

# Battery Datasheet

## FLPB301031

2021. 02. 16.

Routejade R&D Center



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The energy storage company, Creative

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# Contents

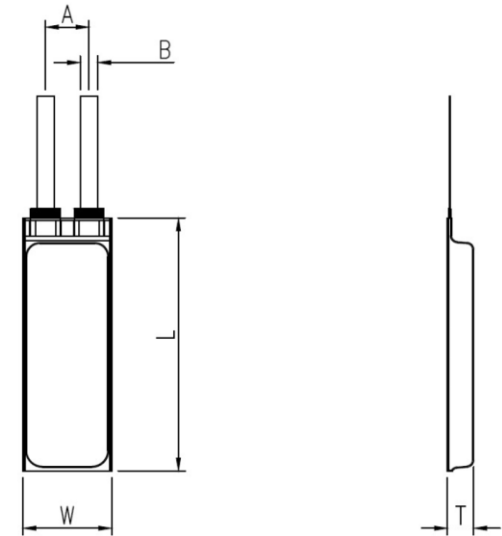
- I. General Specification**
- II. Battery Characteristics**
- II. Safety Test**

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# I. GENERAL SPECIFICATION

# 1. General Specification

Item	Specification	Remark
1 Nominal Capacity	76mAh	0.2C rate, 3.0V cut-off
2 Minimum Capacity	70mAh	0.2C rate, 3.0V cut-off
3 Nominal Voltage	3.8V	From 4.35V to 3.00V
4 Charging Method	CC/CV	Constant Current / Constant Voltage
5 Charging Current (Std.)	0.5C (35.0mA)	0 ~ 45°C
6 Charging Current (Max.)	1.0C (70.0mA)	
7 Charging Voltage	4.35 ± 0.03V	
8 Charging End Condition	0.03C (2.1mA)	At CV mode
9 Charging Time (Std.)	< 3.0 hours	
10 Discharge Current (Std.)	0.2C (14.0mA)	- 20 ~ 60°C
11 Discharge Current (Max.)	2C (140mA)	
12 Discharge Cut-off Voltage	3.0V	
13 Cycle	>80% @500cycle	0.5C/0.5C cycle @25°C
14 Dimension	Thickness (mm)	Max. 3.0mm (@Swelling max.)
	Width (mm)	Max. 10.2mm
	Length (mm)	Max. 29.1mm
15. Storage Temperature Range	40 ~ 60°C	For up to one week
	25 ~ 40°C	For up to three month
	-20 ~ 25°C	For up to one year
16. Impedance (mΩ)	< 400	
17. Weight (g)	< 1.8	



	Item	Spec.
T	Thickness	3.0mm max.
W	Width	10.2mm max.
L	Length	29.1mm max.
A	Distance between centers of 2 tabs	5.0 ± 0.5mm
B	Tab width	2.0 ± 0.1mm

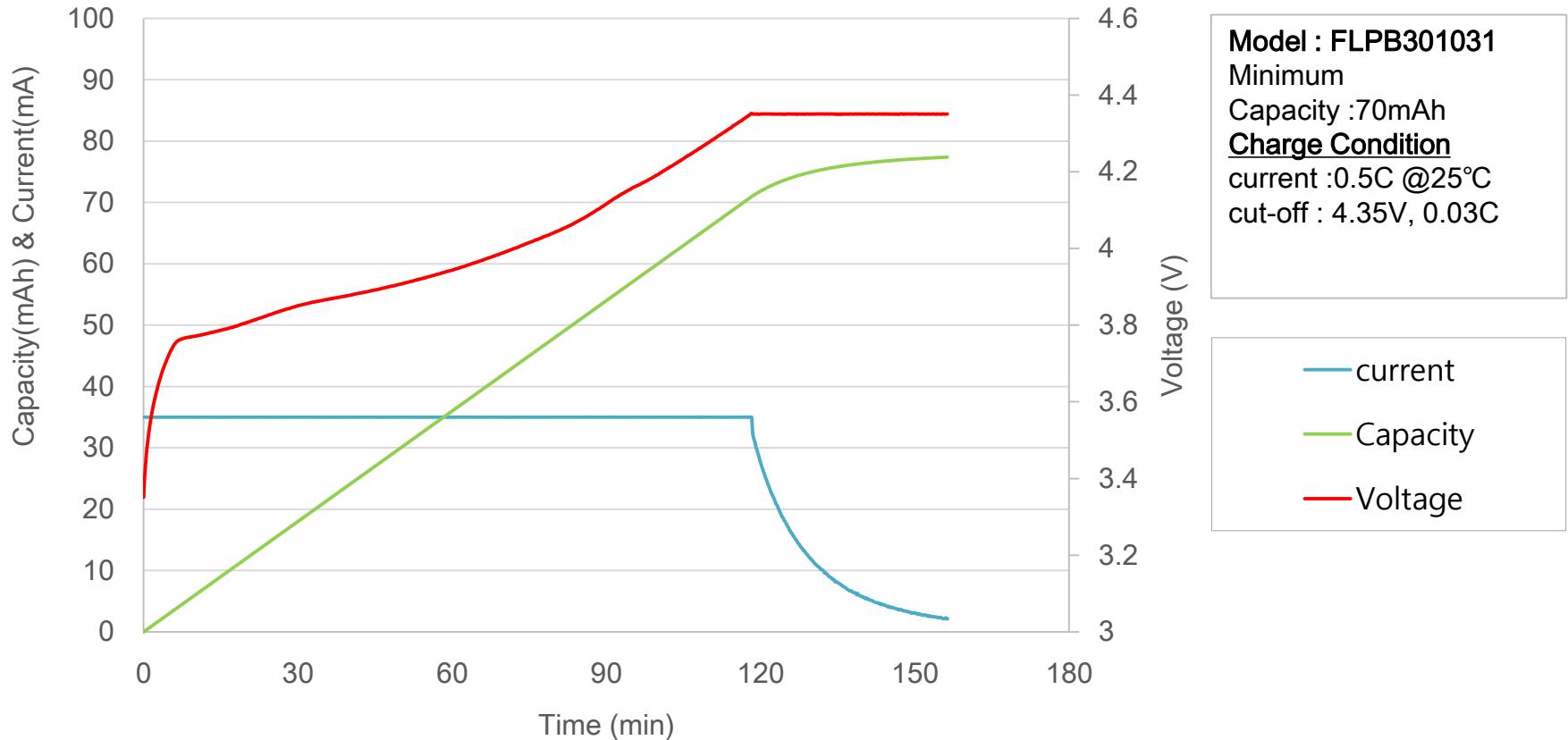
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## II. BATTERY CHARACTERISTICS

