



Technical Information of INR 21700 M50LT

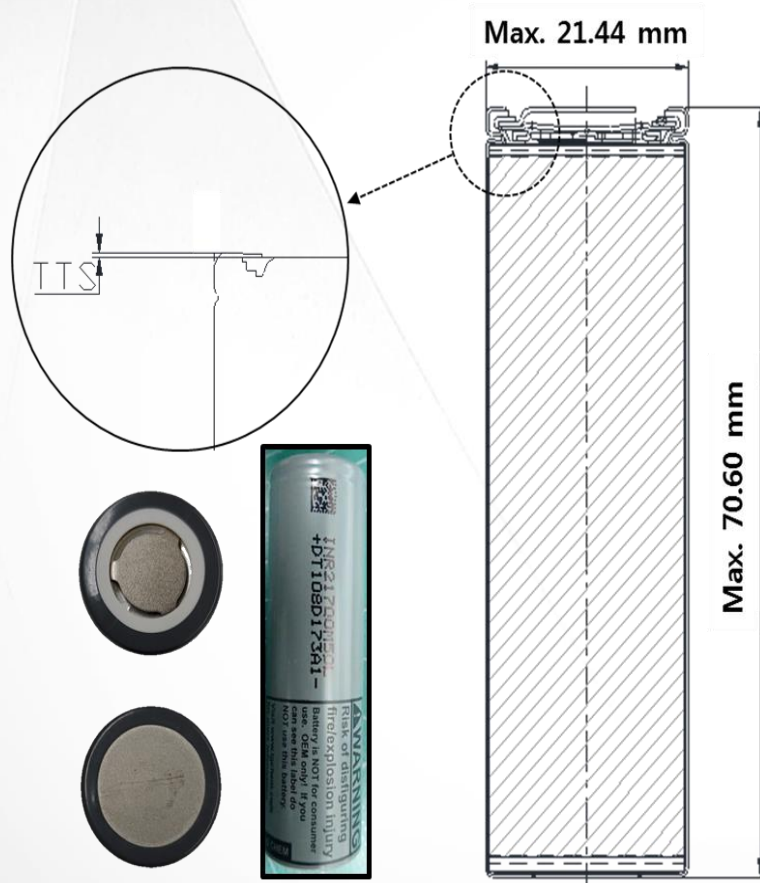
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July 21, 2020

1. General Information

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INR 21700 M50LT		
0.2C Energy *	Nominal	18.2 Wh
	Minimum	17.6 Wh
Dimensions with tubing	Diameter	Max. 21.44 mm
	Height	Max. 70.60 mm
	TTS(Top to shoulder)	0 +0.00/-0.55 mm
Weight		Max. 69.2 g
Nominal Voltage		3.69 V
Initial Impedance	AC-Resistance(1kHz), SOC30%	15 ± 6 mΩ
	DC-Resistance	23 ± 6 mΩ

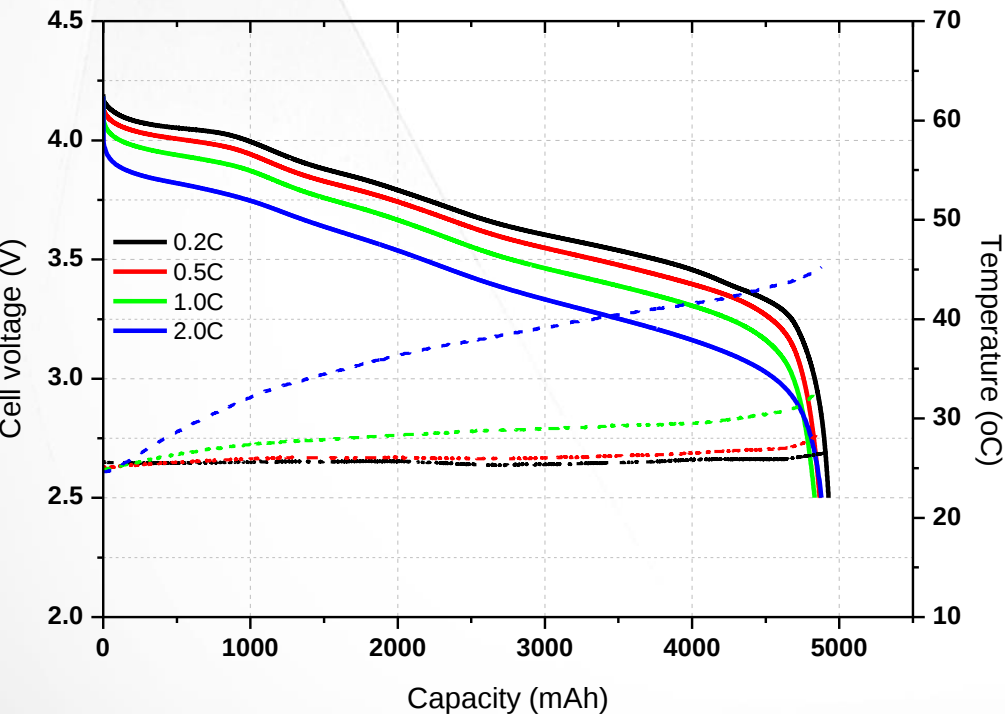
* Charge : 1440mA, 4.20V, 50mA End-current (CC-CV)
Discharge : 960mA, 2.50V End-voltage (CC)

