearest higher value in Table 79.1 of UL 1449, 4th Edition.

LAB: When determining the Measured Limiting Voltage the noise measured during the Determination of No Signal Noise During Determination of Voltage Protection Rating is to be subtracted from the Measured Limiting Voltage during the determination of the Voltage Protection Rating.

These Gap Type SPDs that permit follow-current were tested on a circuit with an available short-circuit current and power factor as specified in the table as per paragraph 40.2.2.3, (refer to the exception for N-G mode), of UL 1449, 4th edition. Use the attached Short Circuit Current Capacity datasheet for the test method and place to record data.

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Tested by: _____

Date _____

TEST DATE: 2019-10-07

SURGE TESTING - INITIAL VOLTAGE PROTECTION RATING TEST (COMBINATION WAVE TEST): (CONT'D)

RESULTS

SPD (SINGLE PHASE CONFIGURATION)			Test in Series with External Circuit Breaker or Fuse			Test Wire Size (AWG)	Mode	Limiting Voltage Measured (Vp)			Average of 3 shots	Results
Model	Sample No.	Rated Voltage (V ac)	Current Rating (A)	CB/Fuse Class, Mfr & Cat. No.	CB/Fuse Sample No.			1	2	3		
YD40K320DH2	1	230	N/A	N/A	N/A	14	L-N	965	971	960	965.4	X
	-				N/A			-	-	-	-	-
	-				N/A			-	-	-	-	-

Avg. Measured Limiting Voltage: 913.0 Vp, Voltage Protection Rating: 1000 Vp

YD40K320DH2	1	0	N/A	N/A	N/A	14	N-G	801	814	815	810	X
	-				N/A			-	-	-	-	-
	-				N/A			-	-	-	-	-

AVG. MEASURED LIMITING VOLTAGE: 754.6 VP, VOLTAGE PROTECTION RATING: 800 VP

Ambient Relative Barometric
 Temperature, C 23.5 Humidity, % 65.6 Pressure, mBar 1015.4

Tested by: _____

Date _____

SURGE TESTING - INITIAL VOLTAGE PROTECTION RATING TEST (COMBINATION WAVE TEST): (CONT'D)

The following definitions explain each of the possible letter indications, which are utilized under the column heading "Results" in the previous table.

- X - Supplementary protection devices, such as fuses in series with the suppression network or the circuit protection devices, did not interrupt the operation of the device as a result of this test. The average Measured Limiting Voltage measured did not exceed the Voltage Protection Rating, nor did any individual measurement exceed the Voltage Protection Rating by ten percent (10%).
- A - The average Measured Limiting Voltage measured did exceed the Voltage Protection Rating, or an individual measurement did exceed the Voltage Protection Rating by more than ten percent (10%).
- B - Supplementary protection devices, such as fuses in series with the suppression network or the circuit protection devices, interrupted the operation of the device as a result of this test.

Ambient Temperature, C	<u>23.5</u>	Relative Humidity, %	<u>65.6</u>	Barometric Pressure, mBar	<u>1015.4</u>
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Tested by: _____

Date _____

SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (MLV Not Recorded):

UL 1449, CL. 40.7
(CSA 269.X, Cl. 6.3)

LAB: All calibration and test waveforms are to be captured and included with the Data Sheet Package.

METHOD

The same samples of the SPDs that were subjected to the Voltage Protection Rating Test were used for this test. Each sample was placed on a softwood covered surface, covered with a double layer of white tissue paper, and loosely draped with a double layer of cheesecloth. The orientation of the SPD was such to represent the most severe conditions of normal installation. When applicable, the SPDs were connected in series with the same samples of the overcurrent protection utilized for the SURGE TESTING - INITIAL VOLTAGE PROTECTION RATING TEST.

For each of the samples tested, each mode as tested in the Voltage Protection Rating Test was subjected to the following test sequence:

1. While the SPD is unenergized, apply the 8/20 short circuit current surge, per mode, at the Nominal Discharge Current specified by the Manufacturer through the SPD.
2. Within 1 second following the previous surge application, the manufacturer's specified (declared) MCOV shall be applied for 60 seconds (± 5 seconds).
3. Immediately following Steps 1 and 2, above, the surge shall be repeated for a total of five cycles. A maximum of 60 seconds (± 15 seconds) is permitted between surges.
4. The samples shall be allowed to rest for 30 minutes (± 5 minutes). Notes: Samples may rest for less time if agreeable to all concerned.
5. Steps 1 through 4, above, shall be repeated for a total of three cycles, resulting in fifteen total surges applied to each sample/mode.
6. Following the 15th surge, the MCOV shall be re-applied for at least 15 minutes.

LAB: When determining the Short Circuit Current the noise measured during the Determination of No Signal Noise for Current is to be subtracted from the value measured during the calibration of the waveform. The Short Circuit Current may need to be increased to account for the noise.

[X] The AC short circuit current available at the output of the surge generator needs to be confirmed as minimum 100 A with a power factor between 0.8 and 1.0 for each AC Voltage test level (MCOV). Use the attached Short Circuit Current Capacity datasheet for the test method and data recording.

[] SPDs that permit follow-current were tested on a circuit with an available short-circuit current of _____ a, with a power factor of _____ as per paragraph 40.2.2.3 of UL 1449, 4TH edition. Additionally, the SPD is to be energized when the 8/20 short circuit current surge is applied.

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Tested by: _____

Date _____

TEST DATE: 2019-10-08

SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (MLV Not Recorded): (CONT'D)

RESULTS

SPD			Test in Series with External Circuit Breaker or Fuse				TEST WIRE AWG SIZE	Mode	MCOV (V ac)	Nominal Discharge Current (A)	Results
Model	Sample No.	Rated Voltage (V ac)	If yes, indicate CB or Fuse w/Fuse Type	Current Rating (A)	CB/Fuse Mfr & Cat. No.	CB/Fuse Sample No.					
YD40K320DH2	1	230	N/A	N/A	N/A	N/A	14	L-N	320	20,000	X

Ambient
Temperature, C 24.0Relative
Humidity, % 63.8Barometric
Pressure, mBar 1015.8

Tested by: _____

Date _____

SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (MLV Not Recorded) (CONT'D):

RESULTS

The following definitions explain each of the possible letter indications which are utilized under the column heading "Results" in the previous table.

- X - There was no emission of flame, molten metal, glowing or flaming particles through an opening (pre-existing or created as a result of the test) in the product. There was no charring, glowing or flaming of the supporting surface, tissue paper or cheesecloth. There was no ignition of the enclosure. No openings were created in the enclosure that resulted in the accessibility of live parts. Supplementary protective devices, internal or external to the SPD, did not open.
- A - There was emission of flame, molten metal, glowing or flaming particles through an opening (pre-existing or created as a result of the test) in the product.
- B - There was charring, glowing or flaming of the supporting surface, tissue paper or cheesecloth.
- C - There was ignition of the enclosure.
- D - Openings were created in the enclosure that resulted in the accessibility of live parts.
- E - Supplementary protective devices, internal or external to the SPD, opened during the test.

Ambient		Relative		Barometric	
Temperature, C	<u>24.0</u>	Humidity, %	<u>63.8</u>	Pressure, mBar	<u>1015.8</u>

Tested by: _____

Date _____

SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (TYPES
1, 2 AND 3 SPDs):

GAP TYPE DEVICES

LAB: All calibration and test waveforms are to be captured and included with the Data Sheet Package.

METHOD

The same samples of the SPDs that were subjected to the Voltage Protection Rating Test were used for this test. Each sample was placed on a softwood covered surface, covered with a double layer of white tissue paper, and loosely draped with a double layer of cheesecloth. The orientation of the SPD was such to represent the most severe conditions of normal installation. Any specified over current protection means (circuit breakers or fuses) shall be installed in series with the samples for this test.

A separate new test sample that was not subjected to any pre-testing was used to calibrate the surge waveform through the device before testing began on any of the other test samples.

These SPDs that permit follow-current were tested on a circuit with an available short-circuit current and power factor as specified in the table as per paragraph 40.2.2.3(refer to the exception for N-G mode) of UL 1449, 4th edition. Use the attached Short Circuit Current Capacity datasheet for the test method and place to record data. Additionally, the SPD is to be energized at the MCOV when the 8/20 short circuit current surge is applied.

The specified mode(s) of each of the samples was subjected to the following test sequence:

1. While the SPD is energized at the MCOV, apply the first 8/20 short circuit current surge at the 0° point of the ac waveform with the Nominal Discharge Current specified by the Manufacturer through the SPD.
2. Within 60 seconds (±15 seconds) following the previous surge application, the next surge is applied at an increment of 30° on the ac waveform.
3. Step 2 above is then repeated until a total of five cycles have been completed.
4. The samples shall be allowed to rest unenergized for 30 minutes (±5 minutes). Notes: Samples may rest for less time if agreeable to all concerned.
5. Steps 2 through 4, above, shall be repeated for a total of three cycles, resulting in fifteen total surges applied to each sample/mode.
6. Following the 15th surge, the device shall remain energized at the MCOV for at least 15 minutes.