1. Charge Characteristics
2. Discharge Characteristics
3. Cycle(1.0C/1.0C)
4. Cycle(1.0C/1.0C, 0.5C/0.5C)
5. 60°C, 90%RH Storage Test

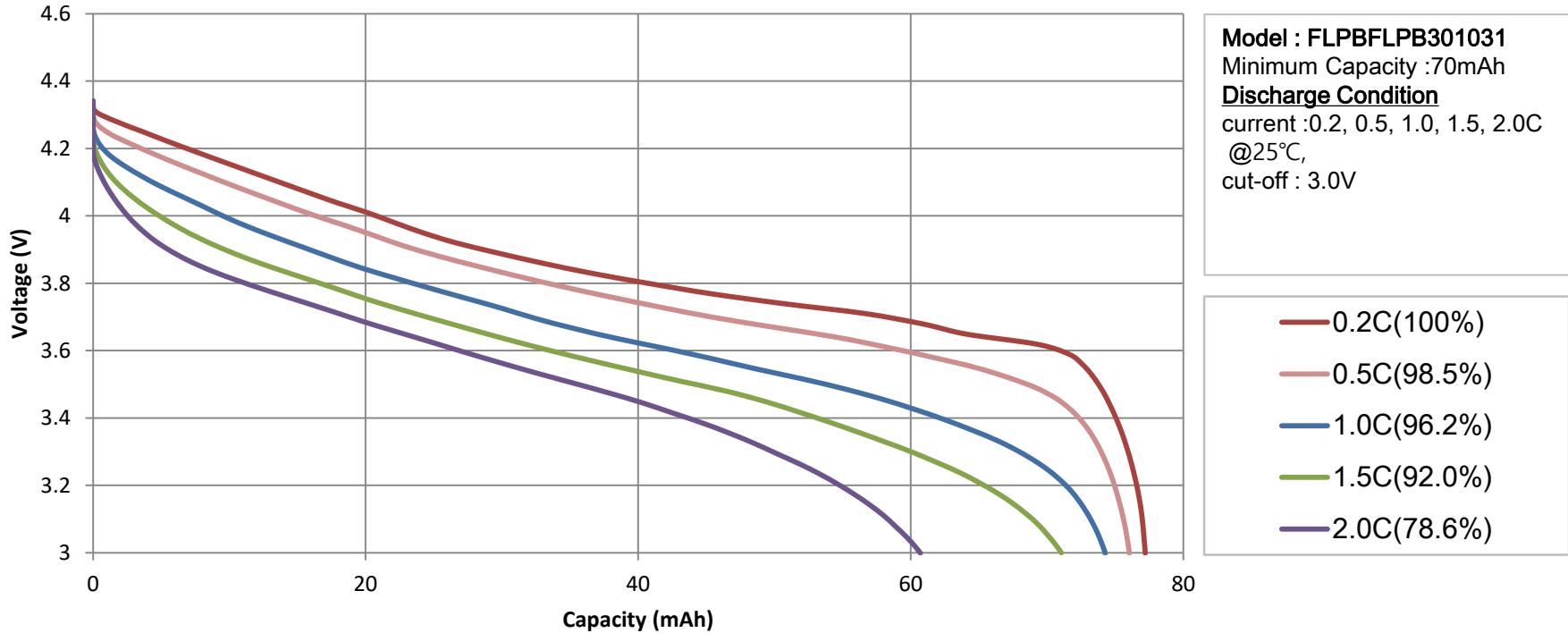
# 1. Charge Characteristics at 25°C

## Charge Characteristic at 25°C



# 2. Discharge Characteristics at 25°C

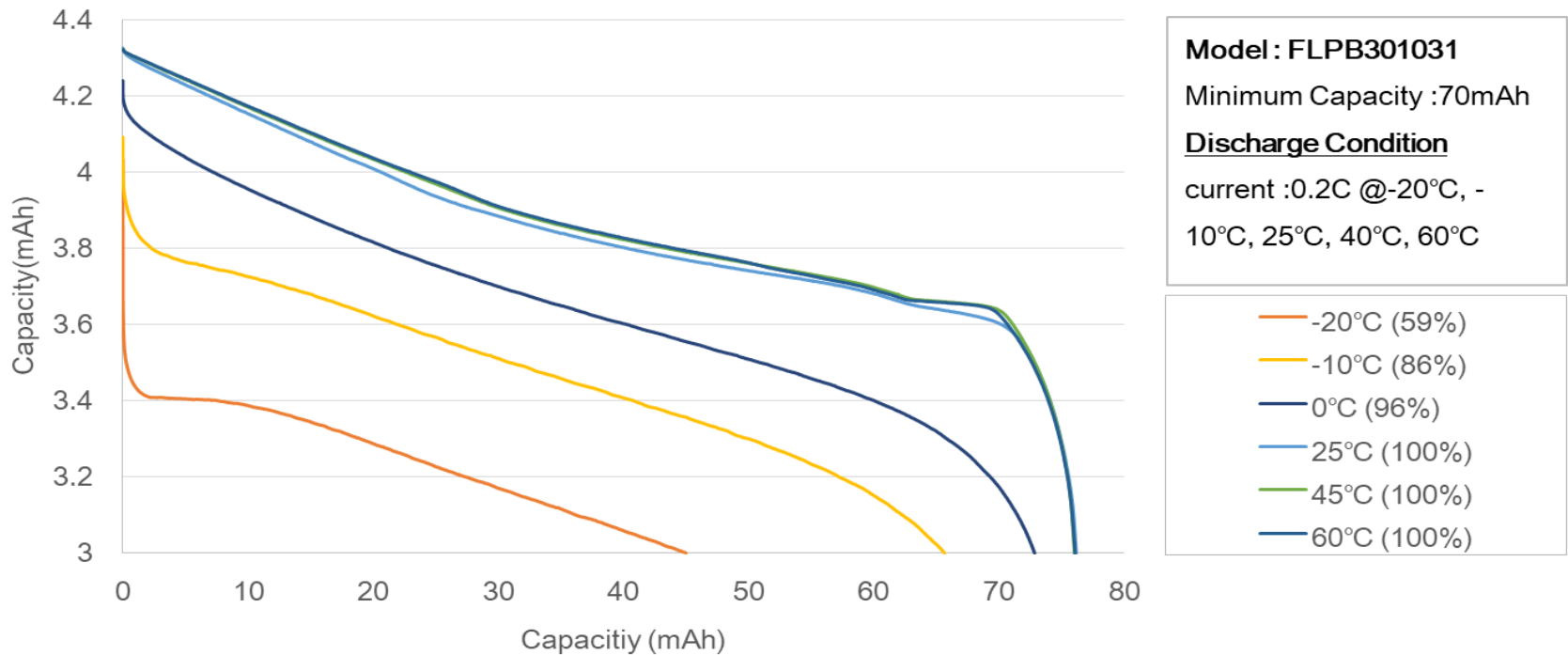
