

3. OS-CON Electrical Characteristics

3-1. Frequency Characteristic

Fig.5-1

(at 25°C)

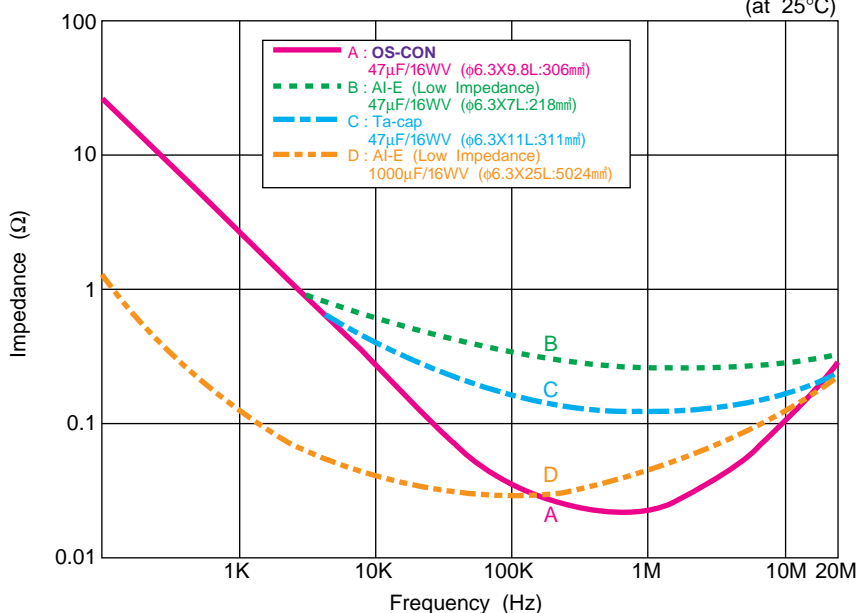
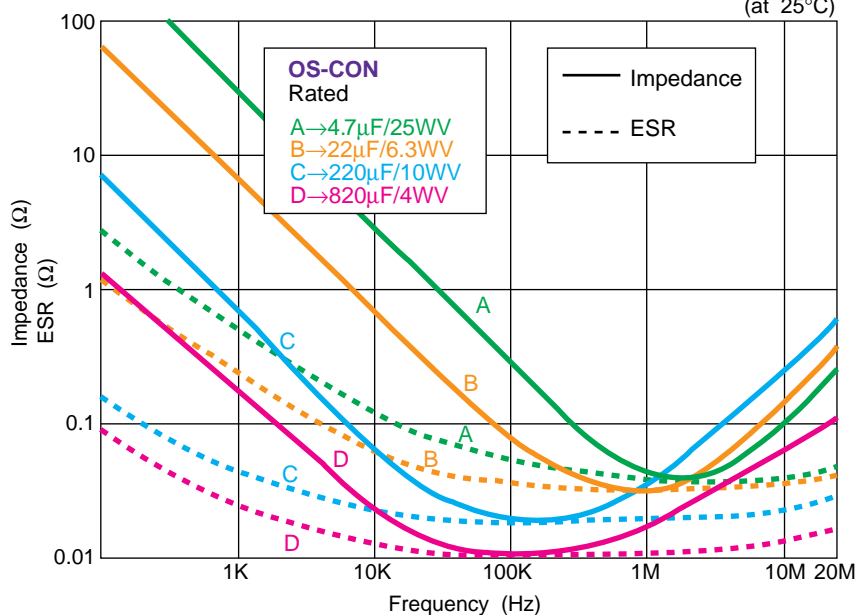


Fig.5-2

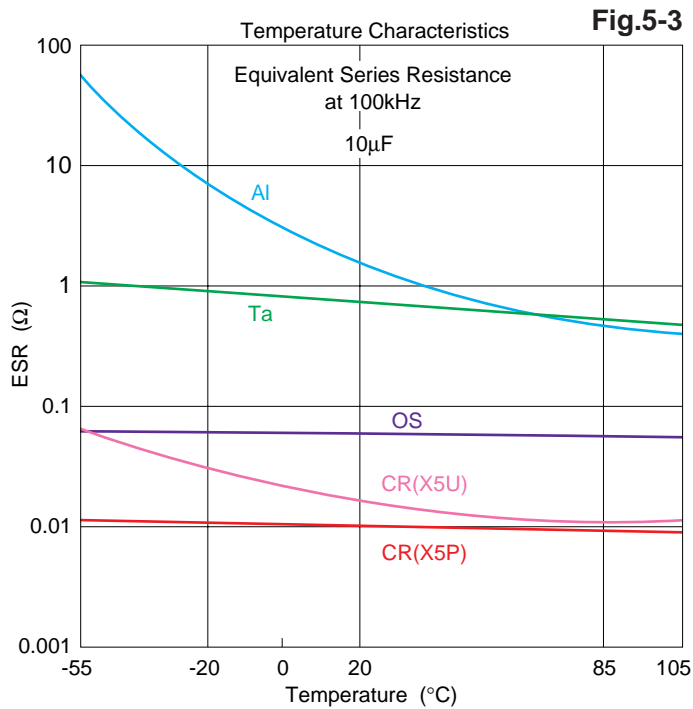
(at 25°C)



The greatest feature of the **OS-CON** is its excellent frequency characteristic nearly equal to that of film capacitor. Using the high conductivity of an organic semiconductor with an electrolyte, and adopting the winding element for layer thinness of electrolyte, the ESR (Equivalent Series Resistance) is greatly improved, obtaining the frequency characteristic nearly equal to the film capacitor.

