PowerStor®

# Supercapacitors

## PHV Series

### Description

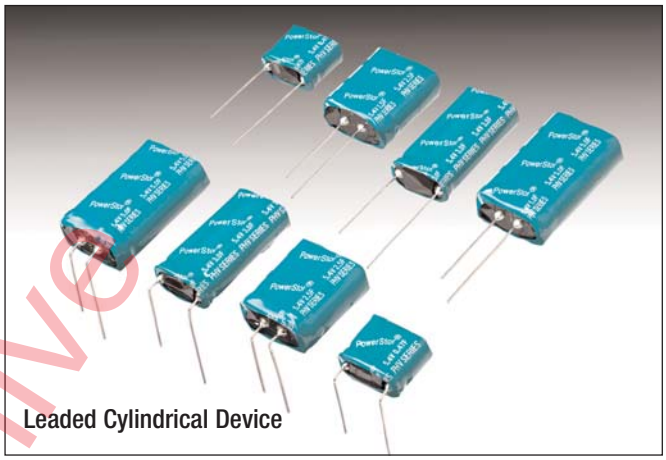
Cooper Bussmann PowerStor supercapacitors are unique, ultra-high capacitance devices utilizing electrochemical double layer capacitor (EDLC) construction combined with new, high performance materials. This combination of advanced technologies allows Cooper Bussmann to offer a wide variety of capacitor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

### Features & Benefits

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

### Applications

- Pulse Power
- Bridging or hold-up power



Leaded Cylindrical Device

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| Specifications | |
|---|---|
| Working Voltage (Maximum) | 5.4V |
| Surge Voltage | 6.0V |
| Nominal Capacitance Range | 0.47F to 5F |
| Capacitance Tolerance | -10% to +30% (20°C) |
| Operating Temperature Range | -40°C to 65°C |
| Extended Operating Temperature Range | -40°C to 85°C (with linear voltage derating to 4.0V @ 85°C) |

**Standard Product**

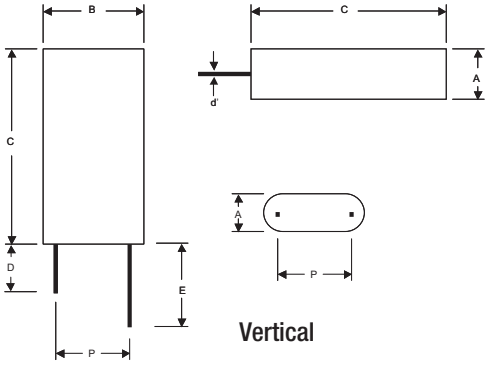
| Nominal Capacitance (F) | Part Number | | Maximum ESR (Ω) (Equivalent Series Resistance) Measured @ | | Nominal Leakage Current (μA) After 100 Hrs. @ 5V, 20°C | Nominal Dimensions (mm) | Typical Mass (grams/piece) |
|---|---|---|---|---|---|---|---|
| | Vertical | Horizontal | 1kHz | 100Hz | | | |
| 0.47 | PHV-5R4V474-R | PHV-5R4H474-R | 0.300 | 0.40 | 13 | 8.5 x 16.8 x 14.0 | 2.6 |
| 1.5 | PHV-5R4V155-R | PHV-5R4H155-R | 0.120 | 0.16 | 18 | 8.5 x 16.8 x 21.5 | 3.0 |
| 2.5 | PHV-5R4V255-R | PHV-5R4H255-R | 0.075 | 0.08 | 24 | 10.5 x 20.8 x 22.5 | 4.5 |
| 3.0 | PHV-5R4V305-R | PHV-5R4H305-R | 0.075 | 0.08 | 25 | 8.5 x 16.8 x 31.5 | 4.8 |
| 5.0 | PHV-5R4V505-R | PHV-5R4H505-R | 0.065 | 0.07 | 28 | 10.5 x 20.8 x 32 | 6.8 |

**Performance**

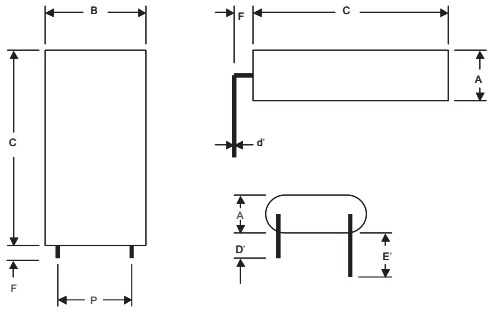
| Parameter | Capacitance Change (% of initial specified value) | ESR (% of initial specified value) |
|---|---|---|
| Life (1000 hrs @ 65°C @ 5.4Vdc) | ≤ 30 % | ≤ 200 % |
| Storage - Low and High Temperature (1000 hrs @ -40°C and 85°C) | ≤ 30 % | ≤ 200 % |

| Dimensions (mm) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vertical Part# | Horizontal Part# | A | B | C | d' | D | D' | E | E' | F | P |
| PHV-5R4V474-R | PHV-5R4H474-R | 9.0 | 17.3 | 14.5 | 0.5 | 20 | 15 | 25 | 20 | 2.0 | 11.8 |
| PHV-5R4V155-R | PHV-5R4H155-R | 9.0 | 17.3 | 22.0 | 0.5 | 20 | 15 | 25 | 20 | 2.0 | 11.8 |
| PHV-5R4V255-R | PHV-5R4H255-R | 11.0 | 21.3 | 23.0 | 0.6 | 20 | 15 | 25 | 20 | 2.0 | 5.3 |
| PHV-5R4V305-R | PHV-5R4H305-R | 9.0 | 17.3 | 32.5 | 0.5 | 20 | 15 | 25 | 20 | 2.0 | 11.8 |
| PHV-5R4V505-R | PHV-5R4H505-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.




Vertical




Horizontal

| Part Numbering System | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | HV | - | 5 | R | 4 | □ | □ | □ | □ | - | R |
| Series Code | Version | | Voltage (V) R = Decimal | | | Configuration | Capacitance (μF) Value | | Multiplier | | RoHS Compliant |
| P = Pack | | | 5R4 = 5.4V | | | V = Vertical H = Horizontal | Example: 155 = 15 x $10^5$μF or 1.5F | | | | |

## Packaging Information

Standard packaging: Bulk, 100 units per package.

Large, bulk packaging available upon request.

## Part Marking

Manufacturer
Capacitance (F)
Max. Operating Voltage (V)
Series Code (or part number)
Polarity


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