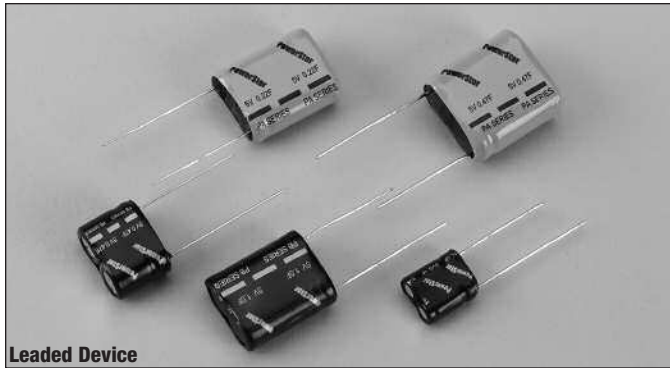


# Supercapacitors

## P Series



Leaded Device

### 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.

The P Series is available in an ultra-low ESR version, PA or a low ESR but higher energy density version, PB.

Series	Features and Benefits		Applications
	Generic	Specific	
PA	5.0 volts Low ESR	Ultra-low ESR	Pulse power Bridge or hold up power
PB	High capacitance Long cycle life Low leakage currents	Low ESR with higher energy density	Bridge or hold up power Memory backup Battery swap out

### Specifications

Working Voltage	5.0V
Surge Voltage	6.0V
Nominal Capacitance Range	0.1 to 1.0F
Capacitance Tolerance	-20% to +80% (20°C)
Operating Temperature Range	-25°C to 70°C

### Standard Products

#### Low ESR (PB Series)

Nominal Capacitance (F)	Part Number	Nominal ESR ( $\Omega$ ) (Equivalent Series Resistance) Measured @ 1kHz	Nominal Dimensions	Typical Mass (grams/1 piece)
0.1	PB-5R0V104-R PB-5R0H104-R	10	5.5 x 10.8 x 12.5 mm	1.1
0.47	PB-5R0V474-R PB-5R0H474-R	2	8.5 x 16.8 x 14.0 mm	2.4
1.0	PB-5R0V105-R PB-5R0H105-R	1	8.5 x 16.8 x 21.5 mm	3.5

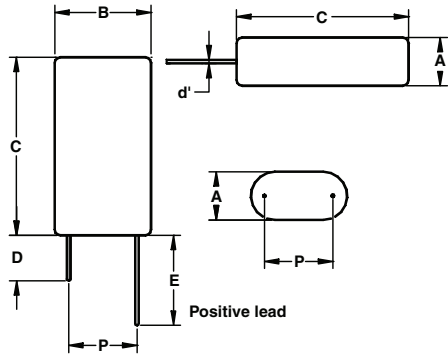
#### Ultra-Low ESR (PA Series)

0.22	PA-5R0V224-R PA-5R0H224-R	0.30	8.5 x 16.8 x 21.5 mm	3.5
0.47	PA-5R0V474-R PA-5R0H474-R	0.20	10.5 x 20.8 x 22.5 mm	5.4

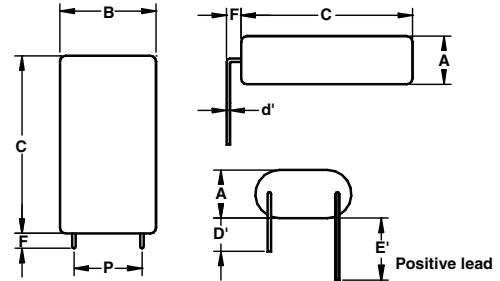
### Performance

Parameter	Capacitance Change (% of initial measured value)	ESR (% of initial specified value)
Life (1000 hrs @ 70°C @ 5.0Vdc)	≤ 30	≤ 300
Storage - Low and High Temperature (1000 hrs @ -25°C and 70°C)	≤ 30	≤ 300

Dimensions (mm)										
Part Number	A	B	C	d'	D	D'	E	E'	F	P
<b>PB-5ROV104-R</b> <b>PB-5ROH104-R</b>	6.0	11.3	13.0	0.5	20	15	25	20	2.0	7.3
<b>PB-5ROV474-R</b> <b>PB-5ROH474-R</b>	9.0	17.3	14.5	0.5	20	15	25	20	2.0	11.8
<b>PB-5ROV105-R</b> <b>PB-5ROH105-R</b>	9.0	17.3	22.0	0.5	20	15	25	20	2.0	11.8
<b>PA-5ROV224-R</b> <b>PA-5ROH224-R</b>	9.0	17.3	22.0	0.5	20	15	25	20	2.0	11.8
<b>PA-5ROV474-R</b> <b>PA-5ROH474-R</b>	11.0	21.3	23.0	0.6	20	15	25	20	2.0	5.3
<b>Tolerances</b>	Maximum			± 0.02	Minimum				± 0.5	



**Vertical**



**Horizontal**

Part Numbering System						
P		-	5	R	0	
Series Code	Version		Voltage (V) R is decimal		Configuration	Capacitance (µF)
P = Pack	A = Ultra-low ESR - or - B = High Capacitance		5R0 = 5.0V		V = Vertical - or - H = Horizontal	Value      Multiplier Example: 474 = 47 x 10 <sup>4</sup> µF or 0.47F

**Packaging Information**

Standard packaging: Bulk, 100 units per package.

Larger bulk packages available upon request.

**Part Marking**

- Manufacturer
- Capacitance (F)
- Max. Operating Voltage (V)
- Series Code
- Polarity Marking

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