Introduction of 21700 50E

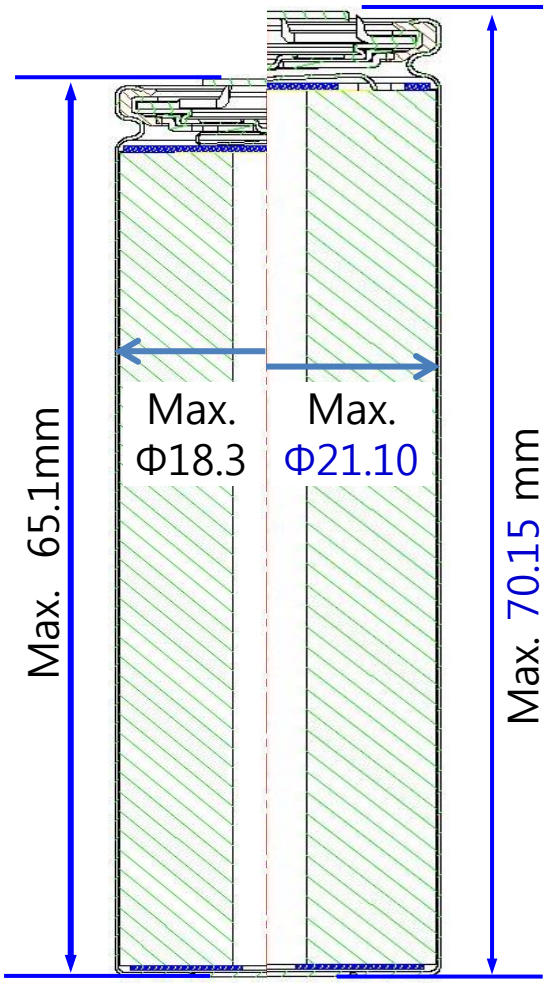
Aug. 2018

21700 50E _ Target Specification

Specification Items		21700-50E
PJT Timeline	SOP(Start of Production)	1Q. 2019
General	Typical Energy (4.2V, 0.2C discharge, Wh)	18.15
	Typical Capacity (4.2V, 0.2C discharge, mAh)	5,000
	Energy Density (Wh/L, Typical)	749
	Energy Density (Wh/kg, Typical)	267
	IR (AC 1KHz SOC30/ DC SOC50, 1C, 30sec, Typ., mΩ)	AC 14.5 / DC 31.0
	Weight (Max, g)	69.5
	Nominal Voltage (V)	3.63
Charge	Charging Voltage (V)	4.2
	Standard Charging Current	0.5C
	Max Charging Current	1.0C (4.9A)
Discharge	Discharging End Voltage (V)	2.5
	Standard Discharging Current	0.2C
	Max Discharging Current	2.0C (9.8A)
Life	Cycle Life (0.5C charge / 1.0C discharge)	80% @ 500cycle

