



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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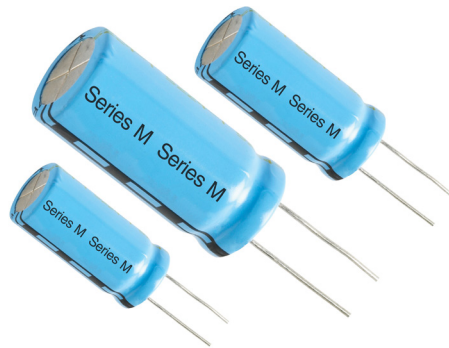
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M Supercapacitors

Cylindrical cells



Features

- 2.5 Volts
- Low ESR
- High capacitance long cycle life
- Low ESR with high energy density
- Low leakage current
- UL recognized

Applications

- Pulse Power
- Bridge or hold-up 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.

Ratings

Capacitance	1.0 F to 9.0 F
Maximum working voltage	2.5 V
Surge voltage	3.0 V
Capacitance tolerance	-20% to +80% (+20 °C)
Operating temperature range	-40 °C to +60 °C
Extended temperature range	-40 °C to +85 °C (Maximum working voltage 2.0 V)

Specifications

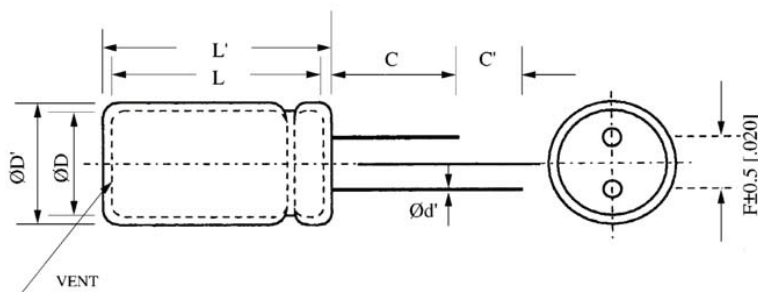
Capacitance (F)	Part Number	Nominal ESR (Ω) (Equivalent Series Resistance) Measured @		Nominal dimensions (mm) (diameter x length)		Typical Mass (grams/piece)
		1 kHz	100 Hz			
1	M0810-2R5105-R	0.210	0.250	8	13	1.2
2	M0820-2R5205-R	0.075	0.100	8	20	1.5
3	M1020-2R5305-R	0.035	0.050	10	20.5	2.8
6	M1030-2R5605-R	0.025	0.035	10	30	3.9
9	M1325-2R5905-R	0.020	0.030	13	26	5.6

Performance

Parameter	Capacitance change (% of initial value)	ESR (% of max. initial value)
Life (1000 hours @ +60 °C @ 2.5 Vdc)	$\leq 30\%$	$\leq 200\%$
Storage - Low and High Temperature (1000 hours @ -40 °C and +60 °C)	$\leq 30\%$	$\leq 200\%$

Dimensions (mm)

Part Number	D	D'	L	L'	F	d'	C	C'
M0810-2R5105-R	8.0	8.5	13.0	13.5	3.5	0.50	20.0	5.0
M0820-2R5205-R	8.0	8.5	20.5	21.0	3.5	0.50	20.0	5.0
M1020-2R5305-R	10.0	10.5	21.8	22.3	5.0	0.60	20.0	5.0
M1030-2R5605-R	10.0	10.5	31.0	31.5	5.0	0.60	20.0	5.0
M1325-2R5905-R	13.0	13.5	27.9	28.4	5.0	0.60	20.0	5.0
Tolerances	Maximum				± 0.5	± 0.02	Minimum	



Part marking

- Manufacturer
- Capacitance (F)
- Nominal working voltage (V)
- Family code (or part number)
- Polarity

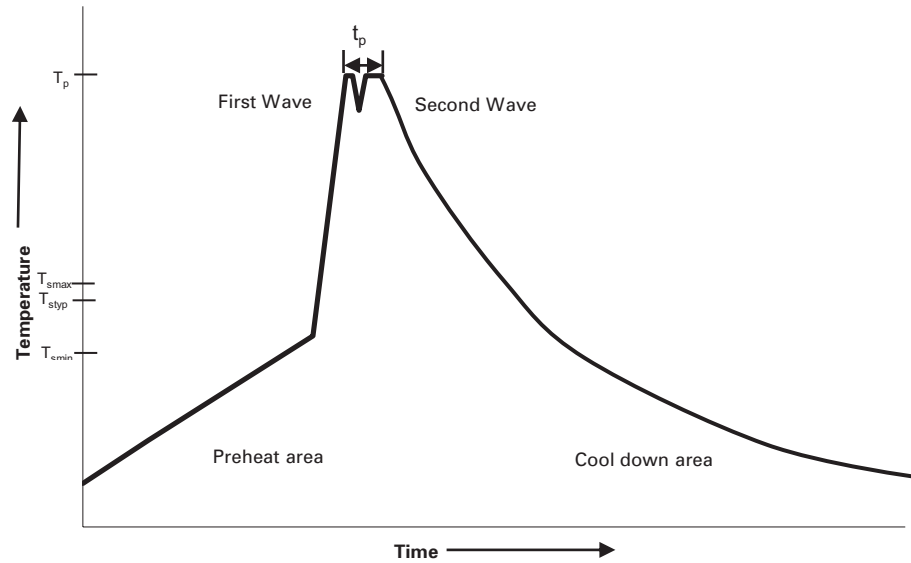
Part numbering system

M	1325	—	2R5	90	5	-R
Family Code	Size reference (mm)		Voltage (V) R = Decimal	Capacitance (μ F)		
				Value	Multiplier	Standard product
M Family	Diameter = 13	Length = 25	2R5 = 2.5 V	Example: 905 = 9 x 10 ⁵ μ F or 9.0 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	<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)	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.

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.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

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