LAB: When determining the Short Circuit Current the noise measured during the Determination of No Signal Noise for Current is to be subtracted from the value measured during the calibration of the waveform. The Short Circuit Current may need to be increased to account for the noise.

Note: The surges are applied at the following points on the ac waveform:

- 1st Set of 5 surges: 0°, 30°, 60°, 90°, 120°
- 2nd Set of 5 surges: 150°, 180°, 210°, 240°, 270°
- 3rd Set of 5 surges: 300°, 330°, 0°, 30°, 60°

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Tested by: _____

Date _____

TEST DATE: 2019-10-08

SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (TYPES 1, 2 AND
3COMPONENT ASSEMBLIES) (CONT'D):GAP TYPE
DEVICES

RESULTS

SPD			External Over Current Protection		Test Wire AWG Size	Mode		AC Short Circuit Current (A)	Power Factor	Nominal Discharge Current (A)	Result
Model	Sample No.	Rated Voltage (V ac)	ID Number	Sample Number							
YD40K320DH2	1	0	N/A	N/A	14	N-G	255	100	1	20,000	X

Ambient
Temperature, C

24.0

Relative
Humidity, %

63.8

Barometric
Pressure, mBar

1015.8

Tested by: _____

Date _____

SURGE TESTING - NOMINAL DISCHARGE CURRENT TEST (TYPE 1/TYPE 2 SPDS GAP TYPE
AND TYPE 4 SPDS INTENDED FOR TYPE1/TYPE 2 APPLICATIONS) (CONT'D): DEVICES

RESULTS

The following definitions explain each of the possible letter indications, which are utilized under the column heading "Results" in the previous table.

- X - There was no emission of flame, molten metal, glowing or flaming particles through an opening (pre-existing or created as a result of the test) in the product. There was no charring, glowing or flaming of the supporting surface, tissue paper or cheesecloth. There was no ignition of the enclosure. No openings were created in the enclosure that resulted in the accessibility of live parts. Supplementary protective devices, internal or external to the SPD, did not open.
- A - There was emission of flame, molten metal, glowing or flaming particles through an opening (pre-existing or created as a result of the test) in the product.
- B - There was charring, glowing or flaming of the supporting surface, tissue paper or cheesecloth.
- C - There was ignition of the enclosure.
- D - Openings were created in the enclosure that resulted in the accessibility of live parts.
- E - Supplementary protective devices, internal or external to the SPD, opened during the test.

Tested by: _____

Date _____

SURGE TESTING - REPEATED VOLTAGE PROTECTION RATING TEST UL 1449, CL. 40.9
(COMBINATION WAVE TEST): (CSA 269.X, Cl. 6.2)

LAB: All calibration and test waveforms are to be captured and included with the Data Sheet Package.

METHOD

The same samples of the SPDs that were subjected to the Nominal Discharge Current or Operating Duty Cycle Test were used for this test. Each sample was allowed to cool to room temperature before beginning this test. When applicable, the SPDs were connected in series with the same samples of the overcurrent protection utilized for the Surge Testing - Initial Voltage Protection Rating Test and the Surge Testing - Nominal Discharge Current or Operating Duty Cycle Test.

One impulse was applied between the points indicated at the 90° point of the ac waveform. The peak voltage that resulted from the impulse was then measured within 100 µs after the application of the specified surge. The transient voltage surge impulse had the following parameters:

Open Circuit Voltage - 1.2 by 50 µs, 6 kV peak
Short Circuit Current - 8 by 20 µs, 3000 A peak

LAB: When determining the Short Circuit Current the noise measured during the Determination of No Signal Noise for Current is to be subtracted from the value measured during the calibration of the waveform. The Short Circuit Current may need to be increased to account for the noise.

[X] The AC short circuit current available at the output of the surge generator needs to be confirmed as minimum 100 A with a power factor between 0.8 and 1.0 for each AC Voltage test level (MCOV). Use the attached Short Circuit Current Capacity datasheet for the test method and place to record data.

[] SPDs that permit follow-current were tested on a circuit with an available short-circuit current of _____ a, with a power factor of _____ as per paragraph 40.2.2.3 of UL 1449, 4THedition.
A recording or print out shall be obtained of the resultant waveform for each applied surge.

LAB: When determining the Measured Limiting Voltage the noise measured during the Determination of No Signal Noise During Determination of Voltage Protection Rating is to be subtracted from the Measured Limiting Voltage during the determination of the Voltage Protection Rating.

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Tested by: _____

Date _____

Test date: 2019-10-08

SURGE TESTING - REPEATED VOLTAGE PROTECTION RATING TEST (COMBINATION WAVE TEST): (CONT'D)

RESULTS

SPD (SINGLE PHASE CONFIGURATION)			Test in Series with External Circuit Breaker or Fuse			Test Wire Size (AWG)	Mode	Limiting Voltage Measured (Vp)			Average of 3 shots	Results
Model	Sample No.	Rated Voltage (V ac)	Current Rating (A)	CB/Fuse Class, Mfr & Cat. No.	CB/Fuse Sample No.			1	2	3		
YD40K320DH2	1	230	N/A	N/A	N/A	14	L-N	982	997	1000	993	X
	-				N/A			-	-	-	-	-
	-				N/A			-	-	-	-	-
YD40K320DH2	1	0	N/A	N/A	N/A	14	N-G	1018	1034	1041	1031	X
	-				N/A			-	-	-	-	-
	-				N/A			-	-	-	-	-

Ambient Temperature, C 24.0 Relative Humidity, % 63.8 Barometric Pressure, mBar 1015.8

Tested by: _____

Date _____

SURGE TESTING - REPEATED VOLTAGE PROTECTION RATING TEST
(COMBINATION WAVE TEST): (CONT'D)

The following definitions explain each of the possible letter indications, which are utilized under the column heading "Results" in the previous table.

- X - The average MLV per sample per mode during the "REPEATED VOLTAGE PROTECTION RATING TEST" did not DEVIATE from the average MLV for the same sample during the "INITIAL VOLTAGE PROTECTION RATING TEST" by greater than ten percent (10%). Supplementary protection devices, such as fuses in series with the suppression network or the circuit protection devices, did not interrupt the operation of the device as a result of this test.
- A - The average MLV per sample during the "REPEATED VOLTAGE PROTECTION RATING TEST" DEVIATED from the average MLV for the same sample during the "INITIAL VOLTAGE PROTECTION RATING TEST" by greater than ten percent (10%).
- B - Supplementary protection devices, such as fuses in series with the suppression network or the circuit protection devices, interrupted the operation of the device as a result of this test.

Ambient		Relative		Barometric	
Temperature, C	24.0	Humidity, %	63.8	Pressure, mBar	1015.8

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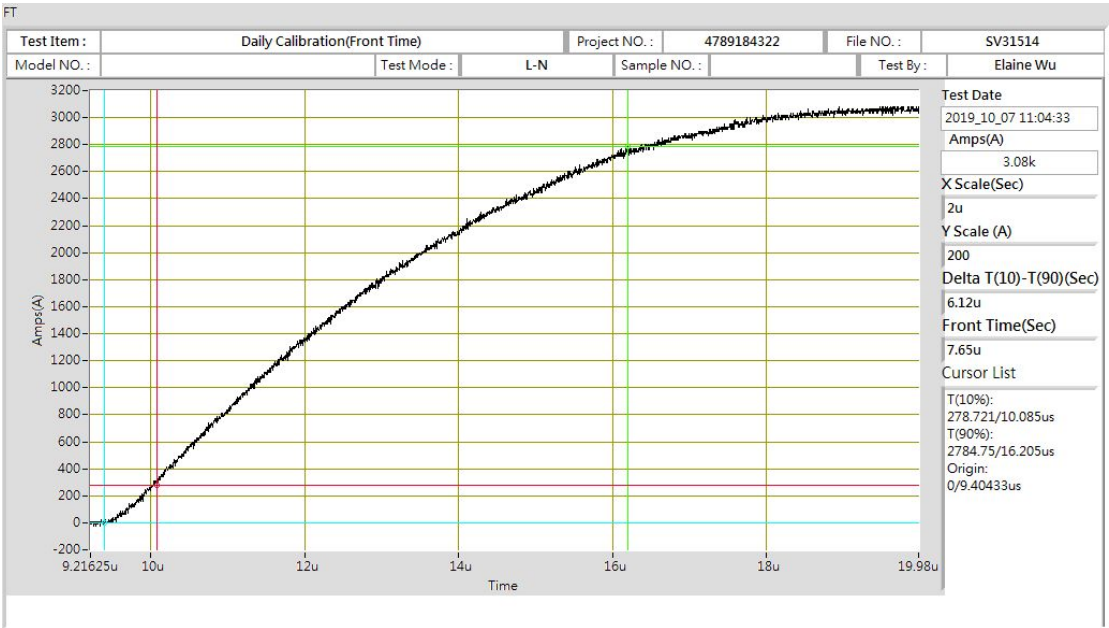
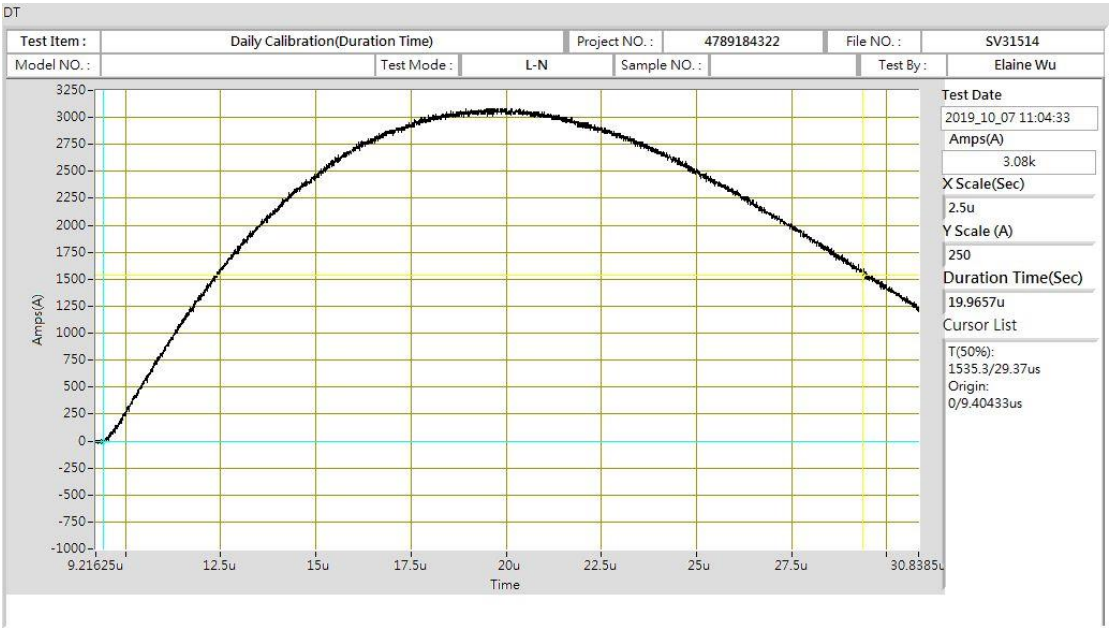
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Tested by: _____

