

Engineering Data Sheet (C-Sample Status) Ultra-High Power Li-ion cell V21700UHP-26

FEATURES

- NMC622/Graphite electrochemistry
- Very low R_{iAC} , R_{iDC}
- High specific Energy
- Very high specific power
- Very high power capability
- Long cycle life
- Width temperature range
- Fast charge capability
- Very good efficiency



SPECIFICATIONS

No.	Item	V21700 UHP-26	Unit
1	Nominal Voltage ($U_{nom} = Dch \text{ Energy} / Dch \text{ Cap}$)	3.7	V
2	Standard Charge: CC-CV, 4.2 V/1C, cut-off @ 0.05 A	4.2	V
3	Fast Charge: CC 4.2 V/ 8C to 80%, > 25 °C, BOL	< 6	min
4	Operating Temperature <small>Note: reduced charging Rate up to 15 °C</small>	-25 to +65	°C
5	Max. cut off cell temperature	80	°C
6.1	Std. Capacity CN; standard charge @25 °C discharge 0.2 C to 2.5V	2.6	Ah
6.2	Std. Capacity CN; standard charge @25 °C discharge 1 C to 2.5V	2.56	Ah
7	Typical 10C Discharge Capacity @25 °C to 2.0 V cut off voltage	95	% CN
8	Internal resistance R_i (DC) SOC 50% 10 s-10 A @ 25 °C	~ 8	mΩ
9	Impedance (AC 1 kHz) SOC 30% @25 °C	~ 3	mΩ
10	Max. charge current (cont.) CC-CV 4.2 V cut off @0.05C cont. >25 °C BOL	25	A
11	Max. charge current (Pulse) @ 50% SOC and 25 °C (< U_{max} after 10 sec)	50	A
12	Max. discharge current (cont.) @25 °C to T_{max} -operation	80	A
13	Max. discharge current (Pulse) 5 - 10 s @50% SOC and 25 °C With $U > 2$ V	100	A
14	Max. discharge current (Pulse) 5s @30% SOC and -25 °C With $U > 2$ V	10	A
15	Cycle life 1C/1C 0-100%, 25 °C, SoH=>80%	> 2,500	cycle
16	Cycle life 1C/1C 0-100%, 45 °C, SoH=>80%	> 1,800	cycle
17	Cycle life 1C/20C 0-100% DoD, 25 °C SoH=>80%	> 800	cycle
18	Cycle life 3.5C/3.5C 30-90% DoD 45 °C, SoH=>80%	> 3,600	cycle
19	Cycle Life 4C/1C 10-80%, 25 °C, SoH =>80%	> 500	cycle
20	Cycle life 1C/3.5C 30-90% DoD -10 °C, SoH=>80%	> 2,500	cycle
21	Weight	~ 0.069	kg
22	Volume	0.024	l
23	Max. Stored Energy	9.25	Wh
24	Max. Specific Power (grav.)**	~ 6,000	W/kg
25	Max. Specific Power (vol.)**	~ 17,000	W/l
26	Specific Energy	~ 140	Wh/kg
27	Energy density	~ 400	Wh/l
28	Calendar life 100%SOC, 60 °C, 30 days, recoverable capacity DCIR < 115%	90	% CN

**Calculated P by $U_{max} * I_{max}$ per unit mass or volume