* Target specifications are subject to change

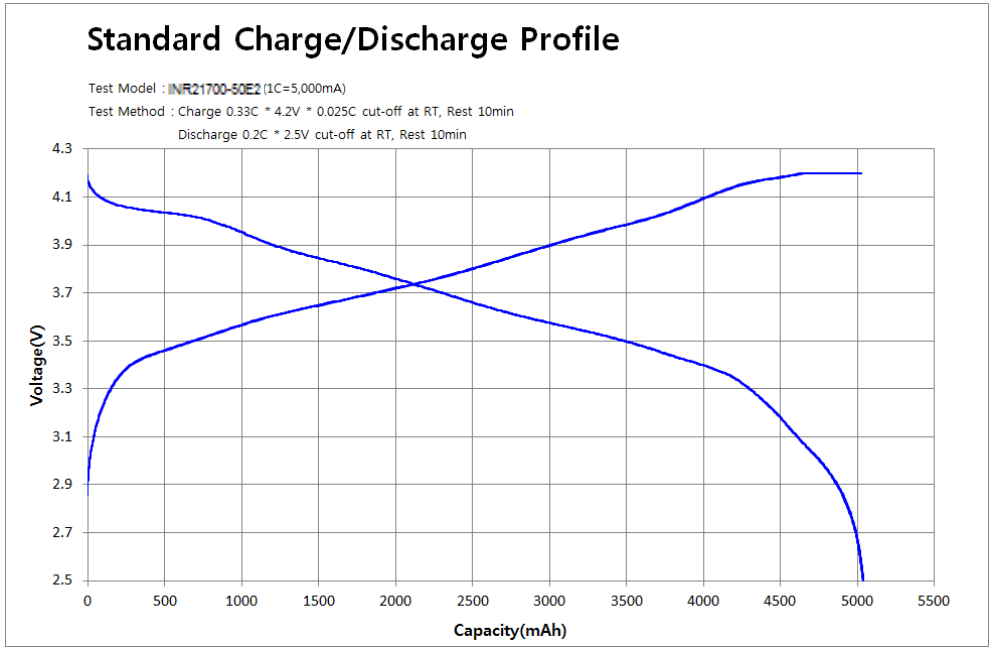
21700 50E _ Design Concept



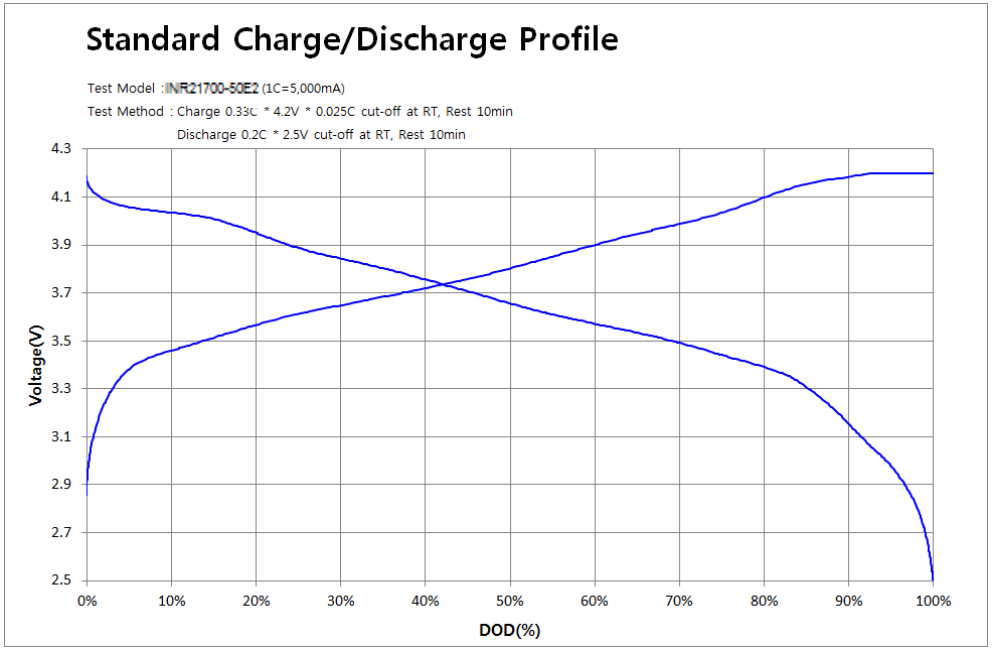
	21700-50E	Remark
Capacity	Typ. 5,000mAh (18.2Wh) Min. 4,900mAh(17.8Wh)	Charge: 0.33C 4.2V Discharge: 0.2C 2.5V
Tab	1P2N	
Cathode	NCA	High capacity
Anode	SCN+ Gr	fast charge & Storage *SCN: Silicon carbon Nanocomposite
Separator	CCS	
CID	S-CID	New development for 21700
Gasket	PBT	

