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**Preliminary Data Sheet – CP1654 A4X (CoinPower®)<sup>1</sup>**

<b>Type Designation</b>	CP1654 A4X
<b>Type Number</b>	63165
<b>VKB Number</b>	63165 401 511
<b>Cell Code</b>	INR1654
<b>System</b>	Graphite – layered metal oxide (LiNi <sub>x</sub> Mn <sub>y</sub> Co <sub>z</sub> O <sub>2</sub> ) MH13654
<b>UL Recognition</b>	
<b>Nominal Voltage [V]</b>	3.7 (average)
<b>Typical Capacity [mAh]</b>	149 (at 0.1C from 4.3 V to 3.0 V at RT)
<b>Nominal Capacity [mAh]</b>	145 (at 0.2C from 4.3 V to 3.0 V at RT)
<b>Rated Capacity C [mAh]</b>	140 (at 0.2C from 4.3 V to 3.0 V at RT)
<b>Dimensions [mm] (without Tags)</b>	
<b>Diameter</b>	16.1 +0.0/-0.3
<b>Height</b>	5.4 +0.2/-0.1
<b>Weight. approx [g]</b>	3.1 +0.2/-0.2
<b>Charging Method</b>	Constant Current + Constant Voltage
<b>Charge Voltage [V]</b>	4.30 ± 0.05
<b>Initial Charge Current [mA]</b>	Standard Charge <sup>2</sup> : 70 Fast Charge <sup>2</sup> : 140 Rapid Charge <sup>3</sup> : 280
<b>Charging Cut-Off (a) or (b)</b>	
<b>a) by time [h]</b>	Standard Charge: 3.5 Fast/Rapid Charge: 2
<b>b) by min current [mA]</b>	3
<b>Discharge Cut-Off Voltage [V]</b>	3.0
<b>Max. Pulse Discharge Current [mA]</b>	435 @ 2s
<b>Max. Continuous Discharge Current [mA]</b>	290
<b>Operating Temperature [°C]</b>	Charge: 0 to 45 Discharge: -20 to 60
<b>Cell Surface Temperature [°C]</b>	60
<b>Storage Temperature</b>	1 Year at -20 to 20 °C > 90
<b>Capacity Recovery Rate<sup>4</sup> [%]</b>	3 Month at -20 to 45 °C > 90 1 Month at -20 to 60 °C > 85
<b>Impedance Initial [Ω]</b>	< 0.4 @ 1kHz
<b>Cycle Life 0.5C/0.5C, 20 °C<sup>5</sup> [Cycles]</b>	>500 (> 80% of C <sub>ini</sub> )
<b>Safety</b>	UN 38.3 passed relevant tests acc. IEC 62133 pending
<b>Internal Approval</b>	
<b>Overcharge Test (4.8V, 3C, 12h)</b>	pending

<sup>1</sup> Recommendations regarding Charging/Discharging and Safety (cf. Handling Precautions/Advanced Product Information) have to be accepted. Cell must not be used without external safety electronics (PCM – Protection Circuit Module)! The CoinPower cell may exclusively be used for the intended purpose. For medical applications please contact VARTA Microbattery. This product is protected by patents, please see: [www.varta-ag.com/patents](http://www.varta-ag.com/patents)

<sup>2</sup> "CoinPower A4-Version Charging Document" must be observed.

<sup>3</sup> "CoinPower A4-Version Charging Document" must be observed. Max. charging voltage: 4.05V ± 0.05V; min. charging temperature: 20°C.

<sup>4</sup> After storage at initial cell voltage of 3.6 to 3.7 V / cell

<sup>5</sup> typical values

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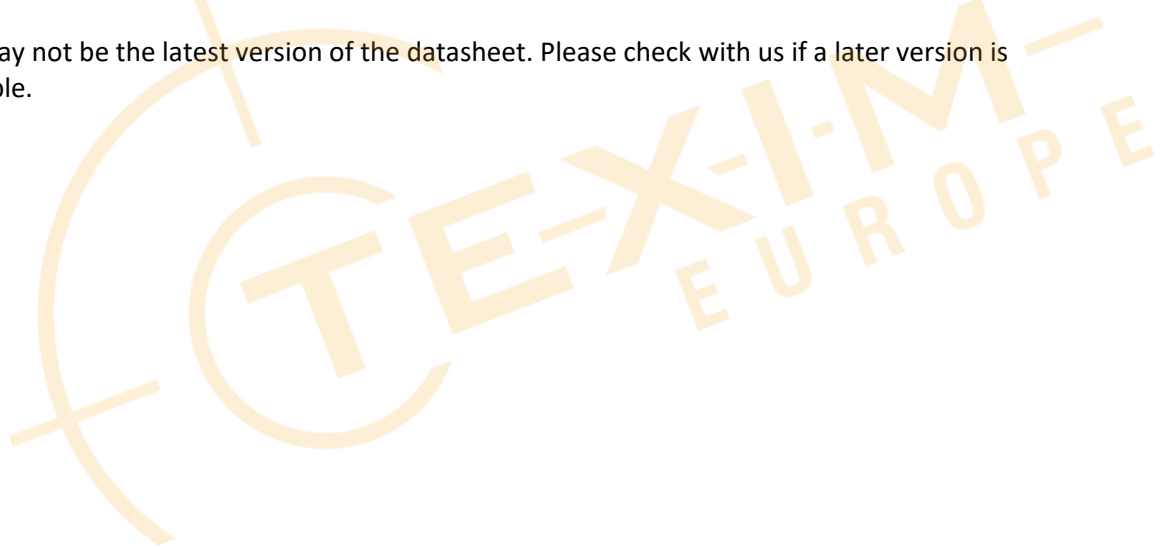
It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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