Supercapacitor Soldering Guidelines

The following are guidelines for soldering of Eaton supercapacitor products. Other factors outside of Eaton's control may affect the exact conditions to use.

Lead Materials

Product Line	Type	Lead Surface
KR, KW	Coin	Matte tin plate over nickel
A, B, M, HV, HB, PA, PB, PHB, PHV	Wire	Matte tin over copper
XB, XV	Snap in	Matte tin over copper

Manual Soldering

Do not touch the supercapacitor's external sleeve with the soldering rod or the sleeve will melt or crack. The recommended temperature of the soldering rod tip is less than 260°C (maximum: 350°C) and the soldering duration should be less than 5 seconds. Minimize the time that the soldering iron is in direct contact with the terminals of the aerogel supercapacitor as excessive heating of the leads may lead to higher equivalent series resistance (ESR).

Wave Soldering

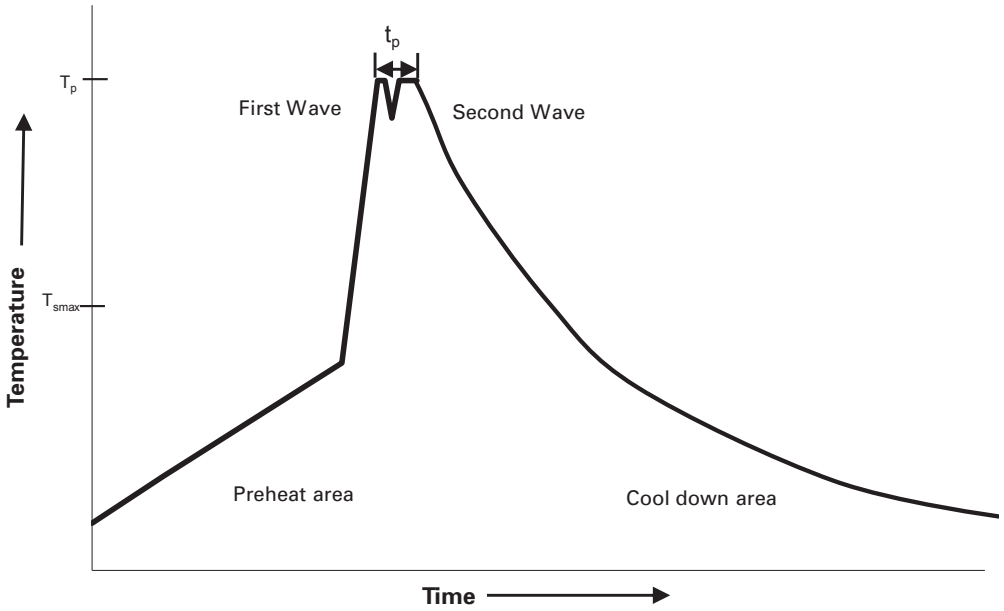
Use a maximum preheating time of 60 seconds for PC boards 0.8 mm or thicker. Preheating temperature should be limited to less than 100°C. Use the following table for wave soldering on leads only:

Solder Bath Temperature (°C)	Solder Exposure Time (seconds)	
	Recommended	Maximum
220	7	9
240	7	9
250	5	7
260	3	5

Reflow Soldering

Do not use reflow soldering on PowerStor supercapacitors using infrared or convection oven heating methods unless the supercapacitor is specifically rated to withstand reflow soldering temperatures.

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

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

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