## Discharge Characteristics at 25°C



Model	0.2C	0.5C	1.0C	1.5C	2.0C
mAh	77.2	76	74.3	71.1	60.7
%	100%	98.5%	96.2%	92.0%	78.6%

# 3. Discharge Characteristics with Temperature

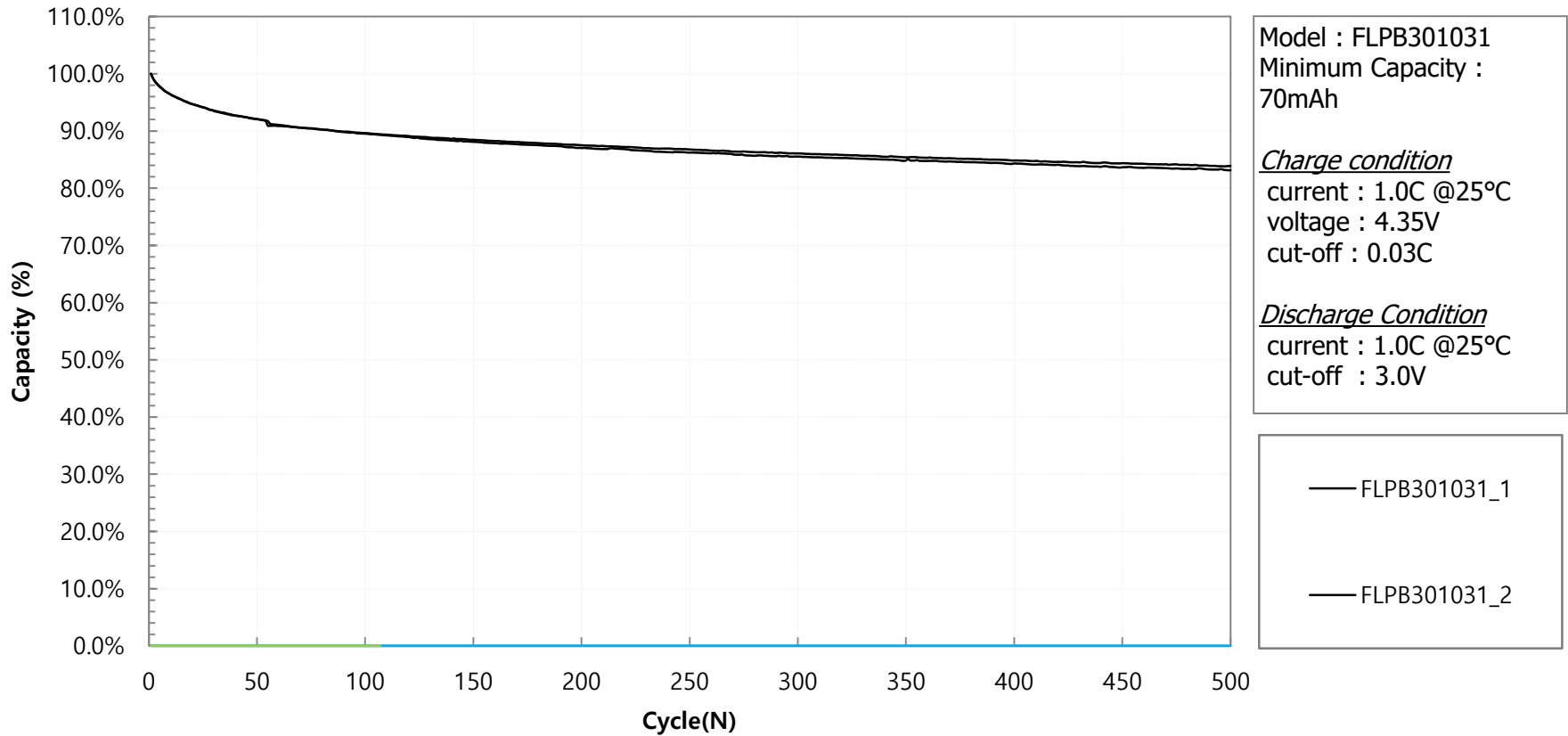
Discharge Characteristics with temperature



Model	-20°C	-10°C	0°C	25°C	40°C	60°C
mAh	45	66	73	76	76	76
%	59%	86%	96%	100%	100%	100%

