B Supercapacitors
Cylindrical cells

Features

- High specific capacitance
- Very low ESR
- Low leakage currents
- Long cycle life
- UL Recognized

Applications

- Main power
- Hybrid battery packs
- Hold-up power
- Pulse power

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.

Powering Business Worldwide

Ratings

Capacitance	0.22 F to 2.2 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

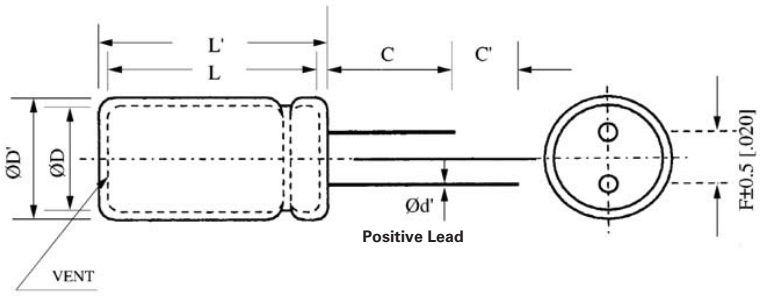
Capacitance (F)	Part Number	Maximum ESR (Ω) (Equivalent Series Resistance) Measured @ 100 Hz	Nominal leakage current (uA) after 72 hours @ +20 °C	Nominal dimensions (mm) (diameter x length)		Typical Mass (grams/piece)
0.22	B0510-2R5224-R	2.0	2.0	5	11	0.54
1.0	B0810-2R5105-R	0.50	4.0	8	13	1.2
1.5	B1010-2R5155-R	0.30	7.0	10	14	1.9
2.2	B0820-2R5225-R	0.20	9.0	8	20	1.5

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'
B0510-2R5224-R	5.0	5.5	11.5	12.0	2.0	0.50	20.0	5.0
B0810-2R5105-R	8.0	8.5	13.0	13.5	3.5	0.50	20.0	5.0
B1010-2R5155-R	10.0	10.5	14.3	14.8	5.0	0.60	20.0	5.0
B0820-2R5225-R	8.0	8.5	20.5	21.0	3.5	0.50	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

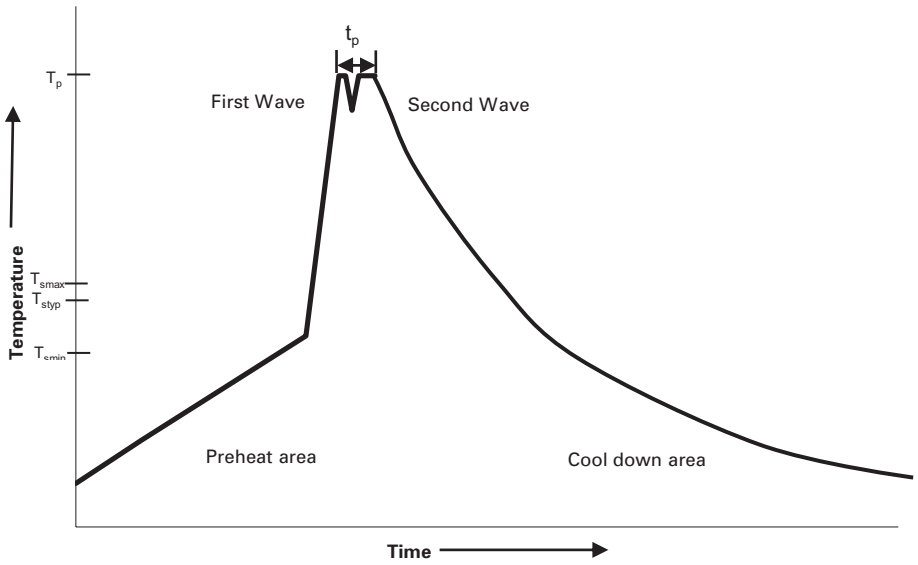
Part numbering system

B	1010		—	2R5	15		5	-R
Family Code	Size reference (mm)			Voltage (V) R = Decimal	Capacitance (µF)			
					Value	Multiplier		Standard product
B Family	Diameter = 10	Length = 10		2R5 = 2.5 V	Example: 155 = 15 x 10^5 µF or 1.5 F			

Packaging information

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

Wave solder profile



Profile Feature		Standard SnPb 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 (t_p)		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.

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