



Reverse Voltage

Operation Using Solid Aluminum Electrolytic Capacitors

Explanatory Notes

1. A solid aluminum electrolytic capacitor is polarized. The aluminum is used as an anode and the solid electrolyte as a cathode. If the polarity is reversed, a capacitor may be damaged or short circuited.
2. Some solid electrolyte capacitors are designed to withstand reverse voltages within the range specified in the product literature.

IEC 384-4 (Solid or Non-Solid Aluminum Electrolytic Capacitors) and IEC 384-18 (Solid or Non-Solid Aluminum Electrolytic Surface Mount Capacitors) specify that capacitors can withstand the following test conditions. After 15% of the rated voltage (derating the voltage at the maximum operating temperature) is applied for 125 hours in the reverse polarity direction, and then, the rated voltage is applied for another 125 hours in the forward polarity direction at the upper category temperature (maximum operating temperature), there shall be no significant capacitor damage. However, this test does not mean that capacitors can withstand reverse voltage for extended periods of time.

Note that a reverse voltage may cause a short circuit failure inside the capacitors.

Precaution

1. Solid aluminum electrolytic capacitors are polarized. Do not reverse the polarity.
2. Do not apply reverse voltage to polarized solid capacitors for extended periods of time.