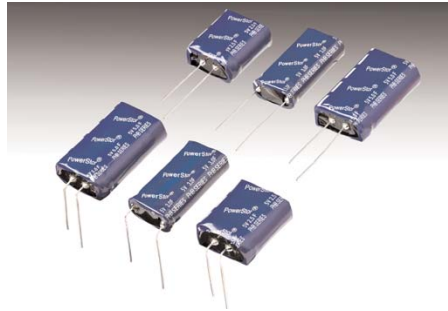


# PHB Supercapacitors

## 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 ( $\Omega$ ) (Equivalent Series Resistance) Measured		Nominal leakage current ( $\mu$ A) 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)	$\leq 30\%$	$\leq 200\%$
Storage - Low and High Temperature (1000 hours @ -25 °C and +85 °C)	$\leq 30\%$	$\leq 200\%$

### 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
<b>Tolerances</b>		<b>Maximum</b>				$\pm 0.02$	<b>Minimum</b>				$\pm 0.5$

Note: Longer lead is positive.



### Part numbering system

P	HB	-	5RO	V	15	5	-R
Family Code	Version		Voltage (V) R = Decimal	Configuration	Capacitance ( $\mu$ F)		Standard product
					Value	Multiplier	
P= Pack			5RO = 5.0 V	V = Vertical H = Horizontal	Example: 155 = 15 x 10 <sup>5</sup> 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