** DCR measurement : SOC 50%, 0.5C ,10sec. Discharge Resistance

2. Discharge Characteristics

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Voltage and Temperature Profile at 25oC

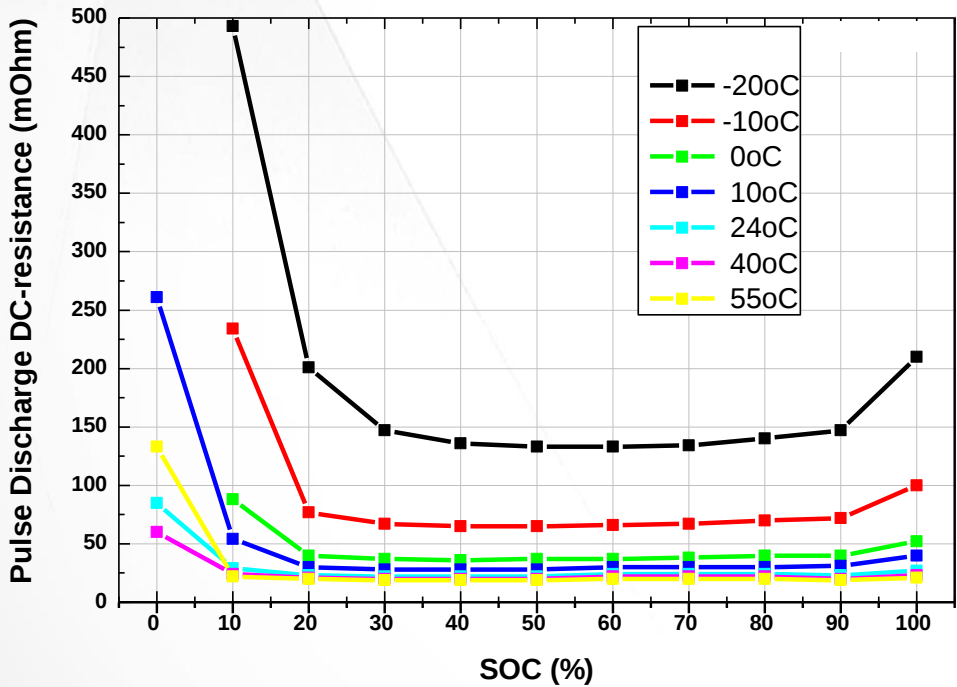


C-rate	mAh	%	Wh	%	Max Temp(oC)
0.2	4927	100.0	18.20	100.0	27
0.5	4866	98.8	17.75	97.5	29
1.0	4832	98.1	17.26	94.8	32
2.0	4879	99.0	16.79	92.2	45

Test Condition
Charge : CC-CV, 0.3C, 4.20V end-current 50mA, 25°C
Discharge : CC, each c-rate, 2.50V cut-off , each temperature., 1 C-rate : 4.8A