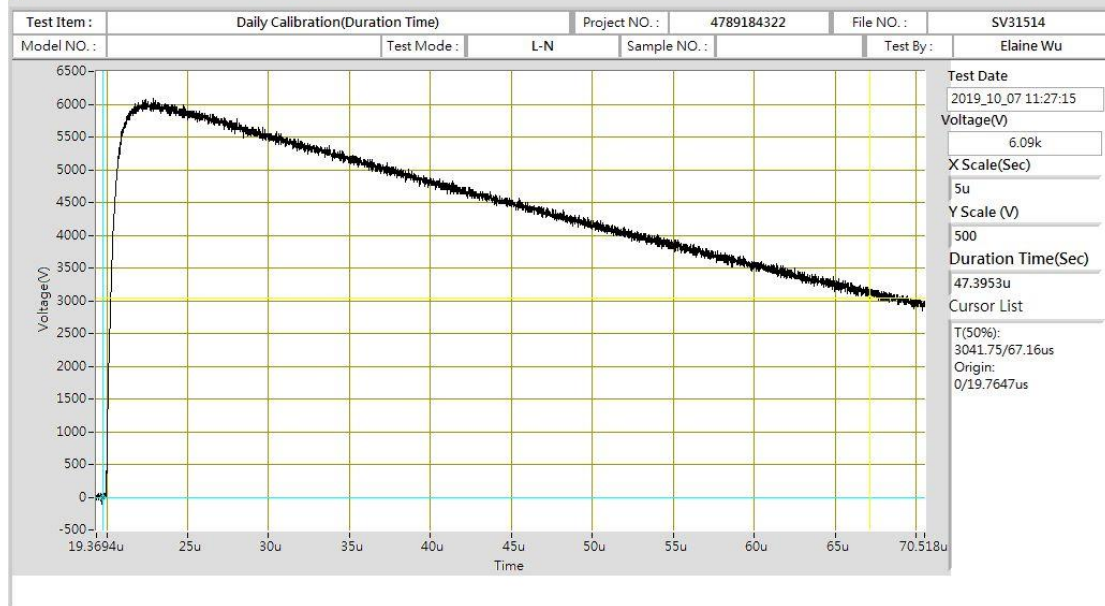
Date _____

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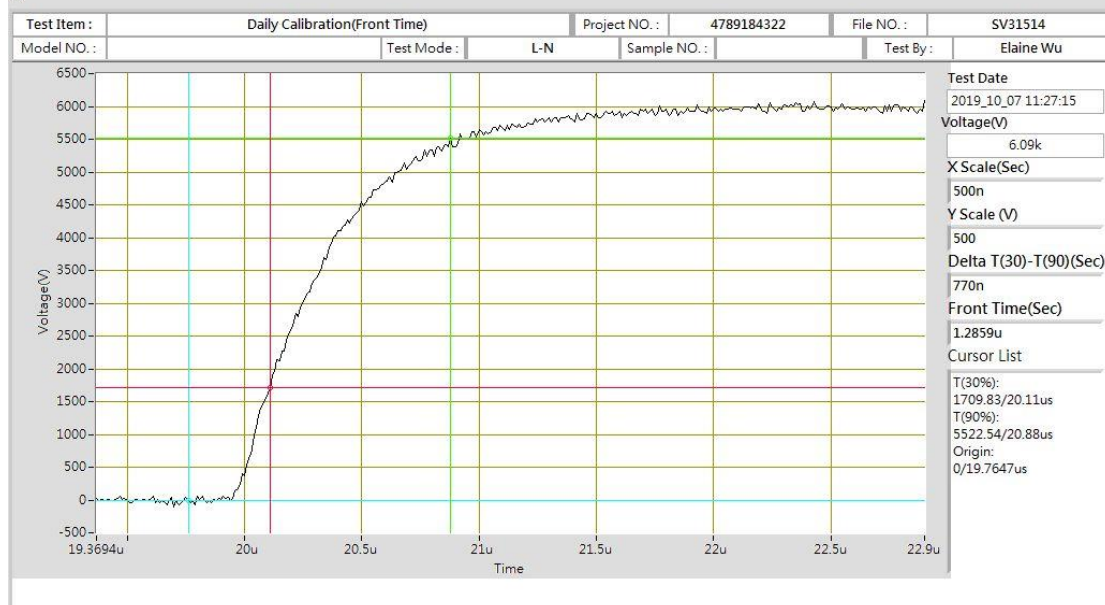
6KV3KA CAL 2019-10-07



