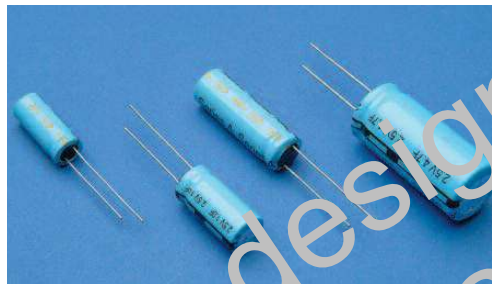


A Supercapacitors

Cylindrical cells



Features

- Very low ESR
- Low leakage current
- Long cycle life
- High usable capacity

Applications

- Pulse power
- Hold-up power
- DC/DC conversion
- Hybrid battery packs
- Valve / solenoid actuation

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 microamps for several days to several amps for millisecond.



Powering Business Worldwide

Not for new designs
HV family data sheet
4376 recommended for
new designs

Ratings

Capacitance	0.47 F to 4.7 F
Maximum working voltage	2.5 V
Surge voltage	3.0 V
Capacitance tolerance	-20% to +80% (+20 °C)
Operating temperature range	-25 °C to +70 °C

Specifications

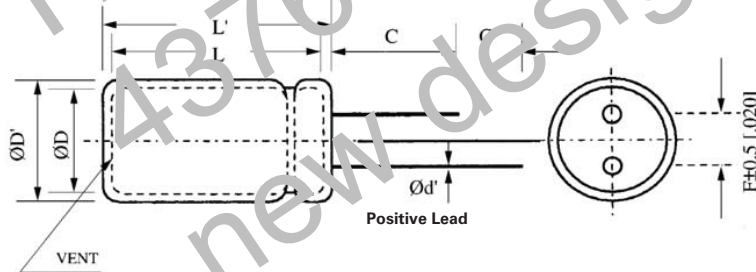
Capacitance (F)	Part Number	Nominal ESR (Ω) (Equivalent Series Resistance) Measured @ 1 kHz	Nominal dimensions (mm) (diameter x length)		Typical Mass (grams/piece)
0.47	A0820-2R5474-R	0.150	8	20	1.8
1.0	A1020-2R5105-R	0.090	10	20.5	2.6
1.5	A1030-2R5155-R	0.060	10	30	3.8
4.7	A1635-2R5475-R	0.025	16	35	10.7

Performance

Parameter	Capacitance change (% of initial value)	ESR (% of max. initial value)
Life (1000 hours @ +70 °C @ 2.5 Vdc)	≤ 10%	≤ 300%
Storage - Low and High Temperature (1000 hours @ -25 °C and +70 °C)	≤ 30%	≤ 300%

Dimensions (mm)

Part Number	D	D'	L	L'	E	d'	C	C'
A0820-2R5474-R	8.0	8.5	20.5	21.0	3.0	0.50	20.0	5.0
A1020-2R5105-R	10.0	10.5	21.8	22.3	5.0	0.60	20.0	5.0
A1030-2R5155-R	10.0	10.5	31.0	31.5	5.0	0.60	20.0	5.0
A1635-2R5475-R	16.0	16.5	37.5	38.0	7.5	0.80	20.0	5.0
Tolerances	Maximum				±0.5	±0.02	Minimum	



Part marking

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

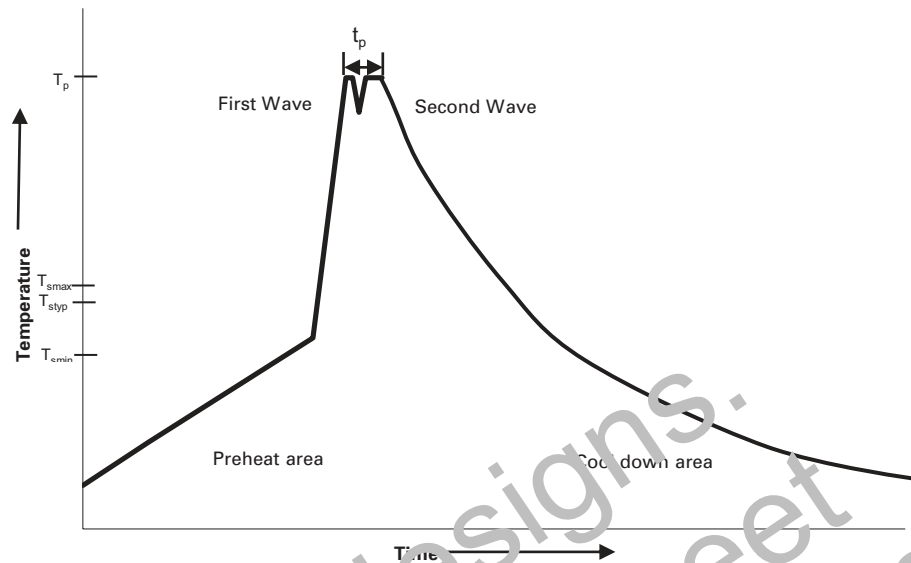
Part numbering system

A	1020	—	2R5	10	5	-R
Family Code	Size reference (mm)		Voltage (V) R = Decimal	Capacitance (μ F)		
				Value	Multiplier	Standard product
A Family	Diameter = 10	Length = 20	2R5 = 2.5 V	Example: 105 = 10 x 10 ⁵ μ F or 1.0 F		

Packaging information

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

Wave solder profile



Profile Feature	Standard Sn/Pb 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
From 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 board, 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.

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