

Document No.	VNP-MTUG-001
Date	2020.01.29

## USER GUIDANCE

<b>Product :</b>	<b>SUPERCAPACITOR</b>
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※ The document is the guidance for the best use of VINATech's EDLC products.

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# USER GUIDANCE

Document number	VNP-MTUG-001
Date of preparation	2020.01.29
Revision number	0
Page	1

1. This specification guarantees the quality and features of our product as stated in its suggested conditions.
2. Do not take the product apart or damage at random.  
In this case, we do not compensate for the product either materially or monetarily.
3. Polarity
  - This product has polarity (positive and negative poles) so it can be used accordingly.  
The negative pole is marked on the sleeve of the product.
4. Overvoltage and overcurrent
  - It is recommended that the product should be used at below the rated voltage. When used at over the rated voltage, it can burst or its life span can be shortened.
  - In case of connecting more than 2 units for modules, we recommend to lower the operating voltage per unit by Min. 10% from the rated voltage for the sake of safer voltage balancing (e.g. 2.43V per unit in case of 2.7V series).
  - It is recommended that the product should be applied and used at below the maximum current. When used at over the maximum current, it can burst or its life span can be shortened.
5. Working conditions and storage
  - The life of this product can be shortened by working conditions, such as working temperature, humidity, air pressure, among others.
  - Do not keep the product in an environmental condition that is not recommended in this document.
  - Do not expose the product to over 75% humidity. When exposed for a long time, its life can be shortened or it can cause malfunction.
  - Do not use or keep the product in the temperature range that is higher than what is recommended in this document. Its life can be shortened or it can cause malfunction.
  - Do not use or keep the product in the atmosphere that is composed of highly corrosive substances (for example, the environment that is exposed to halogen substances, such as Cl, F, or halogen compounds, nitrogen substances or nitrogen



# USER GUIDANCE

Document number	VNP-MTPS-001
Date of preparation	2020.01.29
Revision number	0
Page	2

compounds, sulfur substances or sulfur compounds, hexavalent chrome, arsenic, among others).

- Do not use or keep the product around Alkalis or Acids.
- When storing the product, avoid direct sunlight and keep it indoors where dust is little and humidity is low.

## 6. Washing and drying

- It is prohibited to wash and dry the product.
- Be careful not to touch the product with water, oil, organic solvent, or compounds containing such liquids.
- Do not dry the product applying heat or energy.

## 7. Connecting PCB

- When connecting the product with PCB, it is prohibited to take actions to fix the product (For example, actions, such as drilling a hole to connect a wire with PCB through the hole or bending lead wire excessively to fix it).
- After connecting the product with PCB, do not move or shake it.
- Do not pull, shake, fold, or twist the lead wire.
- When connecting the product after bending the lead wire with PCB, bend the lead wire using appropriate fixing jig and device before mounting the product on PCB so that the product is not damaged by shock and force.
- After connecting the product with PCB, do not wash it with a PCB cleansing solution. Also, it is prohibited to touch the product with highly corrosive liquid. It can affect its life or cause malfunction.
- Before connecting the product in series or in parallel, discuss the technical matter with us fully.
- When connecting the product with PCB, do not place the product near the components which generate heat while being operated on PCB.
- Before connecting the product with products of other companies in series or in parallel, discuss the technical matter with us fully.
- When soldering the product to connect, conform to the content of this specification.
- When connecting the product with PCB, discharge it below 0.1 V for EDLC model.



# USER GUIDANCE

Document number	VNP-MTPS-001
Date of preparation	2020.01.29
Revision number	0
Page	3

8. Do not remove or damage the sleeve of the product.

In this case, we do not compensate for the product either materially or monetarily.

9. Safety

- When the product becomes hot or gives off a burning smell, or when its cell burst when using it, turn off the circuit and stop using it immediately.
- We do not take any responsibility for the result from the following behaviors.
  - ① Holding the fully charged product.
  - ② Taking the product apart or damaging it.
  - ③ Removing or damaging the sleeve of the product.
  - ④ Other uses that are prohibited from this specification or against working conditions guaranteed in it.

10. Shelf life

- If EDLC is stored without charge & discharge for over 2 years, it is expected that the capacitor may degrade and performance may be lost by around 10%. This can be recovered over time with constant use.

11. Transportation

- EDLC and P-EDLC are safe to ship by any mode. They are REACH & RoHS compliant. EDLC is shipped fully discharged, however there will be a residual charge with Max. 0.5V for a recovery voltage.

12. Others

- The product specified in this document is intended for use in the general application such as memory backup, energy storage, instantaneous power assist etc. However, please contact us for our technical advice or support when the product is used to the application such as transportation or mobility system (automotive drive control, train control, vessel control, aerial vehicle etc.), traffic signal, disaster prevention equipment, medical devices etc. which may directly cause fatal danger, bodily harm or loss of human life. Even though the product is applied to the general application, it is strongly recommended that, when the application requires high level of safety or reliability, the additional protection circuit should be added as necessary after through evaluation of safety.

	<h1>USER GUIDANCE</h1>	Document number	VNP-MTUG-001
		Date of preparation	2020.01.29
		Revision number	0
		Page	4

→ Please note that, unless there is the prior written agreement signed by VINATech and your company, the scope of warranty for the product is limited to the product itself which is delivered to your company and VINATech shall not be responsible for any damages caused by a fault or defect in our product.

13. If you have any other inquiries, please e-mail us at the following address.

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