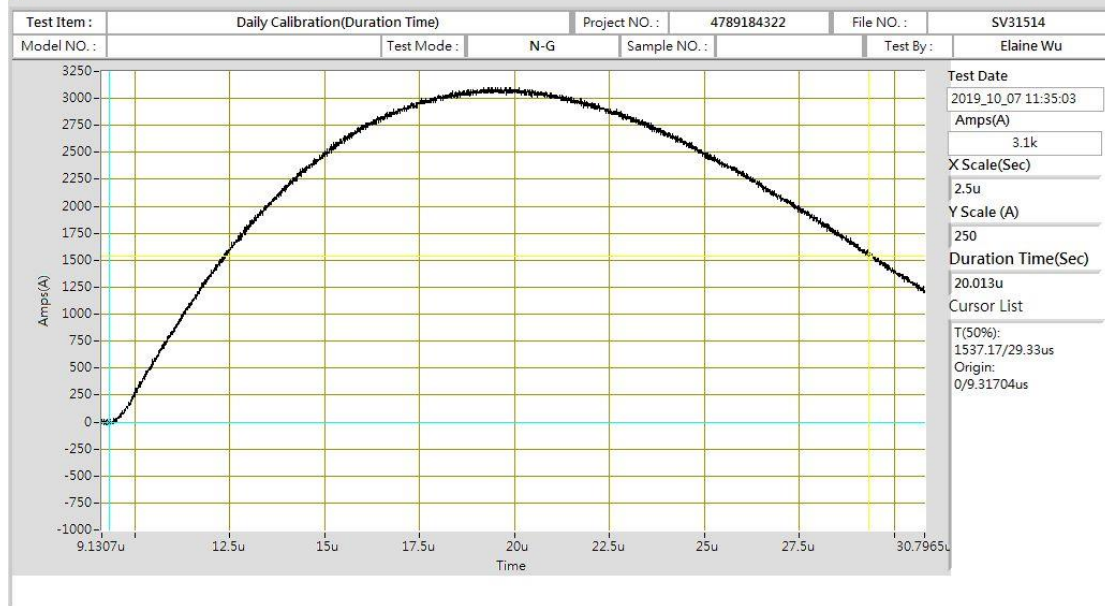
DT



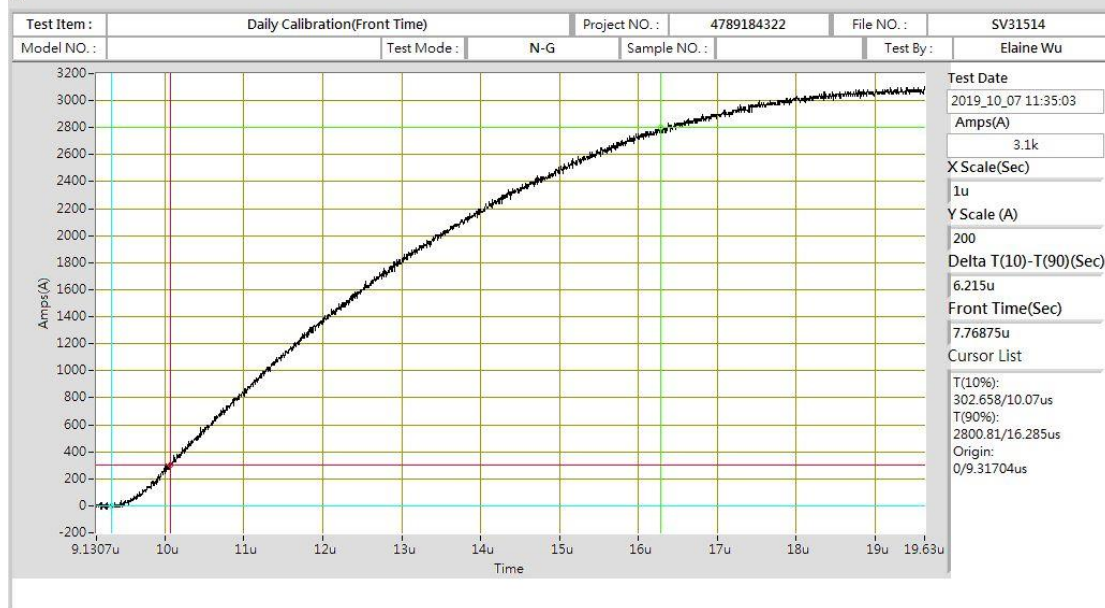
FT



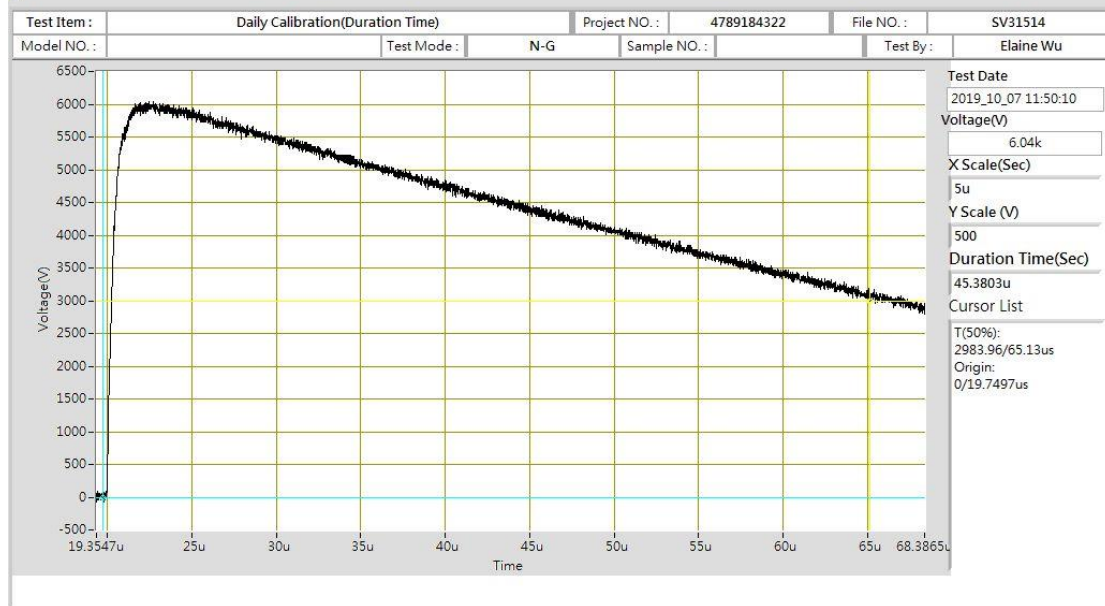
DT



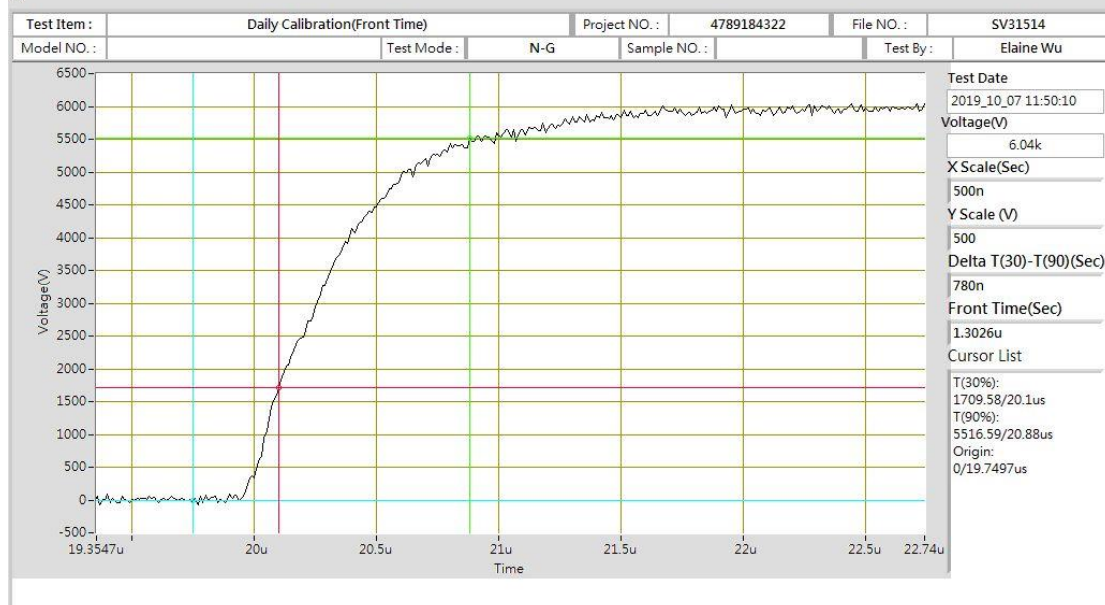
FT



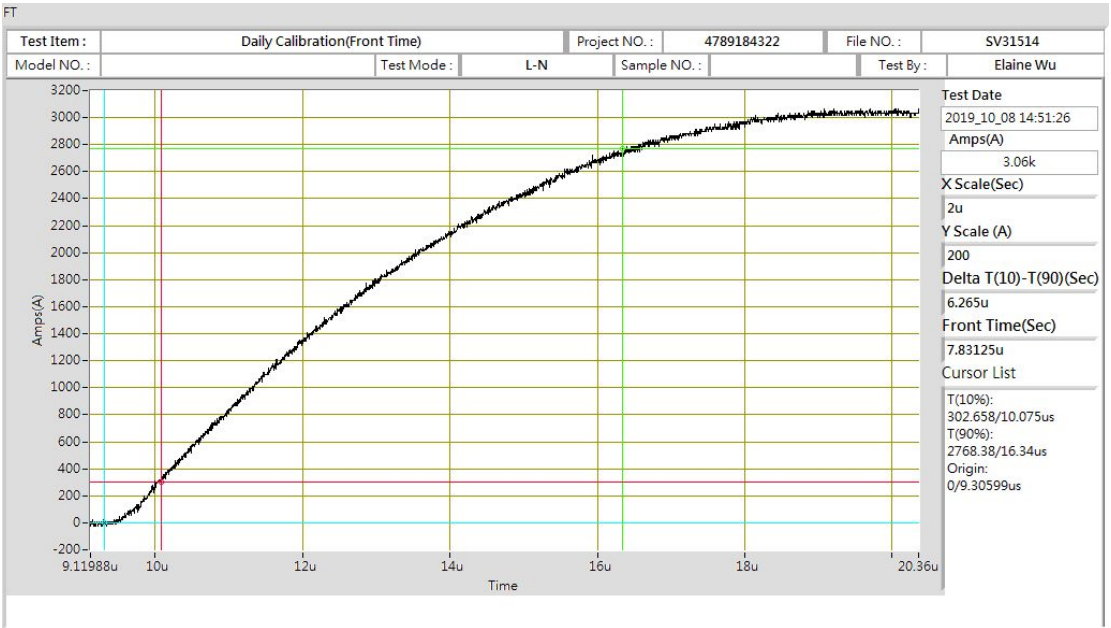
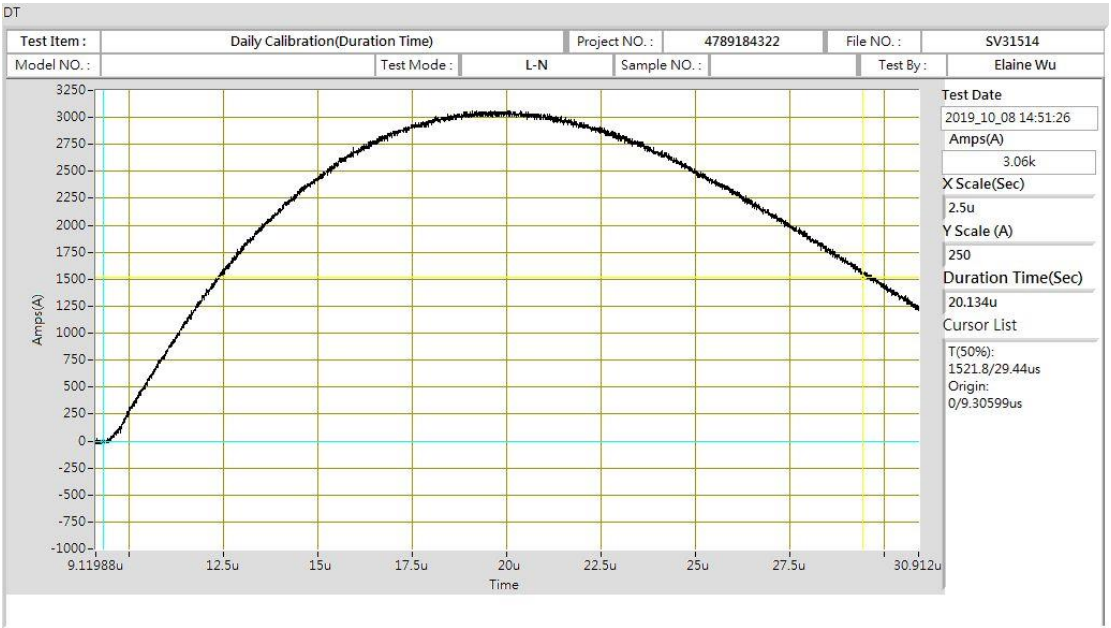
DT



