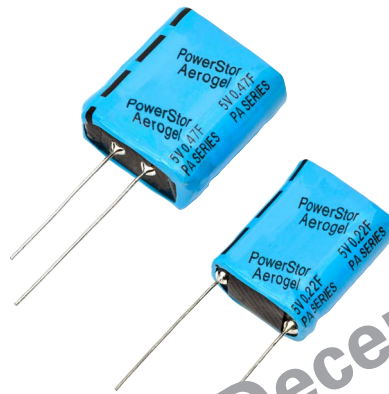


PA Supercapacitors

Cylindrical pack



Features

- 5.0 Volts
- Ultra-low ESR
- High capacitance
- Long cycle life
- Low leakage currents

Features

- Pulse power
- Bridge or hold-up power

Description

Eaton PowerStor supercapacitors are compact, 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 microamps for several days to several amps for mill seconds.



Powering Business Worldwide

Discontinued effective December 29, 2017 or until inventory is depleted. There is no direct replacement. Possible alternate solution is PA family data sheet 4393. See [PCN 17037](#) for more details.

Ratings

Capacitance	0.22 F to 0.47 F
Maximum working voltage	5.0 V
Surge voltage	6.0 V
Capacitance tolerance	-20% to +80% (+20 °C)
Operating temperature range	- 25 °C to +70 °C

Specifications

Capacitance (F)	Vertical Part Number	Horizontal Part Number	Nominal ESR (Ω) (Equivalent Series Resistance) Measured @ 1 kHz	Nominal Dimensions (mm)	Typical Mass (grams/piece)
0.22	PA-5ROV224-R	PA-5ROH224-R	0.30	8.5 x 16.8 x 21.5	3.5
0.47	PA-5ROV474-R	PA-5ROH474-R	0.20	10.5 x 20.8 x 22.5	5.3

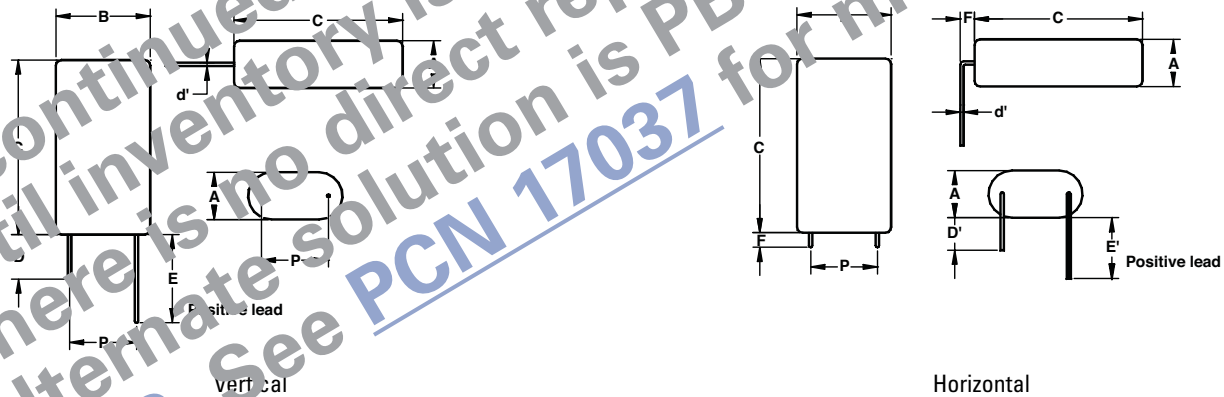
Performance

Parameter	Capacitance change (% of initial value)	ESR (% of max. initial value)
Life (1000 hours @ 70 °C @ 2.5 Vdc)	$\leq 30\%$	$\leq 300\%$
Storage - Low and High Temperature (1000 hours @ -25 °C and 85 °C)	$\leq 30\%$	$\leq 300\%$

Dimensions (mm)

Vertical Part Number	Horizontal Part Number	A	B	C	d'	D'	L	E	E'	F	P
PA-5ROV224-R	PA-5ROH224-R	5.0	17.3	23.0	0.5	2	15	2	20	0	11.8
PA-5ROV474-R	PA-5ROH474-R	11.0	17.3	23.0	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	A	-	5	R	0	V	47	4	-R
Family Code	Version		Voltage (V) R = Decimal	Configuration	Capacitance (μ F)				
					Value		Multiplier		Standard product
P Family	A=Ultra-Low ESR		5R0 = 5.0 V	V = Vertical H = Horizontal	Example: 474 = 47 x 474 or 0.47 F				

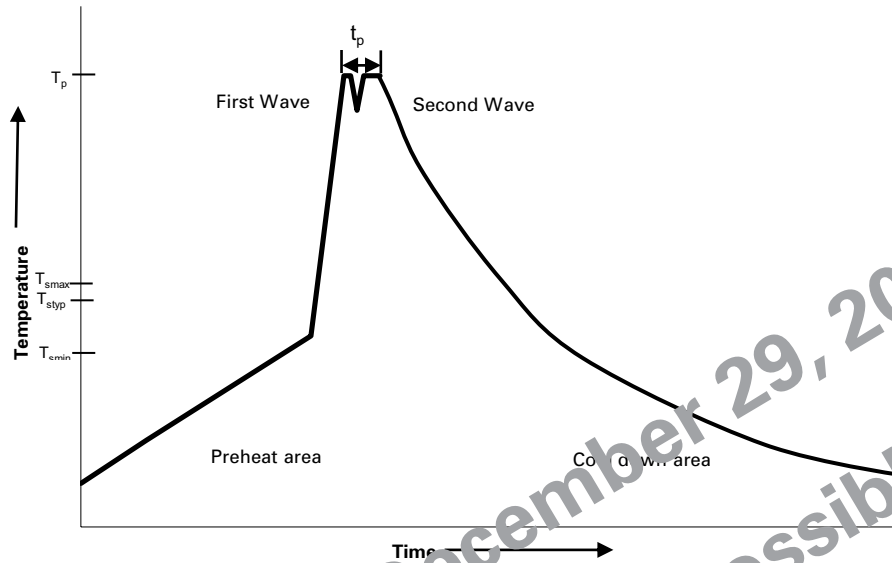
Packaging information

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

Part marking

- Manufacturer
- Capacitance (F)
- Max Operating Voltage (V)
- Family Code (or part number)
- Polarity

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
□ 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, 4-7 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.

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