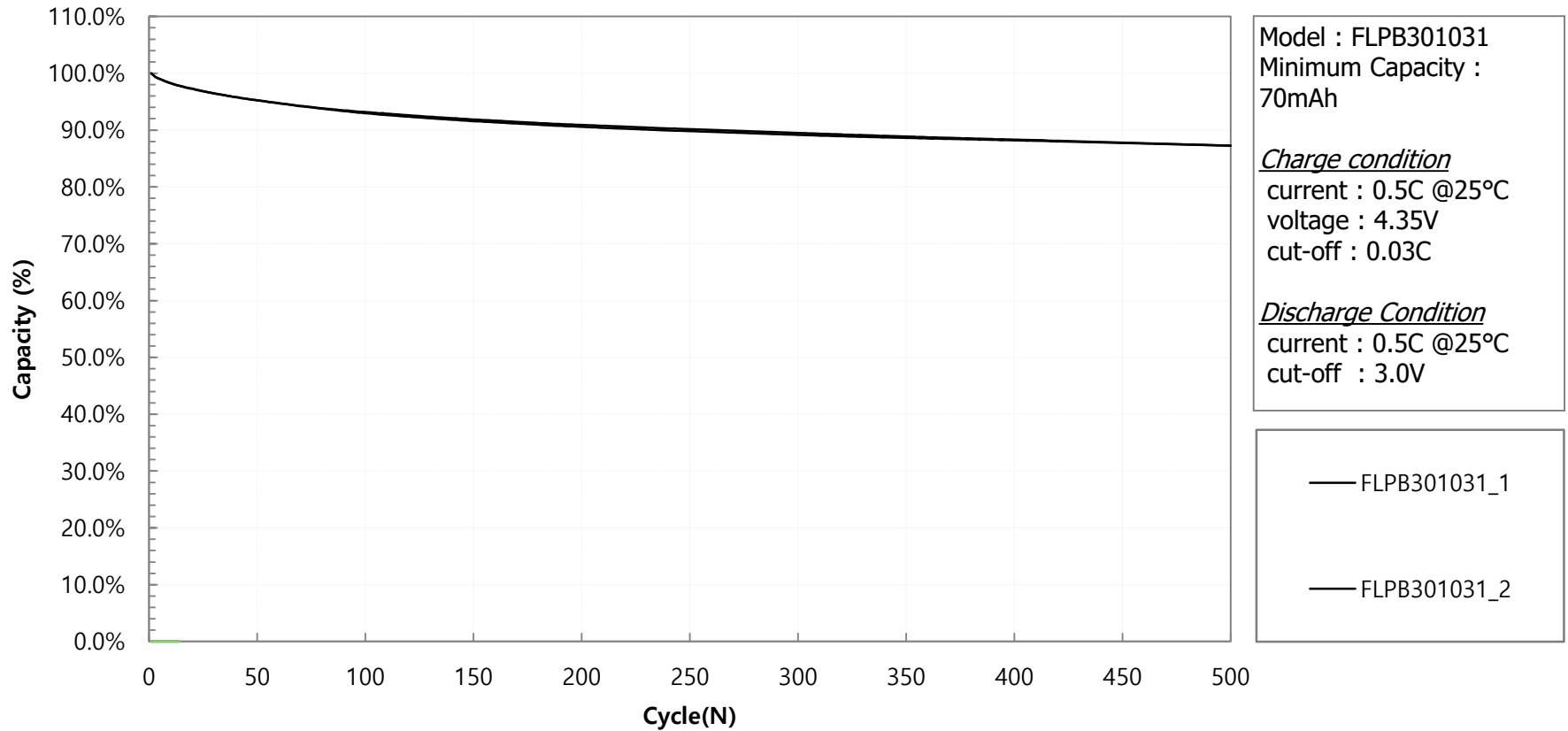


# 4-1. Cycle(1.0C/1.0C)



Test Condition	1C/1C at 25°C
%	83.2% @ 500th

# 4-2. Cycle(0.5C/0.5C)



Test Condition	0.5C/0.5C at 25°C
%	87.3% @ 500th

# 5. 60°C, 90%RH Storage Test

*\* Average of 5 samples.*

Category	Before storage	After storage	$\Delta$
Weight(g)	1.56	1.56	0%
Thickness, mm (at RT)	2.762	2.766	0.1%
Voltage(Vdc)	4.3339	4.2301	- 2.4%
Impedance(m $\Omega$ )	175	284	62%
Residual capacity (mAh)	76.10	61.81	81.2%
Recovery capacity (mAh)	76.10	69.10	90.8%