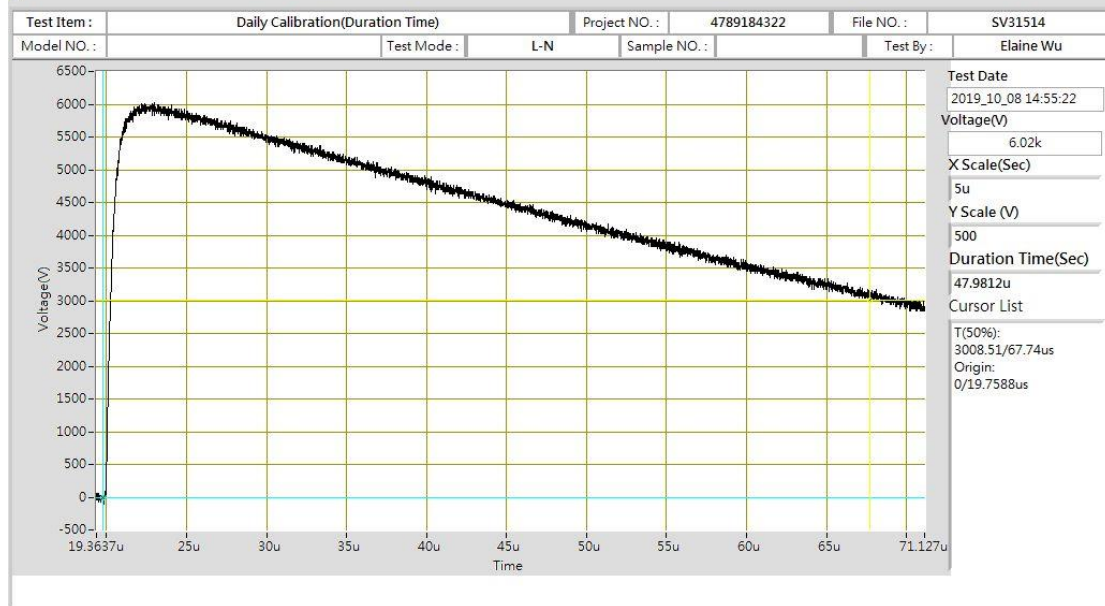
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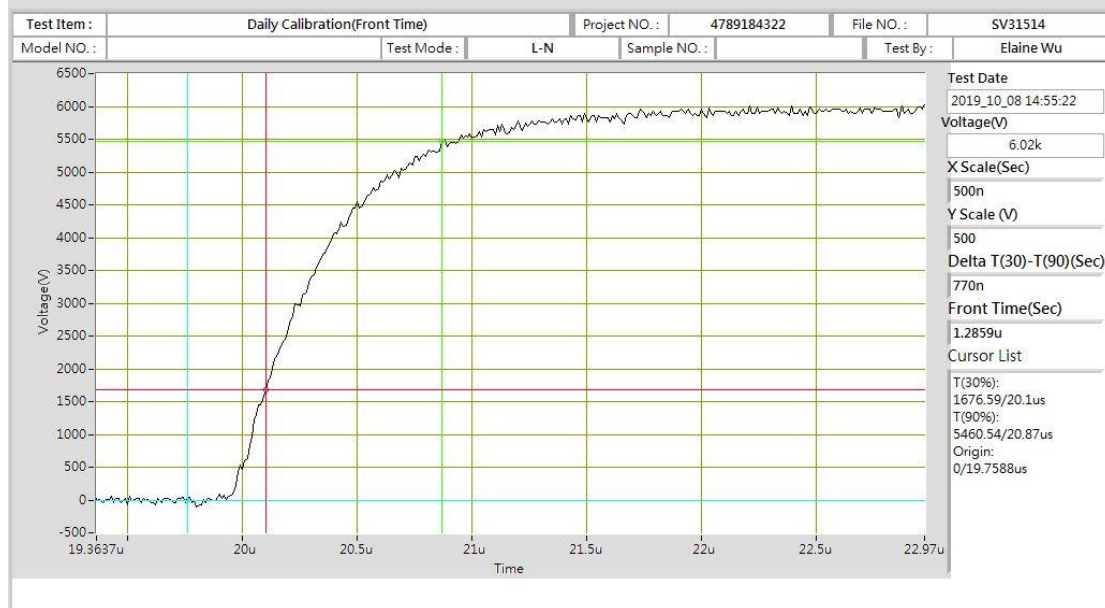
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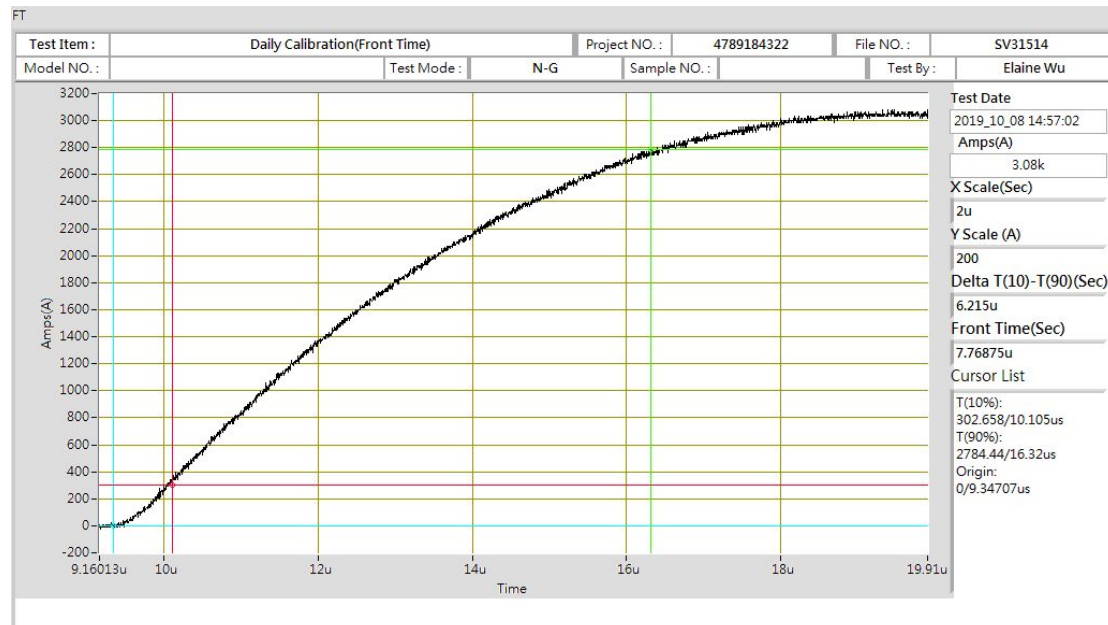
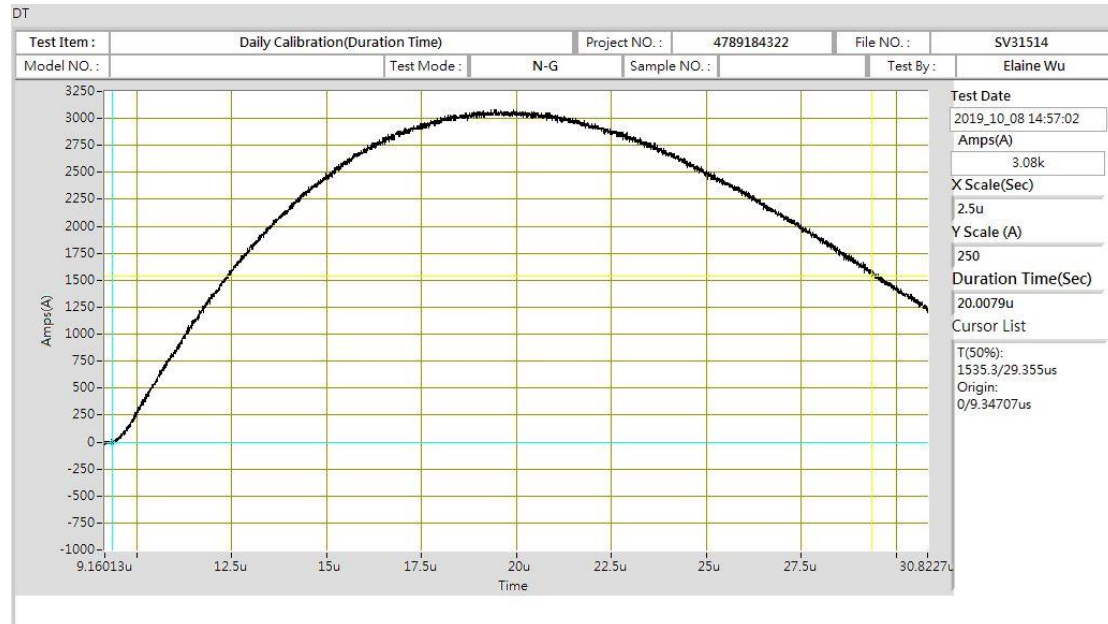


