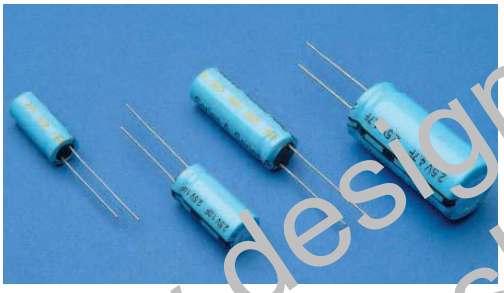
A Supercapacitors
Cylindrical cells

RoHS



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.

Features

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

Applications

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

Powering Business Worldwide

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

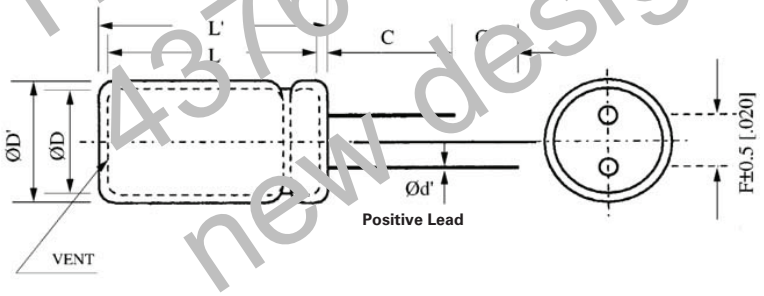
Capacitance (F)	Part Number	Nominal ESR (Ω) (Equivalent Series Resistance) Measured @ 1 kHz	Nominal dimensions (mm) (diameter x length)		Typical Mass (grams/piece)
0.47	A0820-2R5474-R	0.150	8	20	1.8
1.0	A1020-2R5105-R	0.090	10	20.5	2.6
1.5	A1030-2R5155-R	0.060	10	30	3.8
4.7	A1635-2R5475-R	0.025	16	35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

Performance

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

Dimensions (mm)

Part Number	D	D'	L	L'	F	d'	C	C'
A0820-2R5474-R	8.0	8.5	20.5	21.0	3.5	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

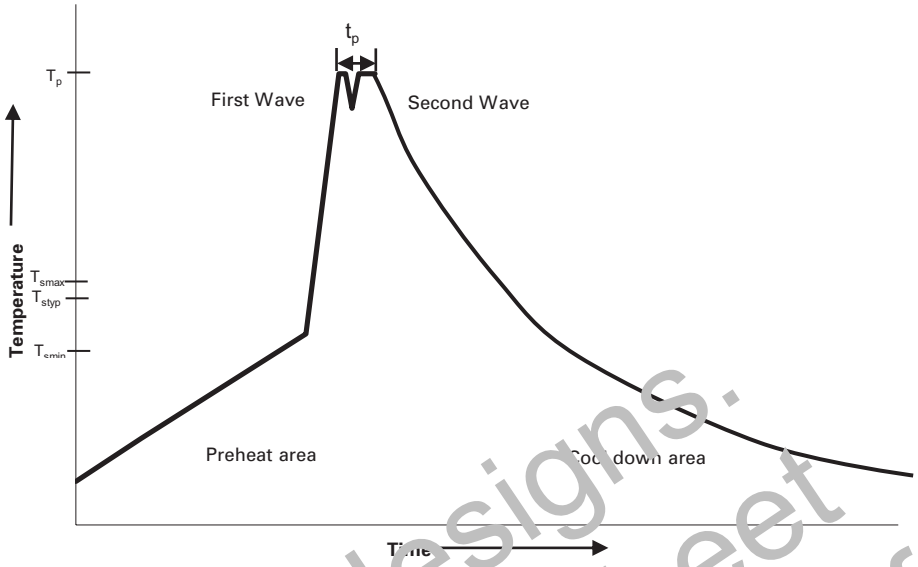
Part numbering system

A	1020		—	2R5	10	5	-R
Family Code	Size reference (mm)			Voltage (V) R = Decimal	Capacitance (µF)		
					Value	Multiplier	Standard product
A Family	Diameter = 10	Length = 20		2R5 = 2.5 V	Example: 105 = 10 x 10^5 µF 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	• Temperature max. (T_{smax})	100 °C	100 °C
	• Time max.	60 seconds	60 seconds
Δ preheat to max Temperature		160 °C max.	160 °C max.
Peak temperature (Tp)*		220 °C – 260 °C	250 °C – 260 °C
Time at peak temperature (tp)		10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate		~ 2 K/s min ~3.5 K/s typ 5 K/s max	~ 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, 4-5 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 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.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
www.eaton.com/electronics

Printed in USA
Publication No. 4302 BU-SB07352
June 2017

Powering Business Worldwide