21700 50E _ Standard Capacity

☐ Standard Charge/Discharge Profile @ RT



☐ DOD Profile @ RT



	Capacity	Energy	Average Voltage
Standard Capacity	5,000mAh	18.15Wh	3.63V

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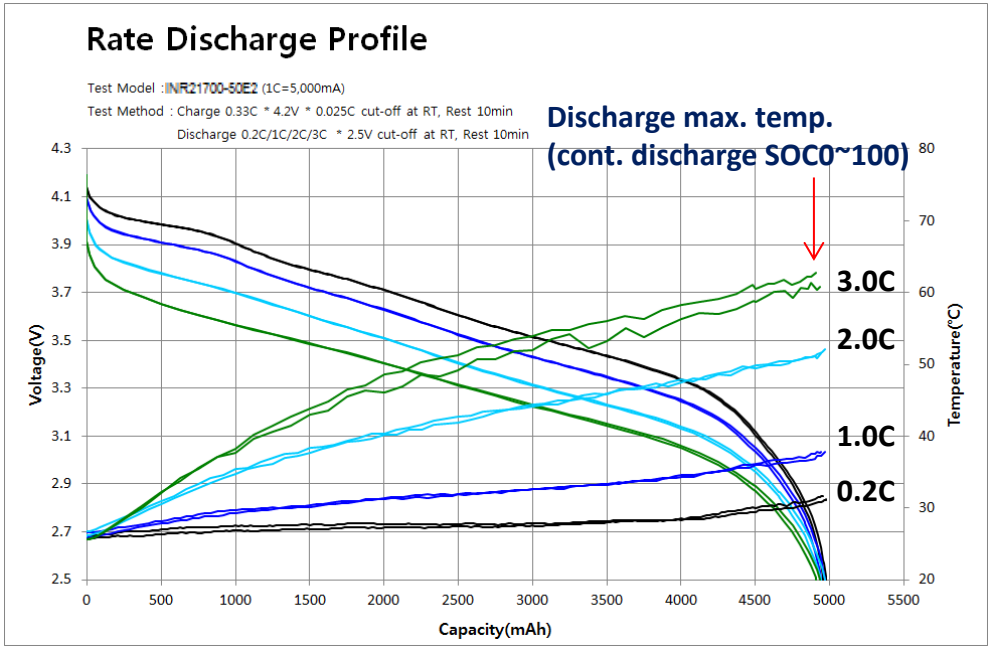
21700 50E _ DC IR / Discharge Performance

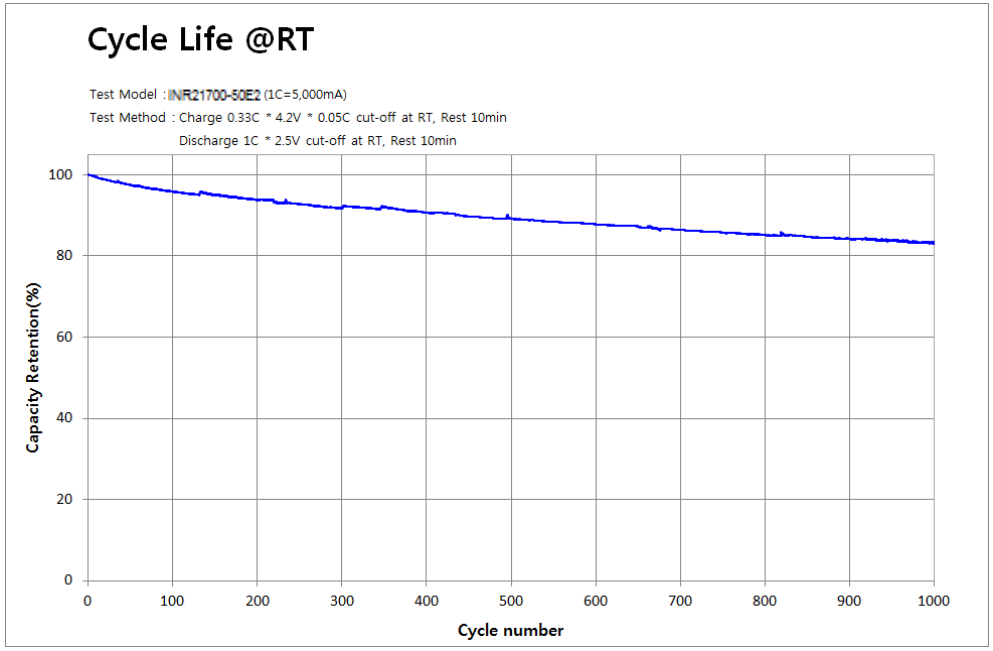
□ Discharge capacity w/ discharge rate @ RT