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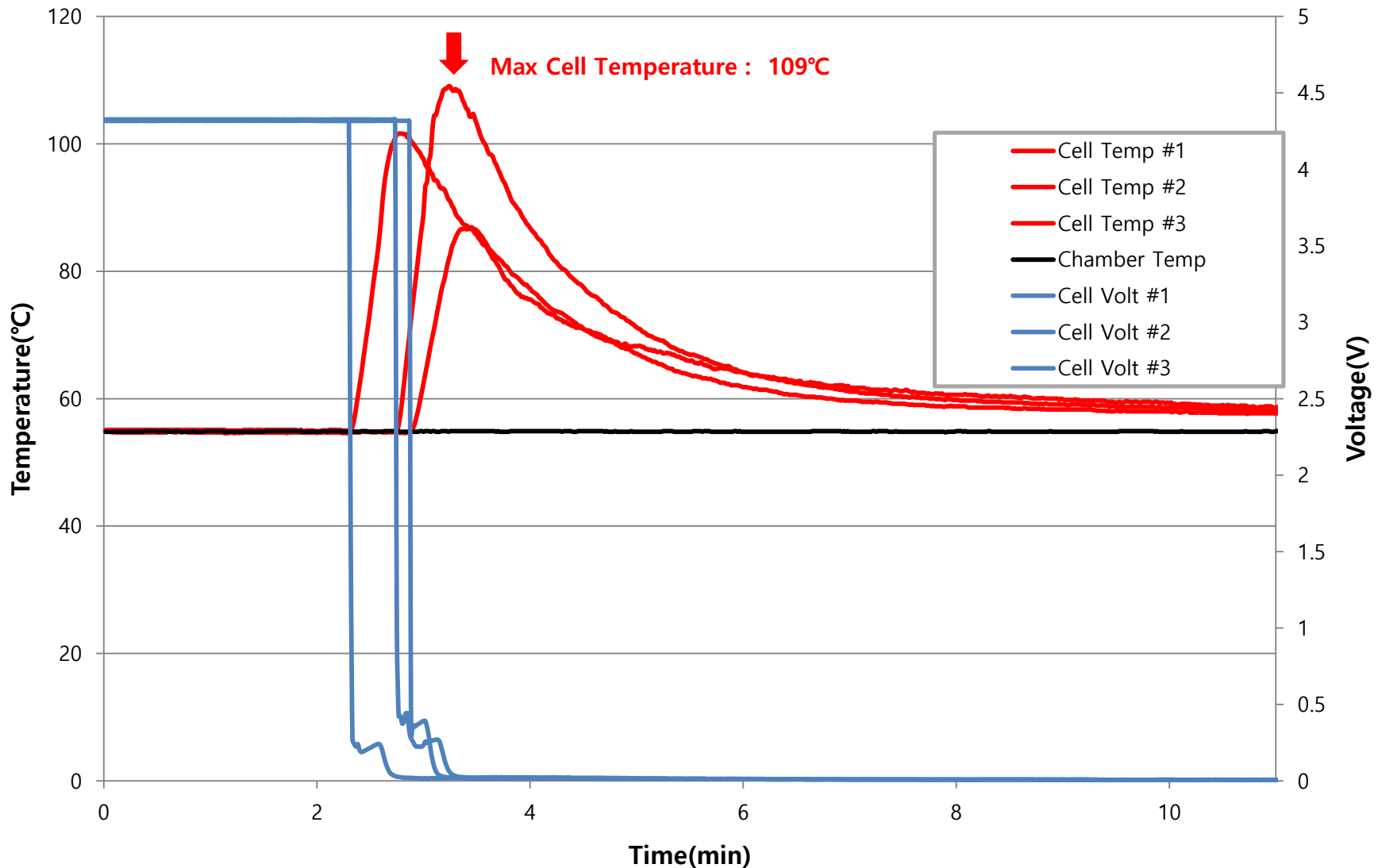
# III. BATTERY SAFETY TEST

1. Charge Characteristics
2. Discharge Characteristics
3. Cycle(1.0C/1.0C)
4. Cycle(0.5C/0.5C)
5. 60°C, 90%RH Storage Test

# III. Safety Test

No.	Test Name	Requirements(Criteria)	Result
1	55°C External Short Circuit (UL 1642)	No fire, No explosion, No venting. or cell temperature should not exceed 150°C.	Pass (NF, NE, NS) (Max Temp : 109.0°C)
2	Impact Test	No fire, No explosion.	Pass (NF, NE, NS) (Max Temp : 113.7°C)
3	Nail Penetration Test (RS C 0017)	No fire, No explosion No venting.	Pass (NF, NE, NS) (Max Temp : 86.3°C)
4	150°C Heating Test (5°C/min rate, 10min)	After cell temperature reaching at 150±2°C, No fire, No explosion No venting	Pass (NF, NE, NS) (Max Temp : 148.5°C)
5	Overcharge Test (5V, 3C)	No fire, No explosion No venting or cell temperature should not exceed 150°C.	Pass (NF, NE, NS) (Max Temp : 47.2°C)

