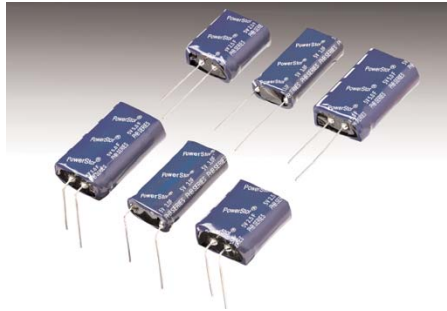


PHB Supercapacitors

Cylindrical pack



Features

- Large capacitance for high energy density
- Low ESR for high power density

Applications

- Bridging or hold-up power
- Memory back-up
- Battery Swap out

Description

Eaton supercapacitors are unique, ultra-high capacitance devices utilizing electrochemical double layer capacitor (EDLC) construction combined with new, high performance materials. This combination of advanced technologies allows Eaton to offer a wide variety of capacitor solutions tailored to specific applications that range from a few micro-amps for several days to several amps for milliseconds.

Ratings

| | |
|--------------------------------------|---|
| Capacitance | 1.5 F to 5.0 F |
| Maximum working voltage | 5.0 V |
| Surge voltage | 5.5 V |
| Capacitance tolerance | -10% to +30% (+20 °C) |
| Operating temperature range | -25 °C to +70 °C |
| Extended operating temperature range | -25 °C to +85 °C (with linear derating to 4.0 V @ +85 °C) |

Specifications

| Nominal Capacitance (F) | Vertical Part Number | Horizontal Part Number | Maximum ESR (Ω) (Equivalent Series Resistance) Measured | | Nominal leakage current (μA) after 100 hours @ 5 V, +20 °C | Nominal dimensions (mm) | Typical mass (grams/piece) |
|-------------------------|----------------------|------------------------|---|--------|--|-------------------------|----------------------------|
| | | | @ 1 kHz | 100 Hz | | | |
| 1.5 | PHB-5ROV155-R | PHB-5ROH155-R | 0.31 | 0.33 | 10 | 8.5 x 16.8 x 21.5 | 3.3 |
| 2.5 | PHB-5ROV255-R | PHB-5ROH255-R | 0.19 | 0.20 | 14 | 10.5 x 20.8 x 22.5 | 5.0 |
| 3.0 | PHB-5ROV305-R | PHB-5ROH305-R | 0.19 | 0.20 | 16 | 8.5 x 16.8 x 31.5 | 5.3 |
| 5.0 | PHB-5ROV505-R | PHB-5ROH505-R | 0.12 | 0.13 | 25 | 10.5 x 20.8 x 32 | 7.5 |

Performance

| Parameter | Capacitance change (% of initial value) | ESR (% of max. initial value) |
|---|---|-------------------------------|
| Life (1000 hours @ +70 °C @ 5.0 Vdc) | ≤ 30% | ≤ 200% |
| Storage - Low and High Temperature (1000 hours @ -25 °C and +85 °C) | ≤ 30% | ≤ 200% |

Dimensions (mm)

| Vertical Part Number | Horizontal Part Number | A | B | C | d' | D | D' | E | E' | F | P |
|----------------------|------------------------|----------------|------|------|-----|--------|----------------|----|----|-----|-------|
| PHB-5ROV155-R | PHB-5ROH155-R | 9.0 | 17.3 | 22.0 | 0.5 | 20 | 15 | 25 | 20 | 2.0 | 11.8 |
| PHB-5ROV255-R | PHB-5ROH255-R | 11.0 | 21.3 | 23.0 | 0.6 | 20 | 15 | 25 | 20 | 2.0 | 5.3 |
| PHB-5ROV305-R | PHB-5ROH305-R | 9.0 | 17.3 | 32.5 | 0.5 | 20 | 15 | 25 | 20 | 2.0 | 11.8 |
| PHB-5ROV505-R | PHB-5ROH505-R | 11.0 | 21.3 | 32.5 | 0.6 | 20 | 15 | 25 | 20 | 2.0 | 5.3 |
| Tolerances | | Maximum | | | | ± 0.02 | Minimum | | | | ± 0.5 |

Note: Longer lead is positive.



Part numbering system

| P | HB | 5RO | V | 15 | 5 | -R |
|-------------|---------|-------------------------|--------------------------------|--|------------|------------------|
| Family Code | Version | Voltage (V) R = Decimal | Configuration | Capacitance (μF) | | Standard product |
| | | | | Value | Multiplier | |
| P= Pack | | 5RO = 5.0 V | V = Vertical H = Horizontal | Example: 155 = 15 x 10 ⁵ or 1.5 F | | |

Packaging information

- Standard packaging: Bulk, 100 units per bag
- Larger bulk packages available on request

Part marking

- Manufacturer
- Capacitance (F)
- Maximum operating voltage (V)
- Family code (or part number)
- Polarity marking

Wave solder profile



| Profile Feature | Standard SnPb Solder | Lead (Pb) Free Solder |
|-------------------------------------|---|---|
| Preheat and soak | <ul style="list-style-type: none"> • Temperature max. (T_{smax}) • Time max. | <ul style="list-style-type: none"> 100 °C 60 seconds |
| Δ preheat to max Temperature | 160 °C max. | 160 °C max. |
| Peak temperature (T_p)* | 220 °C – 260 °C | 250 °C – 260 °C |
| Time at peak temperature (t_p) | <ul style="list-style-type: none"> 10 seconds max 5 seconds max each wave | <ul style="list-style-type: none"> 10 seconds max 5 seconds max each wave |
| Ramp-down rate | <ul style="list-style-type: none"> ~ 2 K/s min ~3.5 K/s typ ~5 K/s max | <ul style="list-style-type: none"> ~ 2 K/s min ~3.5 K/s typ ~5 K/s max |
| Time 25 °C to 25 °C | 4 minutes | 4 minutes |

Manual solder

+350 °C, 4-5 seconds. (by soldering iron), generally manual, hand soldering is not recommended.

Reflow soldering

Do not use reflow soldering using infrared or convection oven heating methods.

Cleaning/Washing

Avoid cleaning of circuit boards, however if the circuit board must be cleaned use static or ultrasonic immersion in a standard circuit board cleaning fluid for no more than 5 minutes and a maximum temperature of +60 °C. Afterwards thoroughly rinse and dry the circuit boards. In general, treat supercapacitors in the same manner you would an aluminum electrolytic capacitor.

Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

Eaton
Electronics Division
 1000 Eaton Boulevard
 Cleveland, OH 44122
 United States
www.eaton.com/electronics

© 2017 Eaton
 All Rights Reserved
 Printed in USA
 Publication No. 4402 BU-SB11021
 June 2017

Eaton is a registered trademark.
 All other trademarks are property of their respective owners.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.