	1C	2C	3C
Capacity (vs. 0.2C)	99.8%	99.7%	99.1%
Max. Temp.	37.7℃	51.8℃	62.1℃

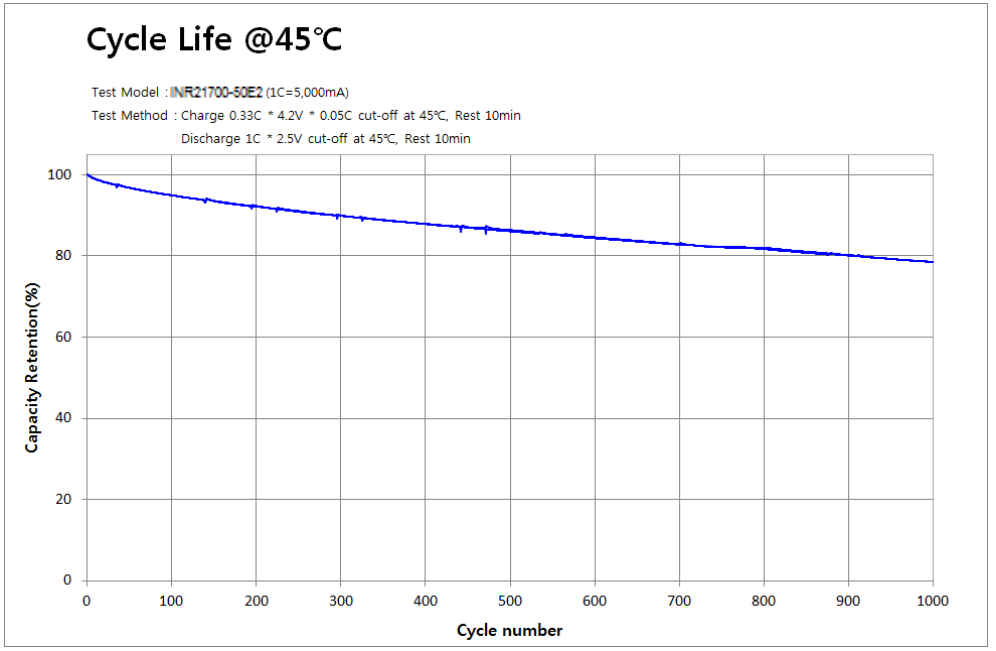
21700 50E _ Cycle Life

□ 0.33C 4.2V/1C 2.5V cycle life @ RT



@ RT	Capacity Retention
500cycle	88.4%

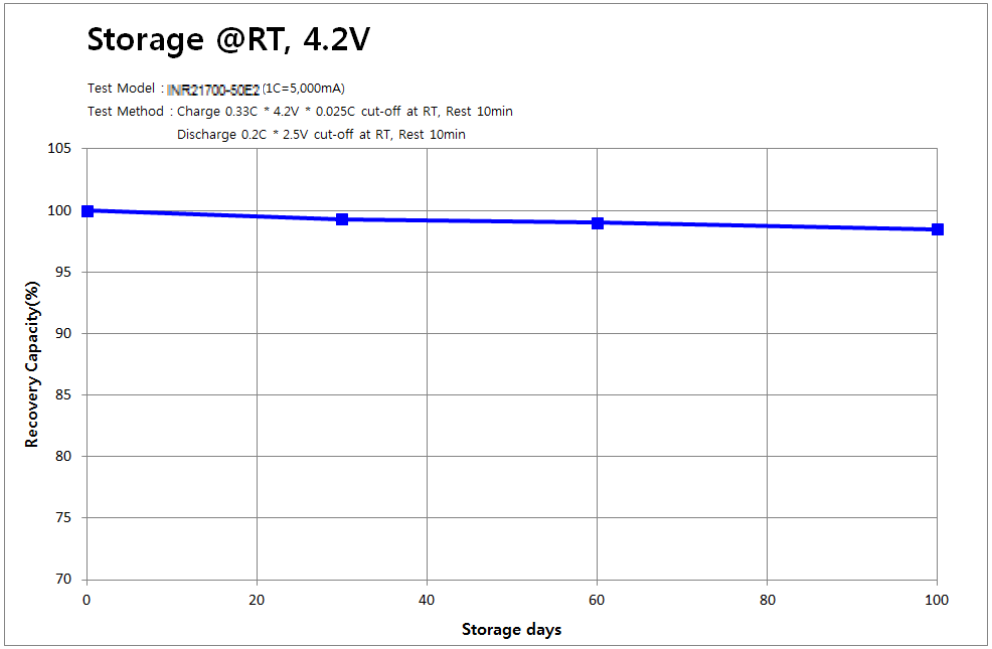
□ 0.33C 4.2V/1C 2.5V cycle life @ 45℃



@ 45℃	Capacity Retention
500cycle	85.5%

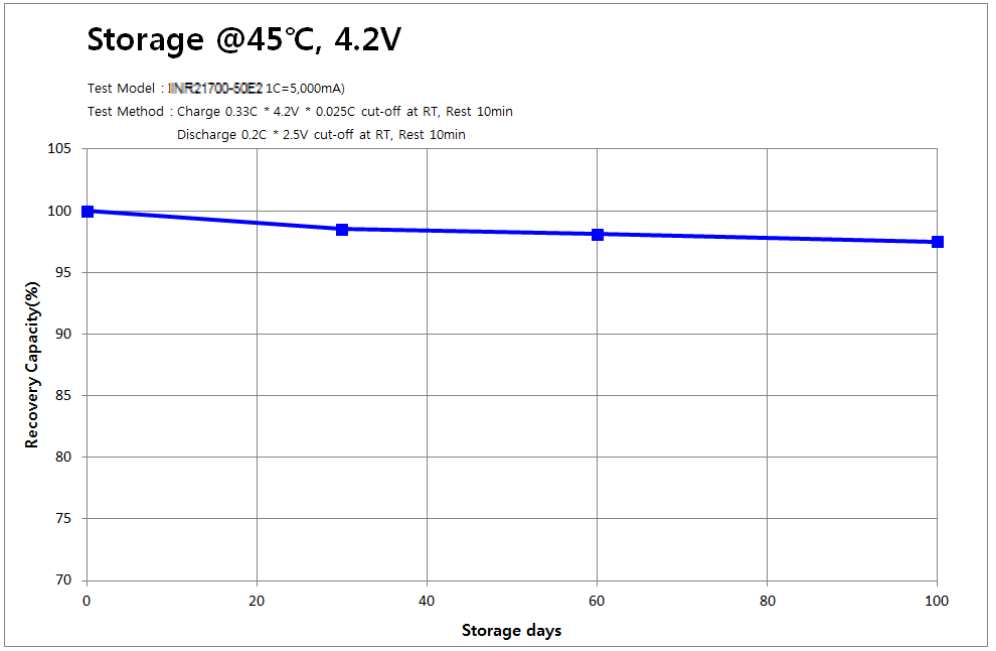
21700 50E _ Storage

☐ Storage(4.2V) @ RT



@ RT	Capacity Retention
30 days	99.3%