# 1. 55°C External Short Circuit Test



# 1. 55°C External Short Circuit Test

**Before testing**

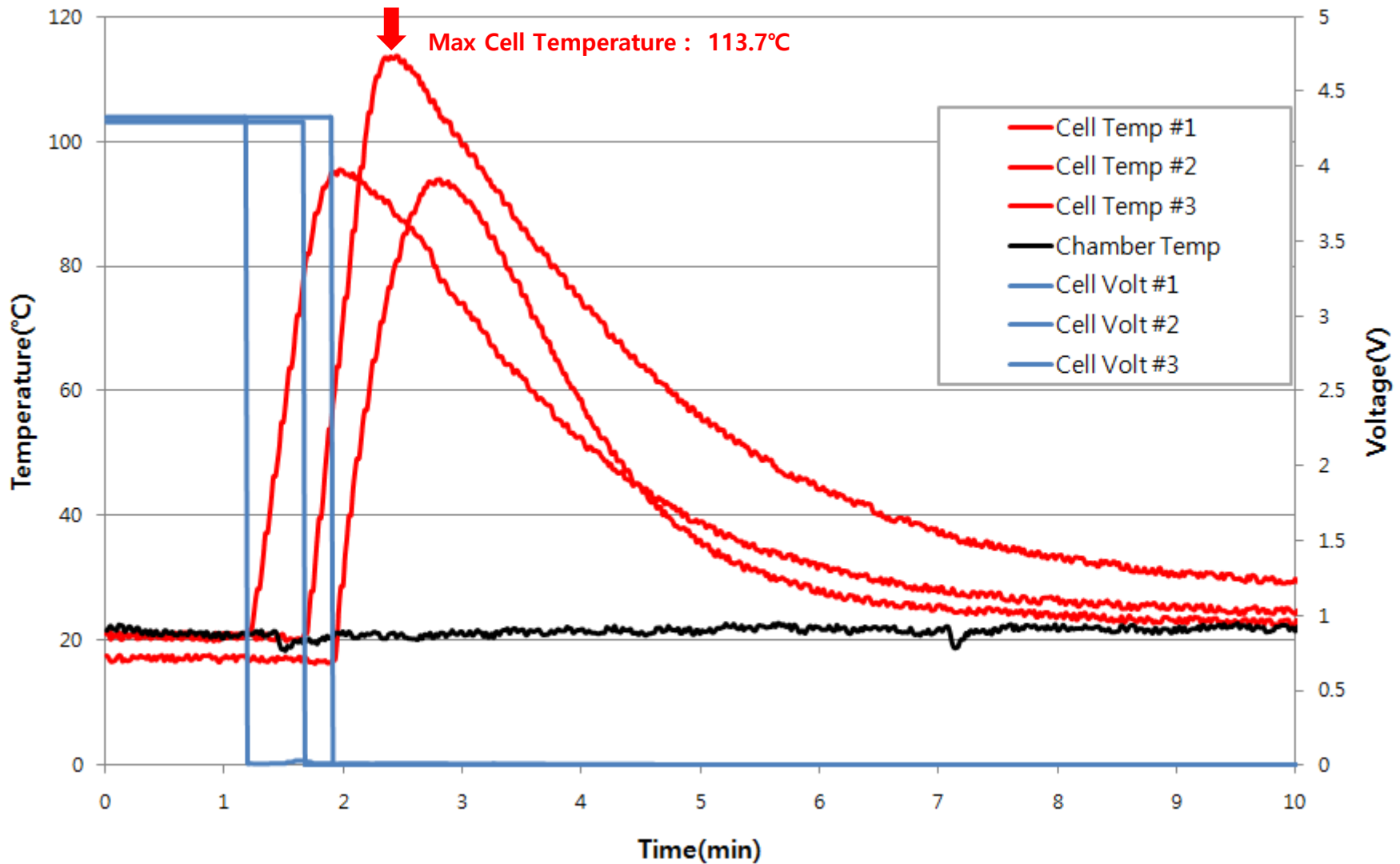


**After testing**



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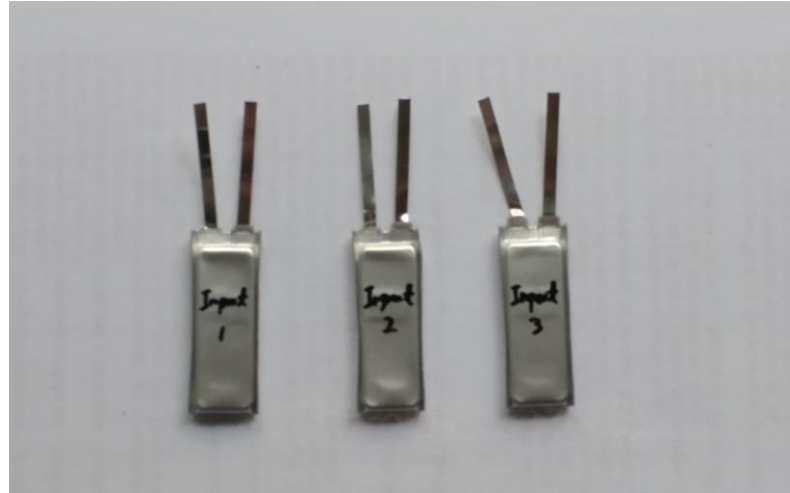
# 2. Impact Test



