

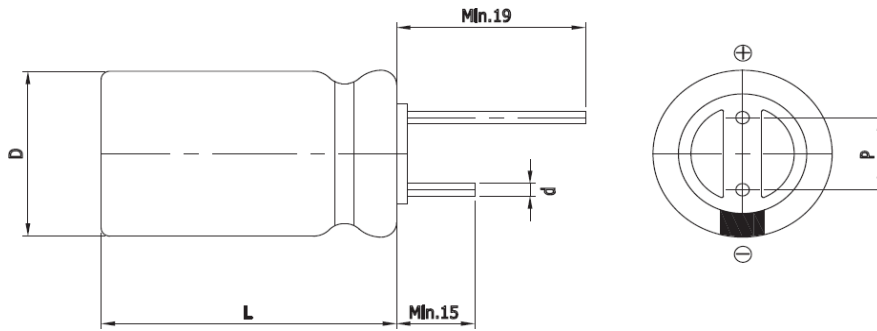
USER GUIDANCE (VPC Series)

- ※ VPC series are packed and shipped while charged. Short circuits between terminals can cause over-heating, which is dangerous. Use with caution in accordance with this user manual.

1.Product Overview

The Vina Pulse Capacitor(VPC) is a hybrid lithium capacitor that has a longer lifetime, a wider temperature range with cost savings, and lower ESR to output a higher discharge current at the same size. Use the product according to its use and conditions of use.

2.Product specifications



- Exterior dimensions

Part Number	Size [mm]			
	D (Φ)	L (mm)	d (Φ)	P (mm)
VEL08203R8306G	08 + 0.1	20 ± 1.5	0.8 ± 0.1	3.5 ± 0.5
VEL10303R8107G	10 + 0.1	30 ± 1.5	0.8 ± 0.1	5.0 ± 0.5
VEL13253R8157G	13 + 0.1	25 ± 1.5	0.8 ± 0.1	5.0 ± 0.5
VEL13353R8257G	13 + 0.1	35 ± 1.5	0.8 ± 0.1	5.0 ± 0.5

-Electrical characteristics

Part Number	Operating Voltage (V)	Min. Voltage (V)	Operating Temperature (°C)	Impedance AC-ESR (1kHz) (mΩ)	Capacitance (F)	Terminal Type
VEL08203R8306G	3.8	2.5	-25 to 70	350	30	Lead
VEL10303R8107G	3.8	2.5	-25 to 70	90	100	Lead
VEL13253R8157G	3.8	2.5	-25 to 70	50	150	Lead
VEL13353R8257G	3.8	2.5	-25 to 70	40	250	Lead

Note: Unless otherwise stated, all tests are based on room temperature and room humidity.

*Room temperature:(25 ±5°C) Room humidity:(60 ± 20% RH)

3. Use and storage conditions

- 1) Operating temperature range: -25 ° to 70°C
(-40°C to +85°C, depending on some conditions)
- 2) Operating voltage range: 2.5V to 3.8V
- 3) Storage temperature range: 5°C to 35°C (20±5°C recommended)
- 4) Storage humidity range: 65% RH or less (non-condensation)

4. Cautions when handling

Please observe the following cautions when using the product:

○ Do not use or store the product for a long time at voltages below the lower voltage (2.5V).

• Use below the lower voltage or store for a long time can significantly shorten the lifetime and make it difficult to return to normal when recharging. Pay particular attention to storage, handling and circuit design.

○ Do not use or store the product for a long time at voltages more than 3.8V.

• Use above the upper limit voltage or store for a long time can significantly shorten the lifetime and cause electrolyte leakage due to high temperatures.

○ Do not short-circuit the product or reverse the anode and cathode terminal connections.

• Shorting the product can significantly degrade the electrical characteristics and may not be recharged or discharged.

• VPC products are polarised on the outer sleeve to identify terminals, and the terminal length is different. Check the external sleeve and terminal length before connecting the terminals.

