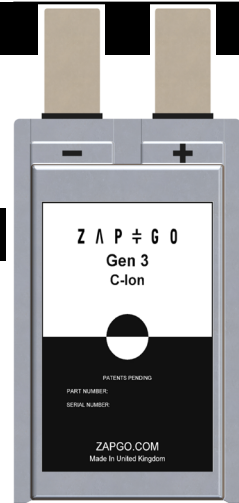


Carbon-Ion (C-Ion): new generation ultra-fast charging devices based on nano-carbon technology

PART NUMBER: G3.4-1500-14.70.122

Pouch cell construction
Flat aluminum tabs designed for high current use



EXAMPLE APPLICATIONS

- Power tools
- Cordless cleaning appliances
- Vehicle emergency start packs
- Electric & Hybrid vehicles
- Personal Transport

KEY FEATURES



ULTRA-FAST
charge time



LONG LIFE
of over 100,000 cycles



SAFE
to use & transport

SPECIFICATION

Electrical Parameters

Rated Voltage, V^T	3.4 V
Maximum Voltage¹	3.5 V
Rated Capacitance²	1500 F
Capacitance Tolerance	+/-10%
Maximum ESR³_{DC}	3.5 mOhm
Typical ESR³_{DC}	3.0 mOhm
Test Current for Capacitance and ESR_{DC}	20 A
Maximum Peak Current, 1 second (non-repetitive)⁴	460A
Leakage Current, maximum⁶ (passive voltage balancing system)	5 mA
Short Circuit Current, typical	1000A

Temperature

Operating Temperature (ambient temperature)	-20°C to +60°C
Storage Temperature (stored discharged)	-20°C to +70°C

Performance data is provided for guidance purposes and should not be relied on. Actual performance may vary.

Life

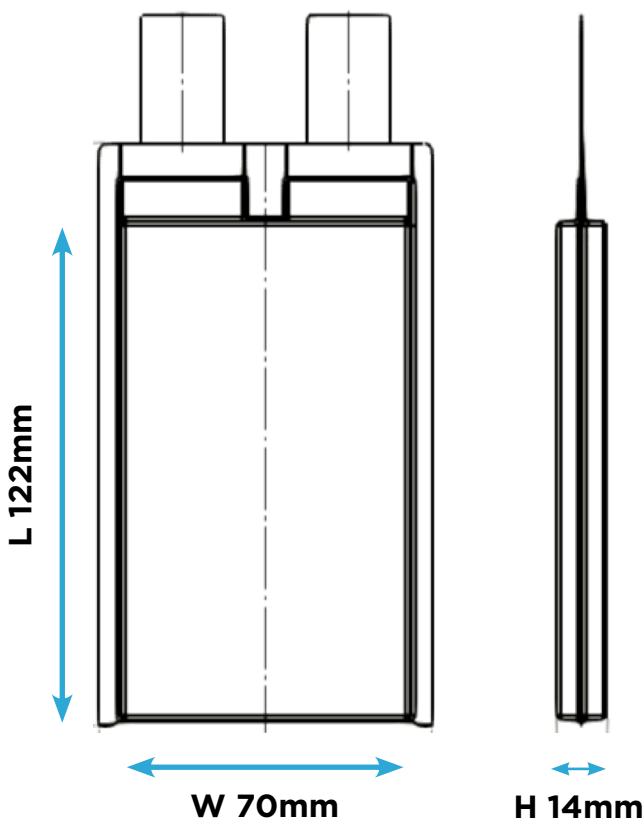
High Temperature (at Rated Voltage and Maximum operating temperature)	1500 Hours
Room Temperature (projected life at rated voltage and 25 °C)	10 Years
Cycle Life (Rated Voltage - Half Voltage, Test Current 10A, at 25 °C)	>100,000 Cycles
Shelf Life (stored discharged up to a Maximum Storage Temperature)	4 Years

Power & Energy

Specific Energy, E_{\max}^6	13.4 Wh/kg
Stored Energy⁷	2.4 Wh
Usable Specific Power, P_d^8	2.4 kW/kg
Maximum Specific Power (matched impedance), P_{\max}^9	4.7 kW/kg

C-Ion Cell Dimensions and Physical Parameters

L, mm	W, mm	H, mm	Mass, g
122	70	14	180



NOTES

- Maximum voltage non-repeated, not to exceed 5 seconds
- Capacitance measured at 25 °C as per IEC 62391-1
- ESR_{DC} measured at 25 °C as per Maxwell Technologies test procedure specified in the document #1007239
- Maximum peak current (discharge from V_r to $V_r/2$ per 1 second):

$$I_{\max} = \frac{CV_r}{2(C \times ESR_{DC} + 1)}$$
- After 72 hours at 20 °C and rated voltage as per IEC 62391-1. Initial leakage current can be higher
- $E_{\max} = \frac{CV^2}{2 \times 3600 \times \text{mass}}$
- $E_{\text{stored}} = \frac{CV^2}{2 \times 3600}$
- As per IEC 62391-2: $P_d = \frac{0.125V^2}{ESR_{DC} \times \text{mass}}$
- $P_d = \frac{0.25V^2}{ESR_{DC} \times \text{mass}}$

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