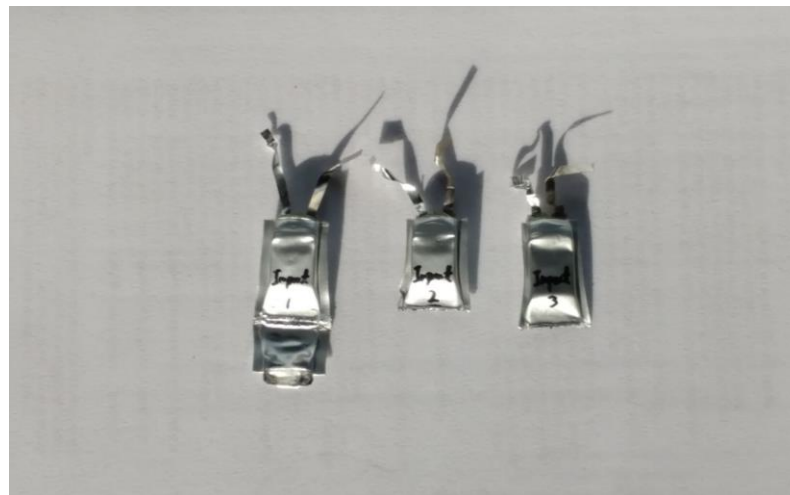


## 2. Impact Test

**Before testing**

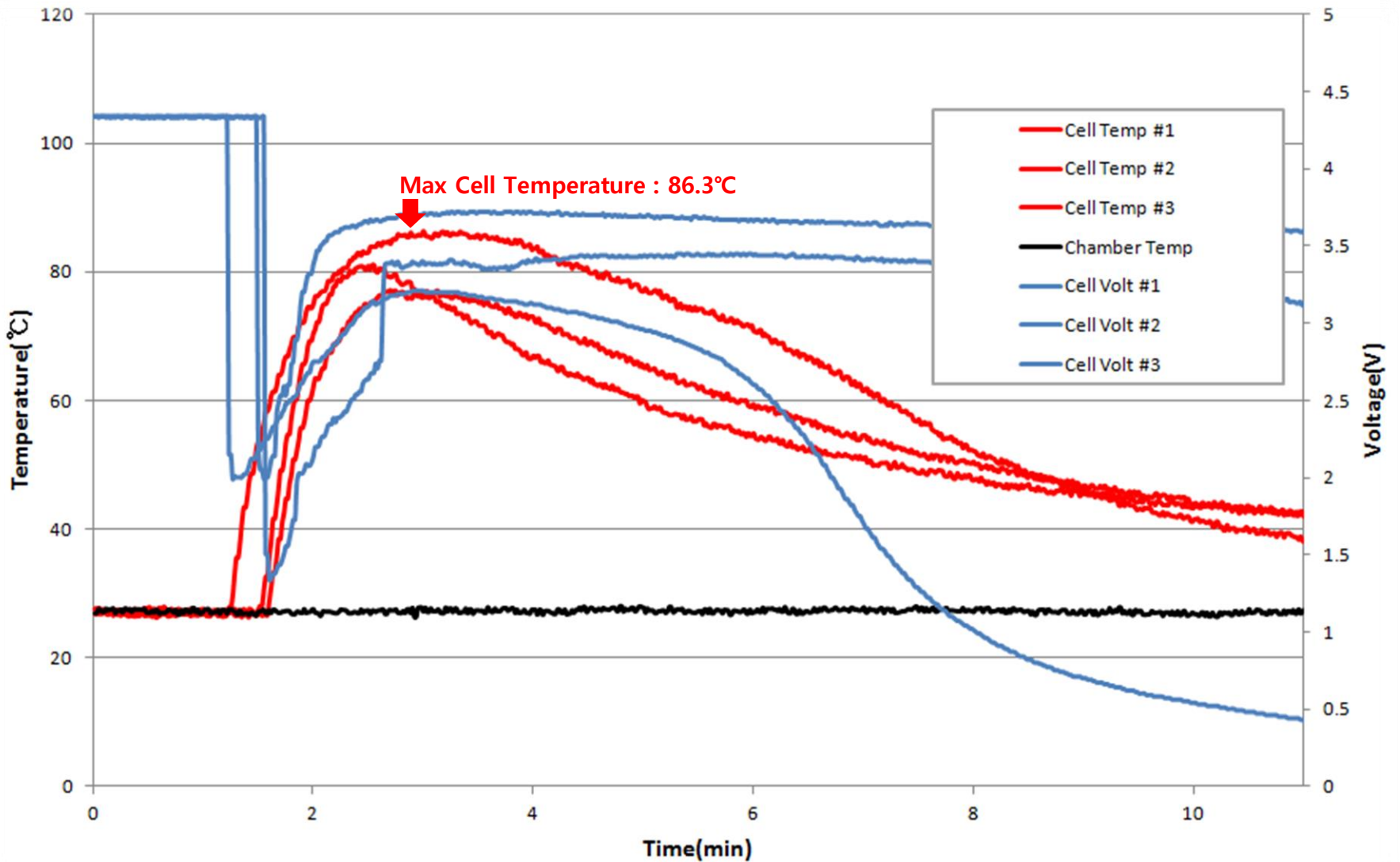


**After testing**



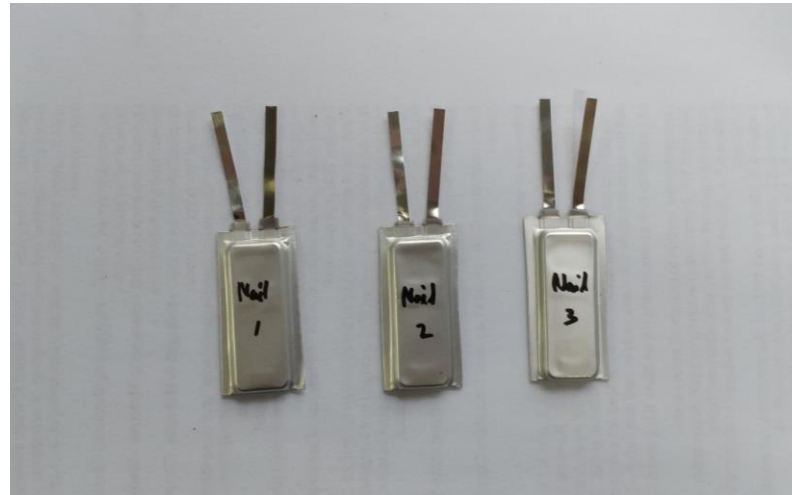
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# 3. Nail Test