○ Do not disassemble, change the product or damage it with sharp objects such as knives or nails.

○ Do not hit the product with a hammer or similar object.

○ Do not drop the product or give excessive shock or vibration.

• Do not use if the product is impacted by external factors as the shape is damaged, heating, leakage of electrolytes, or gas may occur.

○ Do not use or store the product in a place where conditions are available; High temperature, direct sunlight, heaters or other heat sources near, where humidity is high, condensation or freezing.

• Excessive high temperatures, direct sunlight, and near heat sources may result in electrolyte leaks and gas escaping with heat generation.

○ Do not use or store the product in an environment exposed to liquids such as solvents or oils.

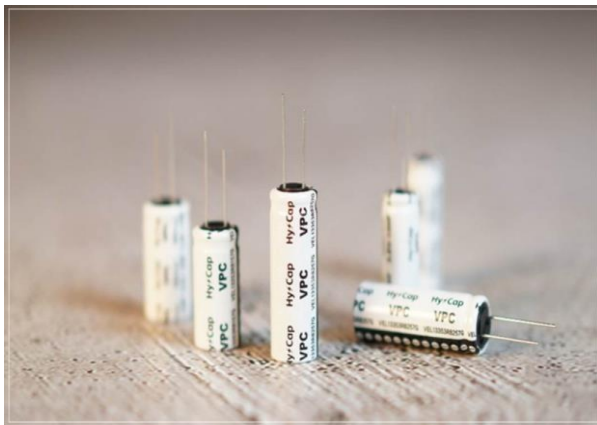
- **Do not use or store the product in an environment full of oil-based gas components.**
 - Fire may occur due to heat of the product.
- **Do not use or store the product in an environment exposed to sea water or salt-filled air.**
- **Do not use or store the product in an environment full of corrosive gases.**
 - Prolonged storage or use of corrosive substances may cause short-circuiting of terminals, rapid product degradation and leakage of electrolytes.
- **If you touch conductive parts such as terminals, wear personal protective equipment such as insulated gloves.**
 - The VPC series is shipped on a charged state, so it can be burned by the terminals.
- **When carrying the product, do not hold lead terminal.**
 - Excessive force on the terminal may occur possibilities leakage, and the cause of the internal short circuit.
- **If it is used with other batteries, please contact VINATech first.**
 - If you'd like to connect with another battery, you may need to make adjustments depending on the battery.
- **If you have unusual conditions such as leakage, abnormal odor, smoke or release of heat, stop using the product and contact us or your distributor immediately.**
- **Do not rub when the leaked electrolyte comes in to contact with the skin or eyes. When the electrolyte is in a mouth, please wash it on the flow water and talk with doctor.**
- **When the product is shipped, the voltage is "equal to or more than 3.5V", but if you combine cells that have not been used for a long time, equalize the voltage of the cell before use.**
 - For cells that have not been used for a long time, the voltage may be reduced to a non-ideal, which may affect other cells due to overcurrent during module configuration.
- **If the variation or electrical characteristics of the product's appearance differ from the catalogue, discontinue use of the product and take appropriate action or replace it.**
- **When disposing of cells, insulate the anode lead terminals (+) and cathode lead terminals (-) to avoid short circuits and dispose of them in accordance with local, national rules and regulations.**

5. Warranty and reliability

- Before exporting or accompanying VINATech's battery products and/or technical

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* VEL Series * VEL product packaging

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[Head Office]

15 Unam-ro, Deokjin-gu, Jeonju-si, Jeollabuk-do, 561-202, Korea(837-1 Palbok-Dong 2-ga)
Tel : 82-63-715-3020(Rep.) Fax : 82-63-715-3021

[Sales Office]

(AcroTower) B-607, Simindae-ro 230, Dongan-gu, Anyang-si, Gyeonggi-do, 14067, Korea
E-mail: hycap@vina.co.kr Tel : 82-31-448-3066(Rep.) Fax : 82-31-448-3067