

The following cautions must be observed when using electrolytic capacitors.

- DC Electrolytic Capacitors have the polarity.**  
Make sure of the polarity. Application of the reversed voltage may cause a short circuit or damage to the capacitors when the polarity is not determined or unknown. Note that DC electrolytic capacitors cannot be used for AC application.
- Capacitors are not suitable operating with sudden charge and discharge are frequently repeated.**  
In the circuit subjected to rapid charge cycles, capacitors may be damaged. Be sure and use special capacitors in these applications.
- Be sure not to apply a voltage exceeding the rated voltage.**  
If a voltage exceeding the rated voltage is applied, the leakage current will increase which may damage the capacitor. For a short period however the capacitor withstands up to the surge voltage.
- Be sure not to flow excessive ripple current through the capacitor.**  
The flow of ripple current over the permissible ripple current will cause heat of the capacitor, which may decrease the capacitance and damage the capacitor. Use capacitors designed for high ripple current application.
- Capacitors should be stored in cold and dry places when being stored for long periods.**  
The capacitors, after long storage, tend to have high leakage current which may damage the capacitor by the excessive heat because of high leakage current flow. Use it after voltage treatment(aging).
- Be sure of the temperature range.**  
The characteristics of capacitors change with the operating temperature. This change is temporary and restorable within the specified temperature range. Be sure not to use capacitors below or over the recommended temperature range.
- Be sure not to apply excessive force to the terminals and leads.**  
Excessive strong force applied to the terminals and lead wires may break them and loosen the connections of the internal elements.
- Capacitance decreases at higher frequencies.**  
The capacitance value is measured at 120Hz. The capacitance decreases as the applied frequency becomes higher, whereas increases as the ambient temperature becomes higher.
- Tangent of loss angle increases at higher frequencies.**  
The tangent of loss angle( $\tan\delta$ ) increases as the applied frequency becomes higher, whereas the ambient temperature becomes higher.
- Be careful of temperature and time when soldering.**  
Dipping must be performed at the soldering temperature of less than 260°C for less than 10 seconds otherwise the capacitors may be damaged, and the sleeve of the capacitors may deform and crack from the extremely high temperature.
- Be cautious when cleaning the circuit board after soldering.**  
Cleaning protection for sleeve marking and sealing materials on capacitors body will not be damaged, which should never be washed or cleaned by halogenate chemicals or solvents such as trichloroethylene, xylene or acetone etc.
- The specification of products are according to characteristic (w), established by JIS-C5141.**

Part Number
MCGPR16V337M8X11
MCGPR35V475M5X11