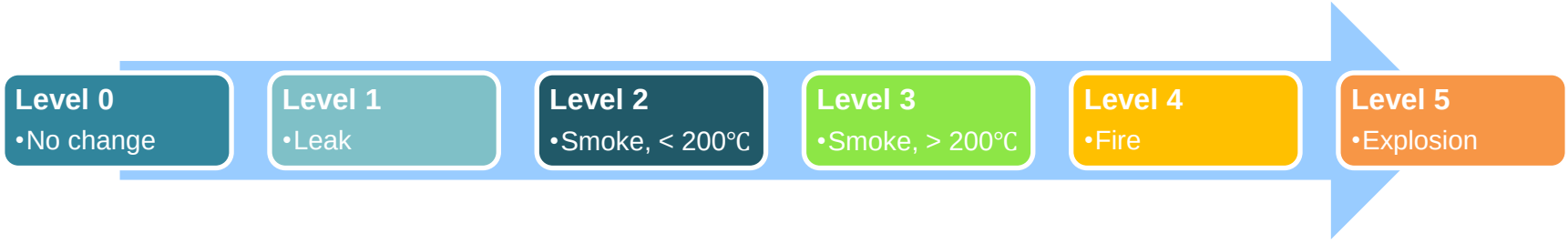
☐ Storage(4.2V) @ 45℃



@ 45℃	Capacity Retention
30 days	98.5%

21700 50E _ Safety

Test items			Spec.	Results	OK/NG	Remark
Electrical Abuse	Overcharge	SOC0, 3C 4.6V	L3	5L1	OK	UL
	Short circuit	5mΩ at 55℃	L3	5L0	OK	
		50mΩ at 55℃	L3	5L0	OK	
Mechanical Abuse	Impact	9.1kg 61cm ¢ 15.8 SOC 50	L3	10L0	OK	UN38.3
	Crush	13kN	L3	5L1	OK	UL
Thermal Abuse	Heating	130℃ 1hr	L3	5L1	OK	UL



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