3. 10sec. DCR for Discharging

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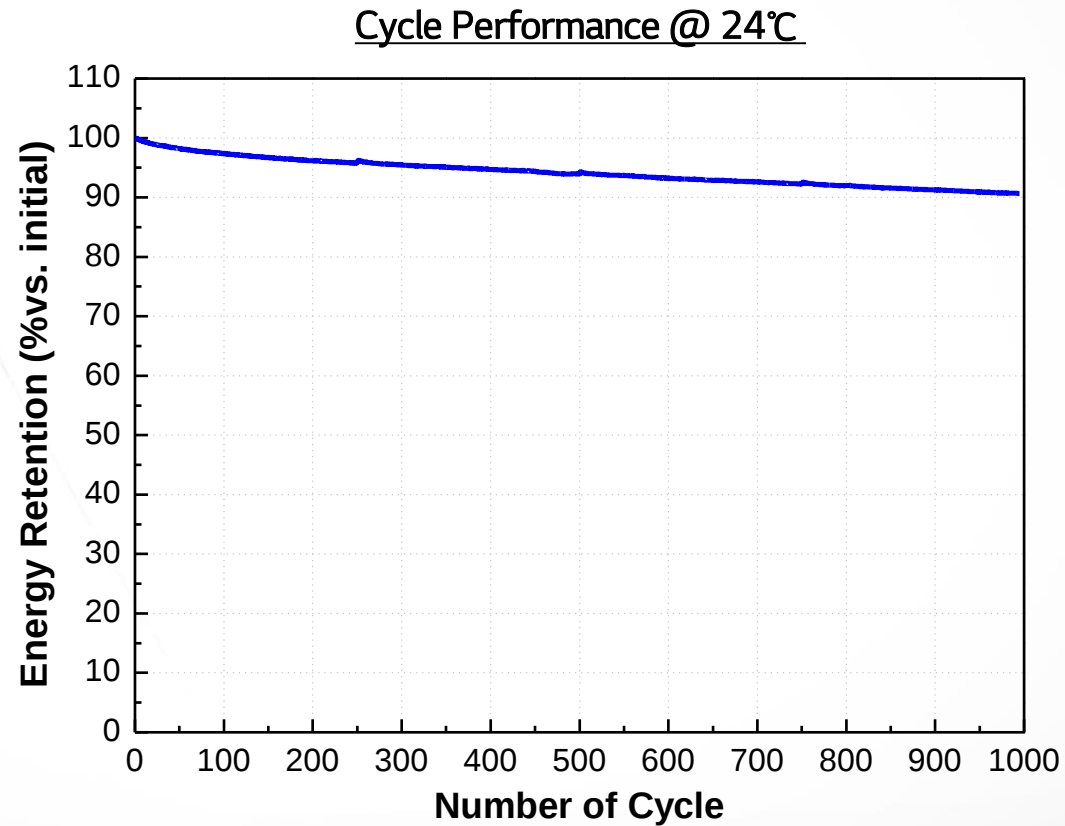
SOC (%) \ Temp. (°C)	0	10	20	30	40	50	60	70	80	90	100
-20 °C	-	493	201	147	136	133	133	134	140	147	210
-10 °C	-	234	77	67	65	65	66	67	70	72	100
0 °C	363	88	40	37	36	37	37	38	40	40	52
10 °C	261	54	30	28	28	28	30	30	30	31	40
24 °C	85	29	23	22	22	22	24	24	24	23	27
40 °C	60	24	21	20	20	20	22	22	22	20	23
55 °C	133	22	20	19	19	19	20	20	20	19	21

Test condition

- Discharge Pulse: C/2 for 10 sec
- Pulse repeated every 10% SOC

4. Cycle Life

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Test Condition

Charge : CC-CV, 0.3C, 4.10V, 1/20C cut off , 25°C

Discharge : CC, 0.5C, 2.85V cut off 25°C

5. Safety Features

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Test	Test Condition	Requirement	Result	
			OK	P/F
External Short Circuit	Cells are charged and the positive and negative terminal is connected by a less $80 \pm 20 \text{ m}\Omega$ -wire at 55°C .	NF,NE	5	OK
Hot Box	Charged cell is heated in a circulating air oven at a rate of $5^\circ\text{C}/\text{min}$ to 130°C . At 130°C , oven is to remain for 10 minutes before test is discontinued.	NS,NF,NE	5	OK
Over Charge	Cells are charged 1.0C to 6.3V or 1h at 25°C .	NF,NE	5	OK
Crush	The flat surfaces are to be brought in contact with the cells and the crushing is to be continued until an applied force of $13 \pm 1 \text{ kN}$ ($3000 \pm 224 \text{ lbs}$) is reached.	NF,NE	5	OK
Impact	A $15.8 \pm 0.1\text{-mm}$ ($5/8 \pm 0.004\text{-in}$) diameter bar is to be placed across the center of the sample. A $9.1 \pm 0.46\text{-kg}$ ($20 \pm 1\text{-lb}$) weight is to be dropped from a height of $610 \pm 25 \text{ mm}$ ($24 \pm 1 \text{ in}$) onto the sample(SOC50%).	NF,NE	5	OK
Thermal Shock	Boundary Test, Fresh Cell, 50 Cycled cell [$72 \pm 2^\circ\text{C}$, 6hr $\leftrightarrow$ $-40 \pm 2^\circ\text{C}$, 6hr, interval max. 30min] x 10cycle Storing at $20 \pm 5^\circ\text{C}$ for 24h	NF,NE,NL, $\Delta V \leq 10\%$	5	OK