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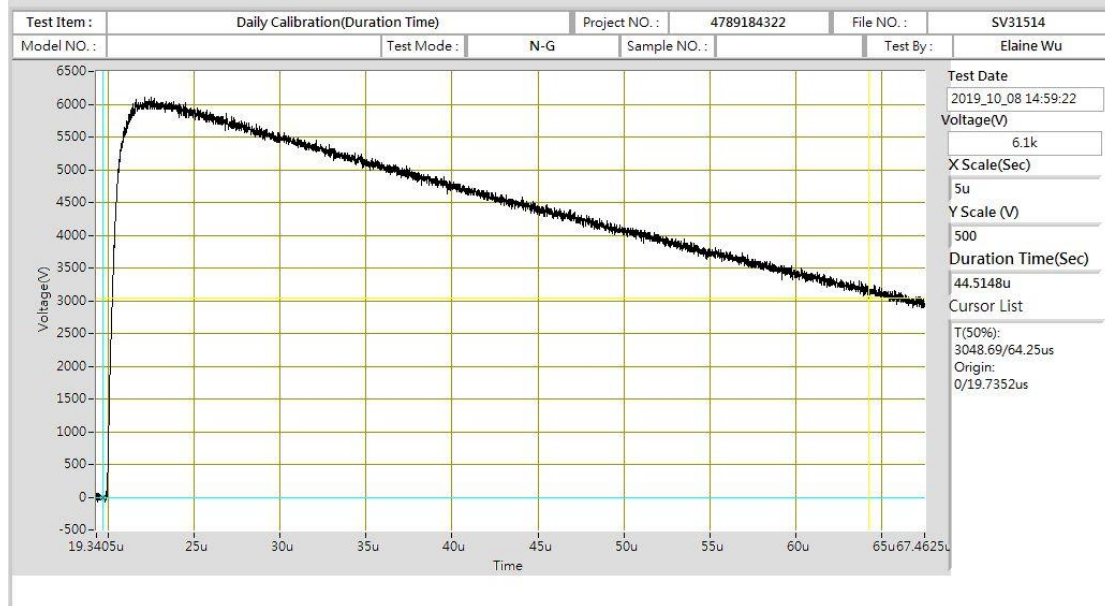


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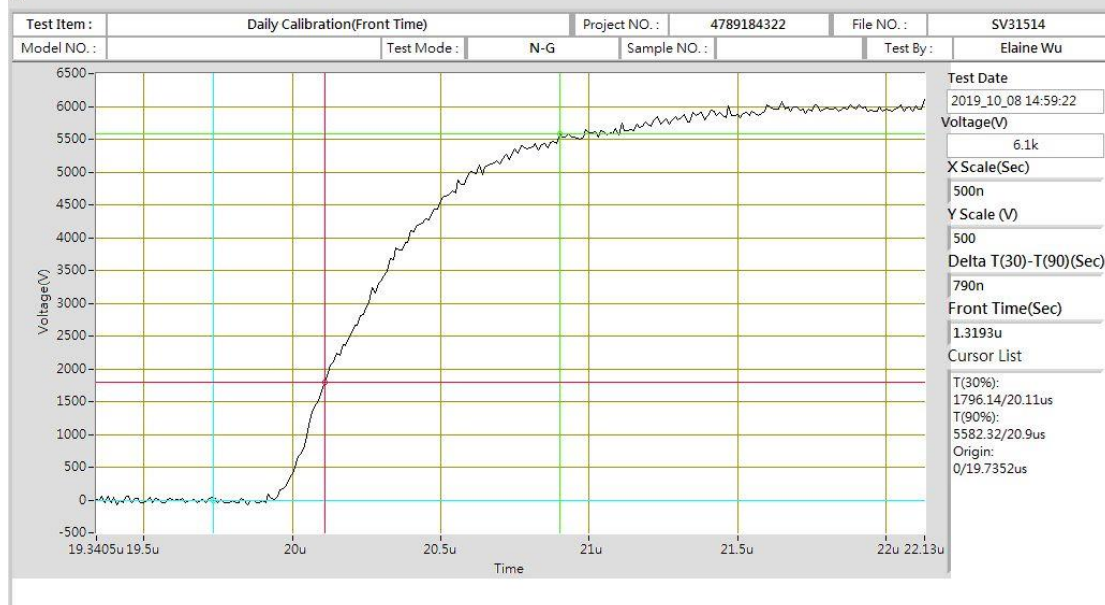


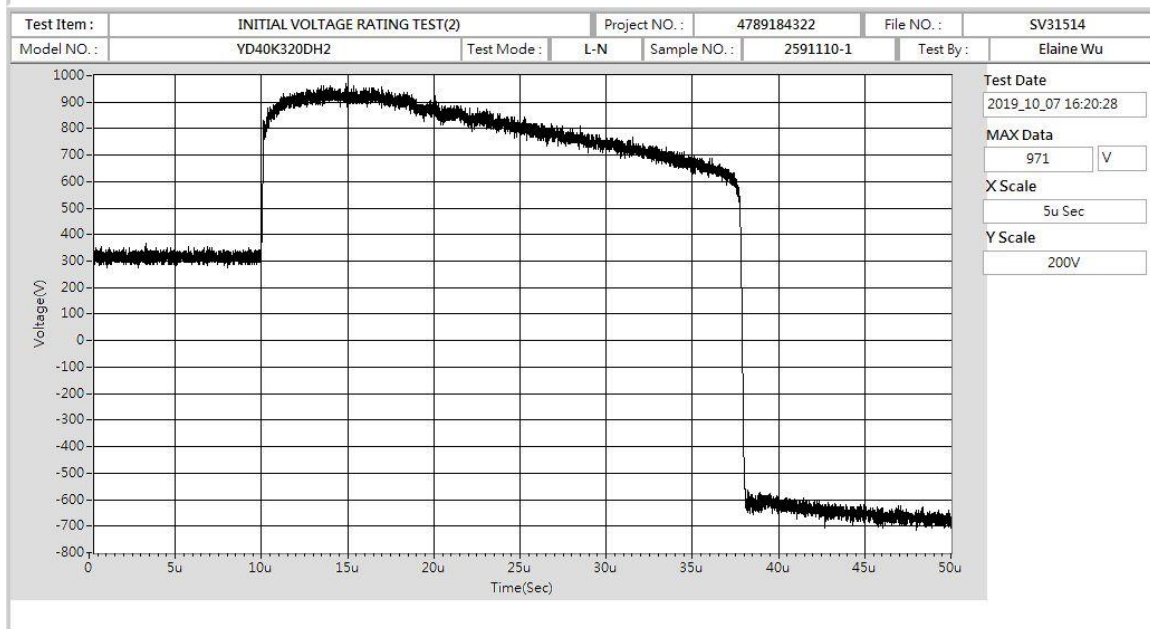
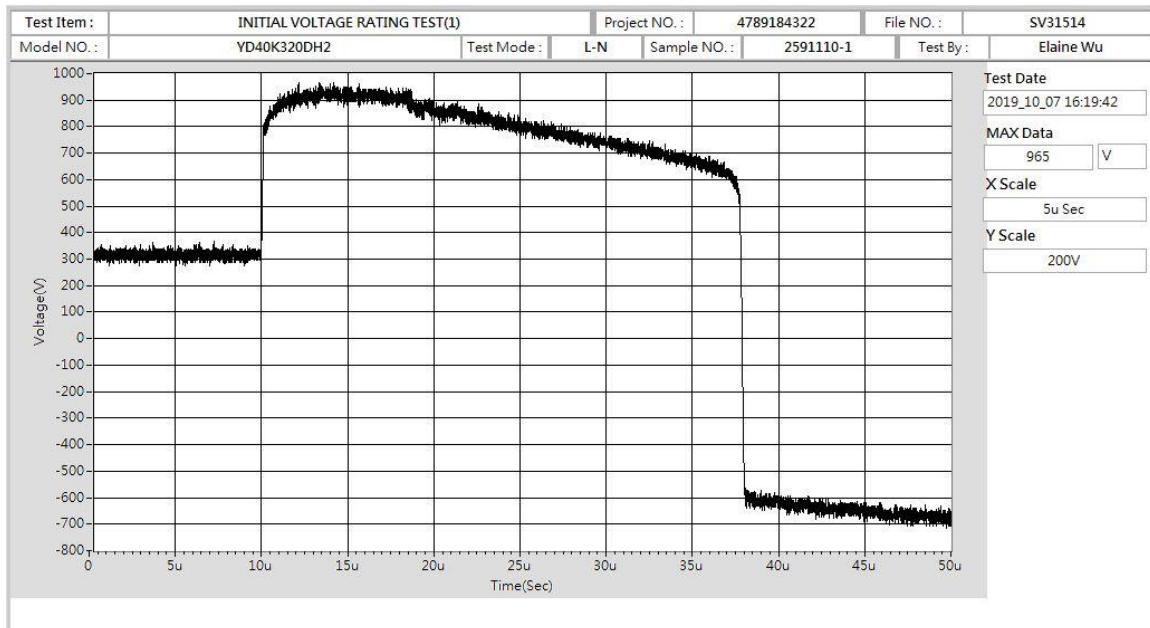


