



Units 9-10/12 Mars Road
Lane Cove NSW 2066
Australia

Tel +61 2 9420 0690
Fax +61 2 9420 0692
www.cap-xx.com

CAP-XX Pty Limited
ABN 28 077 060 872
ACN 077 060 872

CAP-XX Supercapacitors - Loading & Assembly Instructions

CAP-XX supercapacitor products are heat sensitive. Overheating of the supercapacitor may result in degradation of performance and useful life. Please observe the following precautions to assure life-of-product reliability:

1. Handling Precautions

CAP-XX recommends storing supercapacitors in a controlled environment, at a temperature of 18°C - 28°C, and relative humidity of 40% - 60%.

Device storage and handling conditions should not exceed the following limits:

G Series (General Purpose range): -40°C to 70°C.

H Series (High Temperature range): -40°C to 80°C.

CAP-XX supercapacitors are shipped in stackable anti-static trays, each tray holding 20 to 50 devices, nested within cavities moulded in the tray. These trays are designed to protect the devices during transportation and facilitate their removal by hand or vacuum pen.

The supercapacitor is hermetically sealed. Bending or applying too much pressure to the device may damage the seals, resulting in device failure. CAP-XX supercapacitors should not be exposed to more than 400kPa pressure across the flat surface of the device (equivalent to 10 kg or 22lb max.).

CAP-XX supercapacitors are fully discharged when shipped. Devices should be handled and soldered in a discharged state.

2. Assembly Preparation

CAP-XX supercapacitors are offered with the option of an adhesive layer on the bottom of the device to assist mounting on the PCB. The adhesive release tape must be removed from this adhesive prior to positioning on the PCB. The PCB surface must be clean and free from oil, grease or flux residue.

With the adhesive exposed the device should be positioned and pressed firmly into place. An extended hold time is not required.

Standard CAP-XX supercapacitors are offered without the adhesive layer at bottom. To assemble on the PCB, remove the device from the tray by hand, with a vacuum pen, or by an automated pick and place robotic arm with a vacuum pen, locate onto the PCB and solder the terminals to the PCB as described below.



3. Soldering Recommendations

CAP-XX supercapacitors cannot be reflow soldered nor wave soldered

Terminals

CAP-XX supercapacitor terminals are manufactured from tinned (pure bright tin), annealed (low temper) copper that is pliable. Care should be taken to avoid bending the terminals.

Soldering

CAP-XX supercapacitors are designed for direct soldering onto the PCB. Soldering the terminals to the PCB will ensure the highest contact reliability and lowest contact resistance.

The use of water-soluble flux is recommended, as solvent based washing is not acceptable. It is recommended that the assembly be washed after soldering with water-soluble flux to remove any corrosive flux residue (see Section 4 below). Alternatively, a no-clean (low residue) flux can be used, with no washing required.

Hand Soldering

CAP-XX recommends the use of low temperature solder compounds.

Soldering should be undertaken with a low wattage soldering iron, applying heat just long enough to achieve a good connection.

The supercapacitor terminal temperature (measured at the base of the terminal) should not exceed 400°C for more than 5 seconds during soldering.

Never attempt to solder directly to the device casing. The resultant heat will cause permanent internal damage to the supercapacitor.

If a hot-air gun is used to reflow the solder during a re-mount or de-mount, care must be taken to prevent excessive heating of the package adjacent to the solder terminals.

Automated Soldering

Soldering may be automated with a hot bar soldering jig, with soldering irons mounted on an automated raise-lower device with time and pressure controls. It is also possible to mount supercapacitors using conductive adhesive, ultrasonic welding or laser welding.

Infrared Reflow Soldering

CAP-XX supercapacitors are **NOT SUITABLE** for infrared reflow soldering.

Hot-Air Reflow Soldering

CAP-XX supercapacitors are **NOT SUITABLE** for hot-air reflow soldering.

Wave Soldering

CAP-XX supercapacitors are **NOT SUITABLE** for wave soldering.



4. Washing

Do not use solvent cleaners as these may damage the device packaging. Unacceptable solvents include acetone, benzene, isopropyl alcohol and halogenated solvents.

Use only aqueous cleaning solutions based on deionised water. For details of specific detergent compatibility please contact CAP-XX.

Washing may take place at an elevated temperature not exceeding 70°C. Spray pressure should not exceed 50psi. The capacitor may be fully submerged during the washing process.

5. Drying

Post-wash drying should be kept to the minimum necessary duration, at temperatures not exceeding 70°C for the G Series and 80°C for H Series.

Rapid airflow around the device during drying will assist in the removal of moisture trapped in the package.

For more information contact sales@cap-xx.com