

## CAUTION FOR PROPER USE OF PMLCAP®

---

Upon using PMLCAP®, please pay attention to the points listed below.  
Catalog may be subject to change without notice.

### 1. APPLIDE VOLTAGE

#### 1) Rated voltage

As for applied voltage to capacitors, sum of D.C. voltage and peak A.C. voltage should not exceed their own DC rated voltage.

#### 2) Voltage derating

Within category temperature range, capacitors can be used without voltage derating.

#### 3) Use in high frequency

Using capacitors at high frequency will be shortened its life due to the generation of heat. Please consult us in this case.

#### 4) Use in special wave-form

If you want to use capacitors with a special wave-form other than a sine wave, please inquire to us for details after identifying the wave-form with which the capacitor is required to be used, because the effective value varies with wave-form.

### 2. PERMISSIBLE CURRENT

#### 1) Permissible current for frequency

Please contact us in advance.

#### 2) Permissible peak current (pulse current)

If you want to use capacitors with a special wave-form other than a sine wave, please inquire to us for details after identifying the wave-form with which the capacitor is required to be used, because the effective value varies with wave-form.

### 3. SELF HEAT RISE

Please confirm self heat rise within 10°C.

**4) Solder paste**

A recommended thickness of solder paste is between 0.1mm to 0.2mm. The content of halogen in the soldering flux should be 0.1 wt% or less.

**5) Tentative mounting**

This product can not be used again when the double-stick tape is used for tentative mounting.

**6. CLEANING SOLVENTS**

Please contact us in advance when cleaning of the PC board after soldering is necessary. If used improper cleaning agent and/or ultrasonic, the capacitor may be damaged.

**7. STORAGE CONDITION**

Please store capacitors under the normal temperature(5~30°C) and normal humidity (70%RH or less) without opening of moisture-proof bag.

Storage time limit is within 1 year from shipped date with above condition.

**8. CONDITION OF USE**

The following environment should be avoided when using capacitors.

- ① Damp conditions such as water, saltwater spray, or oil spray or fumes. High humidity or humidity condensation situations.
- ② Hazardous gas/fumes (hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, bromine, etc.)
- ③ Exposure to ozone, ultraviolet rays or radiation

**9. DISPOSAL**

In case of rejecting capacitors, please seek for professionals who deal with the industrial wastes management.

#### 4. OPERATING TEMPERATURE

Use capacitors within the specified temperature range.

If used outside the specified temperature range, then the electrical characteristics may deteriorate significantly, leading to failure.

The temperature referred to here includes the ambient temperature including heat produced by heat generating devices (power transistors, resistors, etc.), self heating due to ripple current.

#### 5. SOLDERING

##### 1) Reflow soldering

This capacitor shall be used in only reflow method. Do not use in flow, dipping and VPS soldering method. Please confirm your reflow conditions (reflow time, temperature). Soldering conditions should be according as recommended reflow temperature profile.

##### 2) MSL

Moisture Sensitive Level (MSL) which is based on IPC/JEDEC J-STD-020C is showed in the following table.

Chip size	3216	3225	4532	5750
MSL	4	4	5	5

##### 3) Using soldering iron

This capacitor is special for reflow soldering method. However, please refer to the following conditions if soldering by iron is necessary.

Items	Conditions
Temperature	350°C Max
Time	4 seconds Max
Power	30W Max
Other	No preheat

- Soldering under above conditions should not be repeated for a same part.
- Please keep above conditions when reworking is need after reflow soldering.
- Do not hit the tip of soldering iron to the capacitor directly.
- Do not reuse the capacitor.
- Please contact us in advance if your condition is different with above.