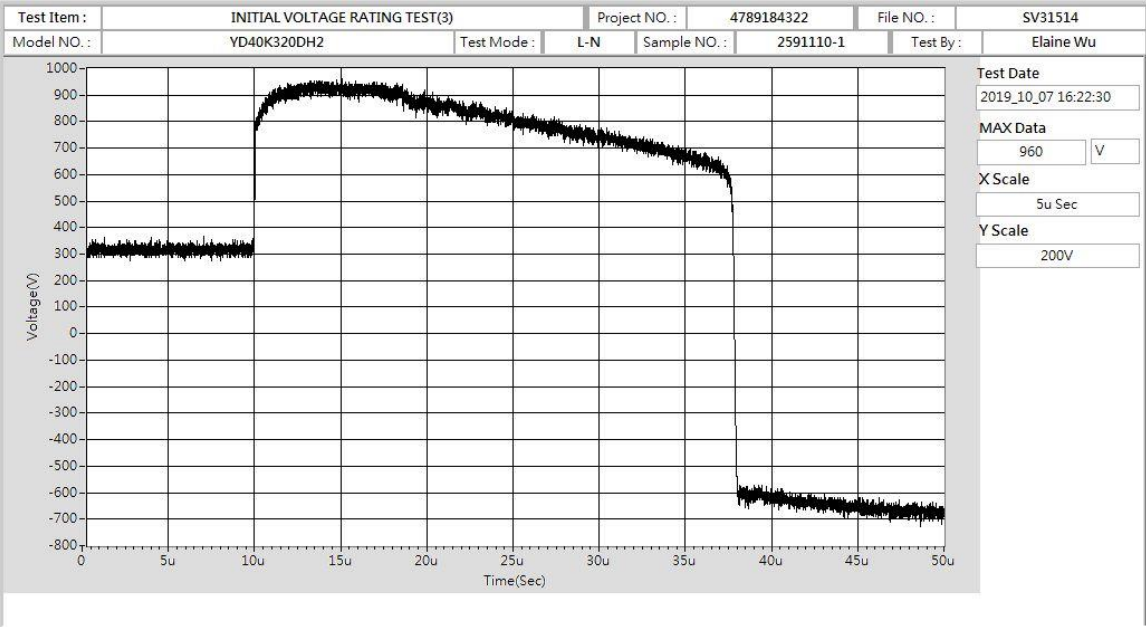
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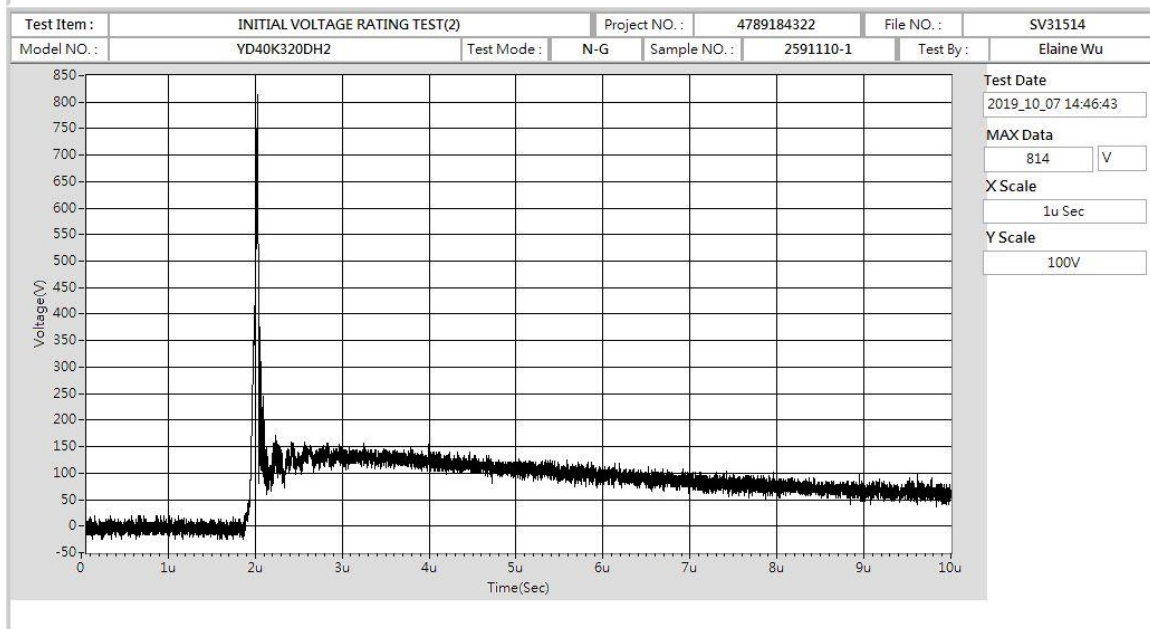
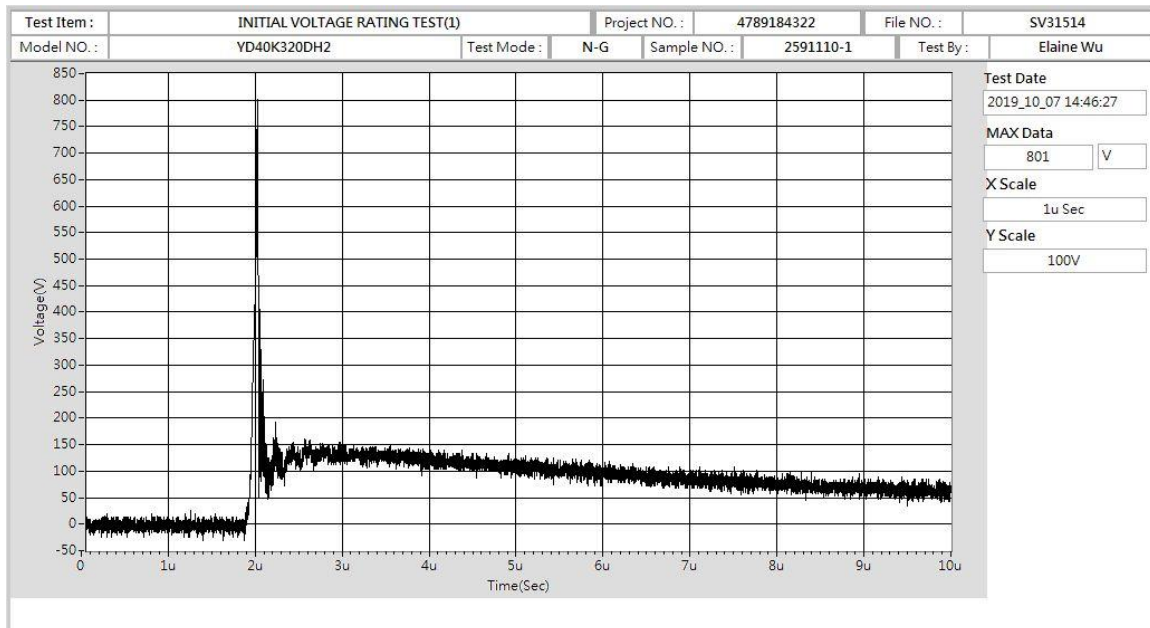