# 3. Nail Test

Before testing

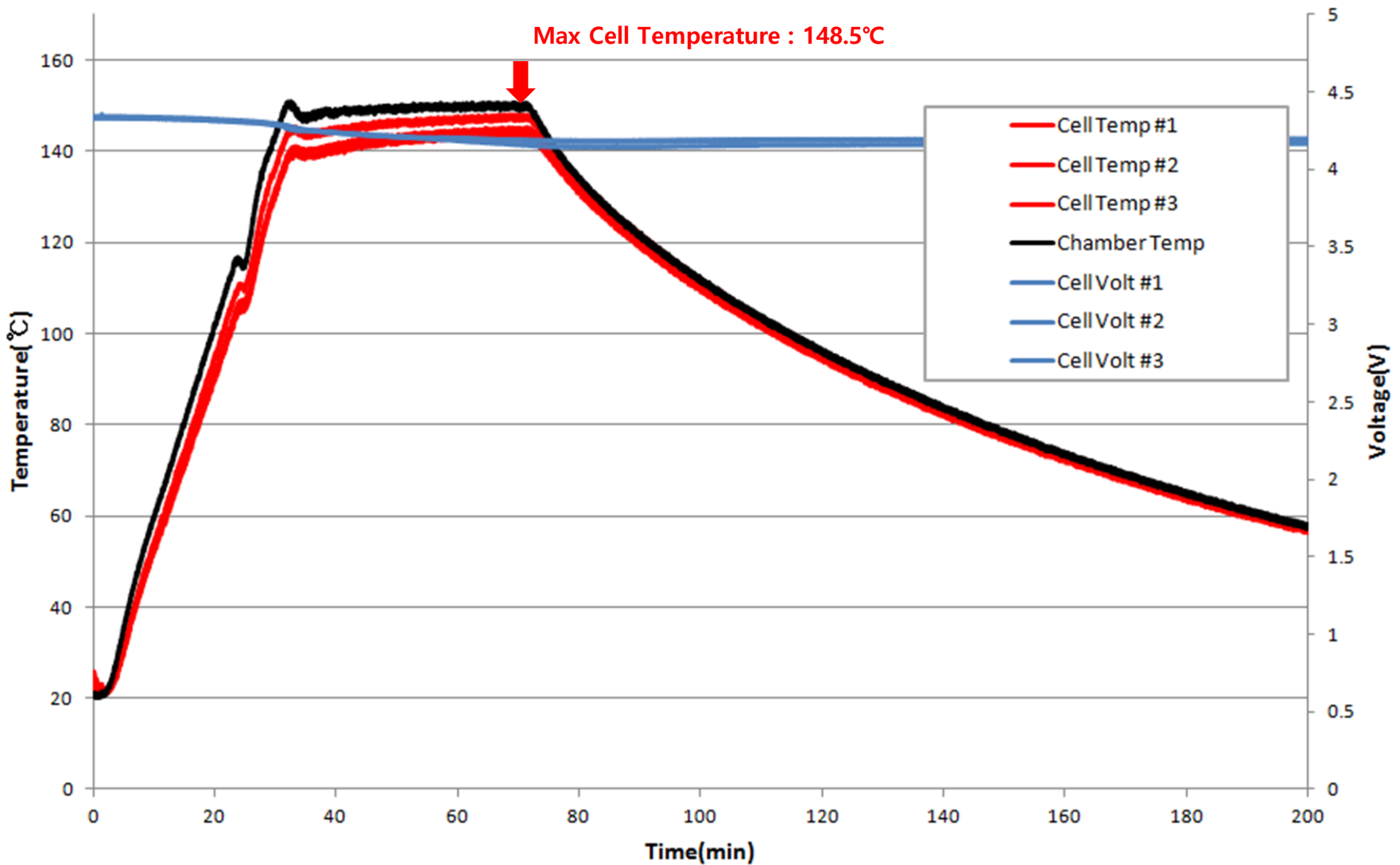


After testing



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# 4. 150°C Heating Test

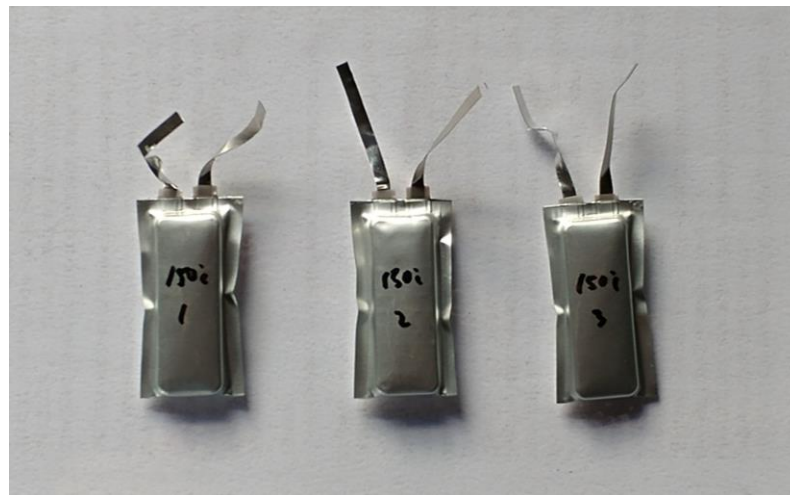


# 4. 150°C Heating Test

Before testing

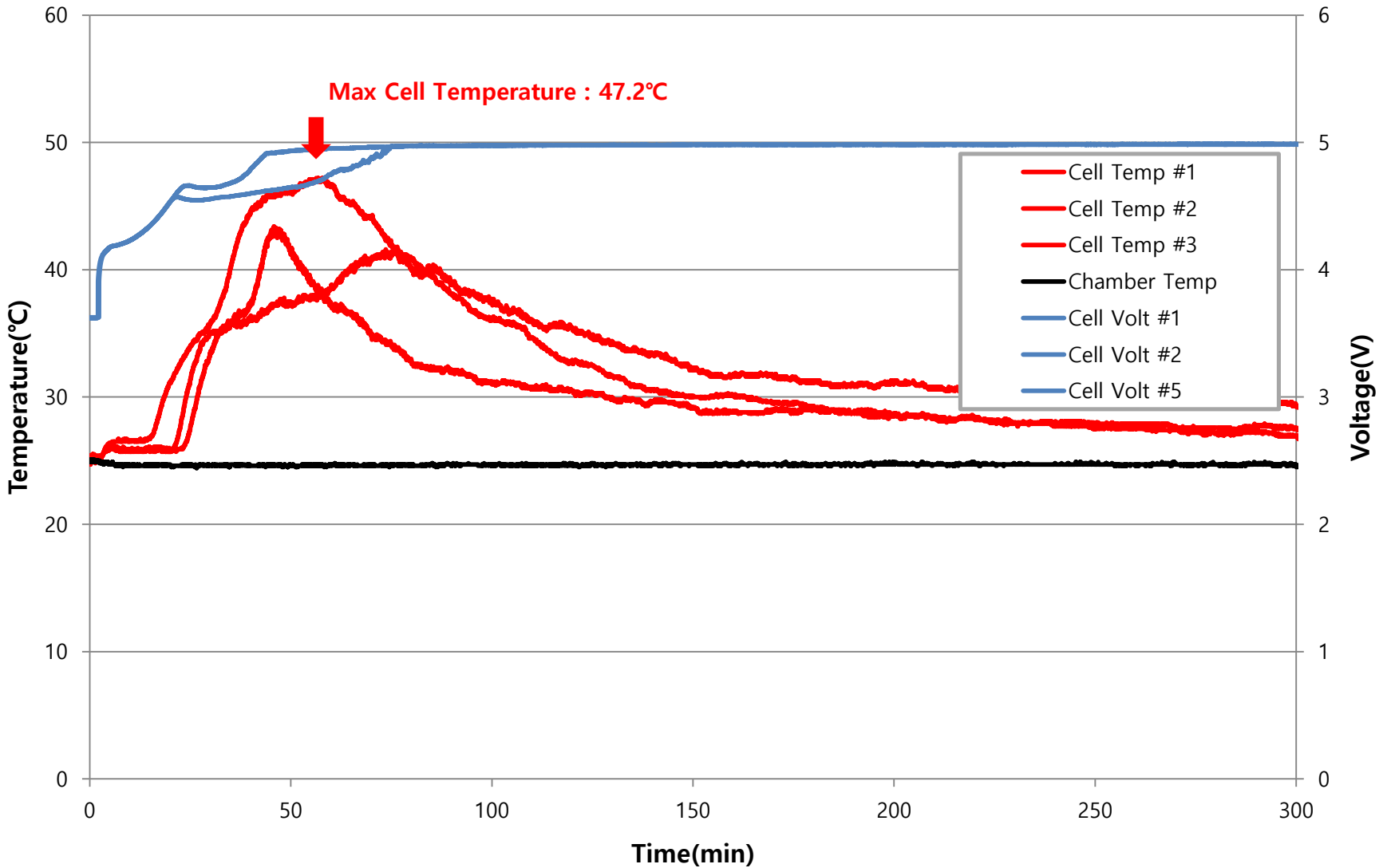


After testing



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# 5. 5V,3C Overcharge Test



# 5. 5V,3C Overcharge Test

**Before testing**



**After testing**



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