



## **CAP-XX Supercapacitors Loading 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**

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

Temperature Range: -30 °C to 75 °C.

CAP-XX supercapacitors are shipped in stackable anti-static PET trays, each tray holding 10 devices nested within cavities molded in the tray. These trays are designed so that the devices can be removed from the tray by hand or by vacuum pens.

The supercapacitor device is hermetically sealed and bending or applying too much pressure on the device may damage the seals leading to device failure. CAP-XX supercapacitors should not be exposed to 400kPa pressure across flat surface of device (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 with 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 onto PCB, remove from tray by hand or by pick and place robot arm with vacuum pen, locate onto PCB and solder terminals to PCB as described below.

### 3. Soldering Recommendations

#### Terminals

CAP-XX supercapacitor terminals are manufactured from tinned (lead free), annealed (low temper) copper that is pliable.

#### Soldering

CAP-XX supercapacitors are designed for direct soldering onto printed circuit boards. The terminals soldered to a PCB will ensure the highest contact reliability and lowest contact resistance available.

The use of water-soluble flux is recommended as solvent based washing is not acceptable. Following soldering with water-soluble flux it is recommended that the assembly be washed to remove any highly corrosive flux residue.

Alternatively no-clean (low residue) flux can be used and therefore no washing is required.

PLEASE NOTE : CAP-XX supercapacitor products are not compatible with Surface Mount Technology soldering processes due to the extreme temperatures required for solder reflow. CAP-XX devices should be added as a secondary assembly operation.

#### Hand Soldering

Soldering of the device should be accomplished with a low wattage soldering iron by applying heat just long enough to achieve a good connection. CAP-XX recommends the use of low temperature solder compounds.

Soldering temperatures should not exceed 400 °C for more than 5 seconds.

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

If a hot-air reflow iron is used, care must be taken to prevent excessive heating of the package adjacent to the solder terminals.

#### Automated Soldering

Recommended method of automating soldering of CAP-XX supercapacitors is by use of pick and place robot to pick device from tray using vacuum pen and locate onto PCB. Separately, soldering irons mounted on automated raise-lower device with time and pressure controls can be used to solder terminals onto PCB.

#### 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 elevated temperature not exceeding 75°C. Spray pressure should not exceed 50psi. Avoid submerging the supercapacitor during the washing process

#### **5. Drying**

Post bake drying for the minimum duration at 50C is recommended. Rapid airflow around the device during drying will assist in the removal of moisture trapped in the package.

The drying temperature must not exceed 75°C.

#### **Asian Sales:**

CAP-XX Pty Ltd  
Room 1109, 11F, No.495  
Kuang-Fu S. Road  
Taipei  
TAIWAN

Tel: +886 912 25 50 77  
Fax: +886 2 8725 7809

#### **North American and European Sales:**

CAP-XX USA, Inc.  
8409 Pickwick Lane, Number 268  
Dallas, TX 75225-5323  
USA

Tel: +1 214 368 3172  
Fax: +1 214 853 5773

[sales@cap-xx.com](mailto:sales@cap-xx.com)  
[www.cap-xx.com](http://www.cap-xx.com)