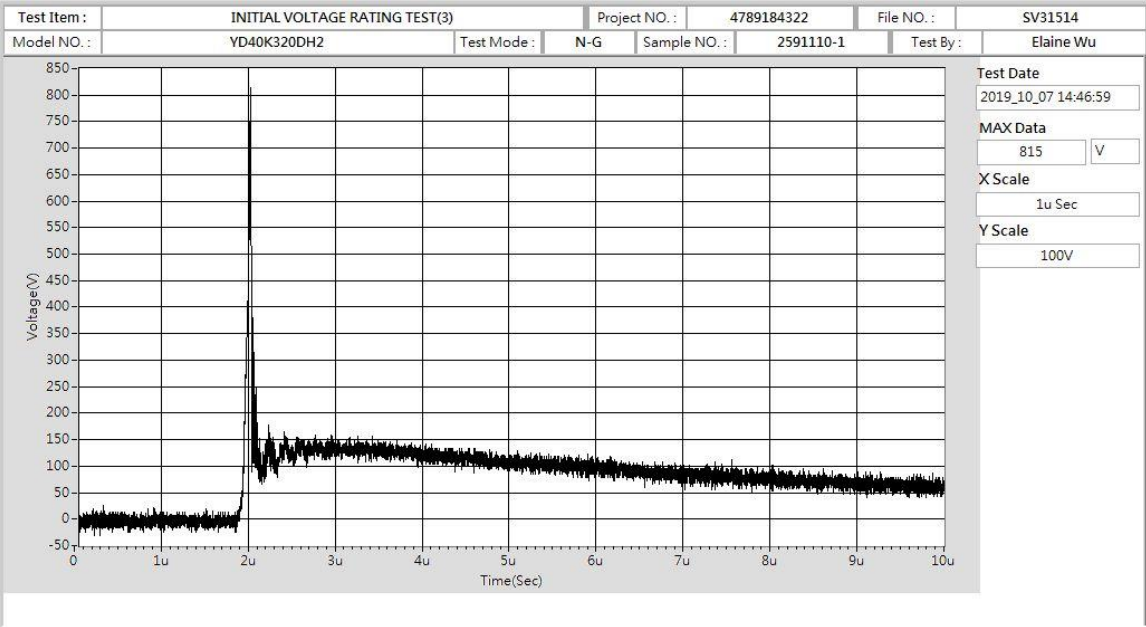
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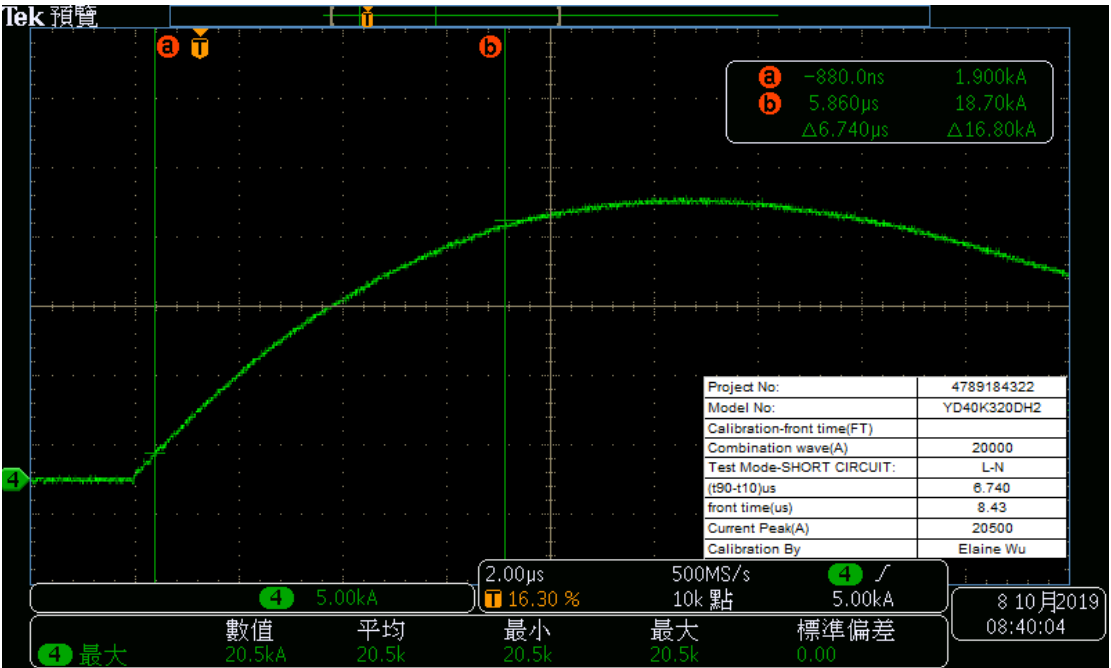
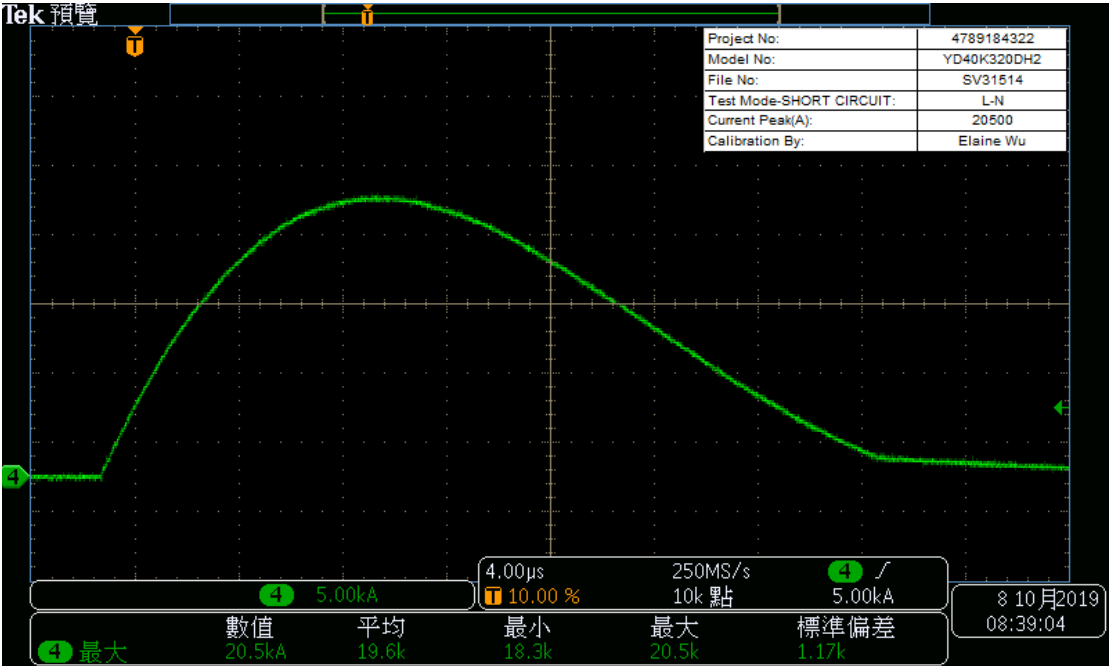


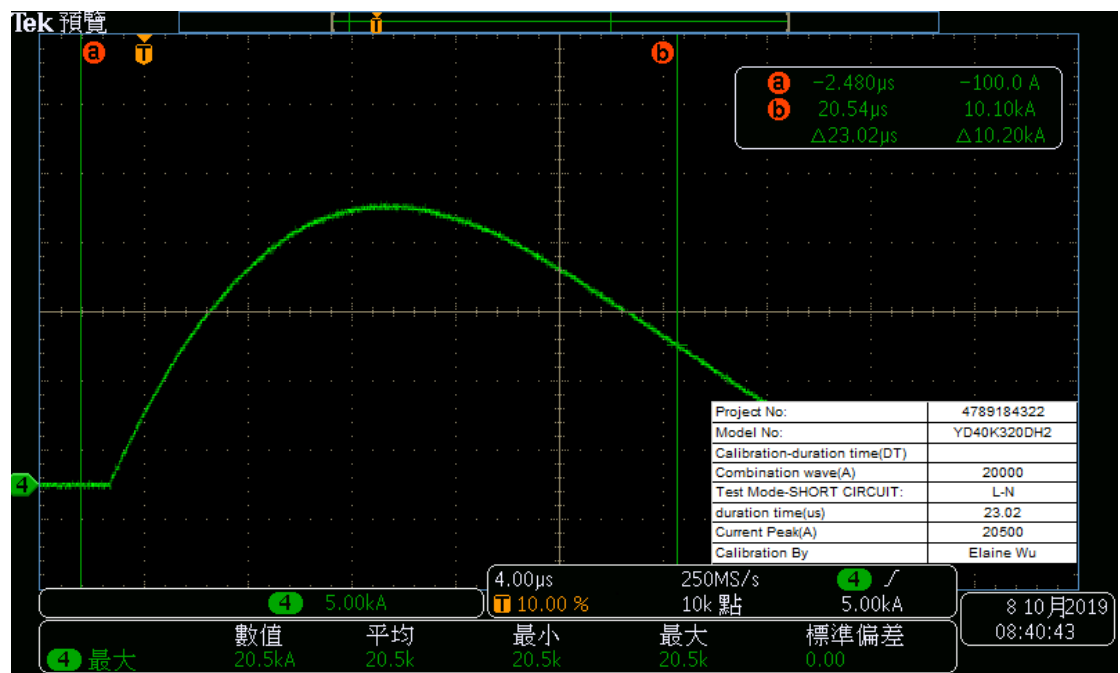






L-N 20KA CAL





N-G 20KA CAL