Fig.5-1 shows the impedance frequency characteristic of **OS-CON**, compared to that of other types of capacitors. The **OS-CON** shows a nearly ideal curve. When compared at 100kHz of frequency, **OS-CON** 47μF and low impedance aluminum electrolytic capacitor 1000μF nearly have the same feature. If the frequency gets higher, the capacitance ratio between **OS-CON** and aluminum electrolytic capacitor becomes bigger. Fig.5-2 shows the impedance and ESR frequency characteristics for each size of **OS-CON**. The resonance point of the **OS-CON** is at 100kHz to 10MHz. The ESR becomes about 10mΩ or less at 100kHz (820μF products), and extremely small value.

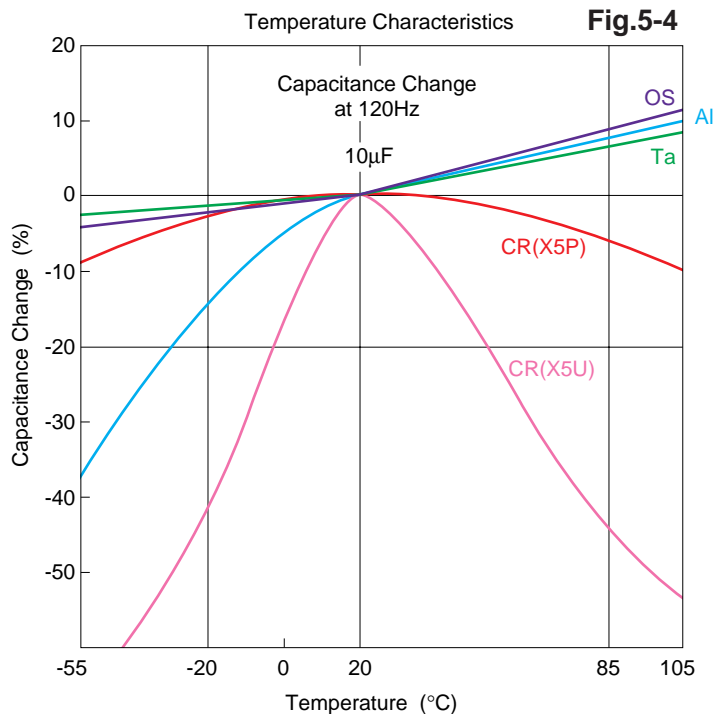
3-2 Temperature Characteristic



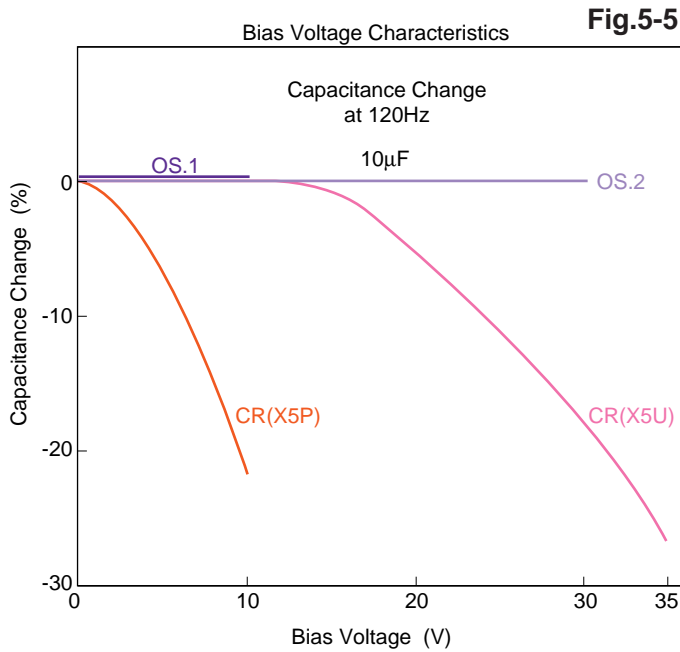
- OS = **OS-CON** ————— Purple
- Al = AL-E. Cap ————— Blue
- Ta = Tantalum Cap. ————— Green
- CR(X5P) = Cera Cap. (X5P Type) ————— Red
- CR(X5U) = Cera Cap. (X5U Type) ————— Pink

The temperature characteristic of the **OS-CON** is that it features little change in temperature for the ESR. Since ESR is dominant at high range of impedance (near resonance point), the ESR value greatly affects noise clearing capacity. What ESR changes little against temperature means that noise clearing ability changes little against temperature as well.

The **OS-CON** is best suited for outdoor apparatus and vehicles machineries.

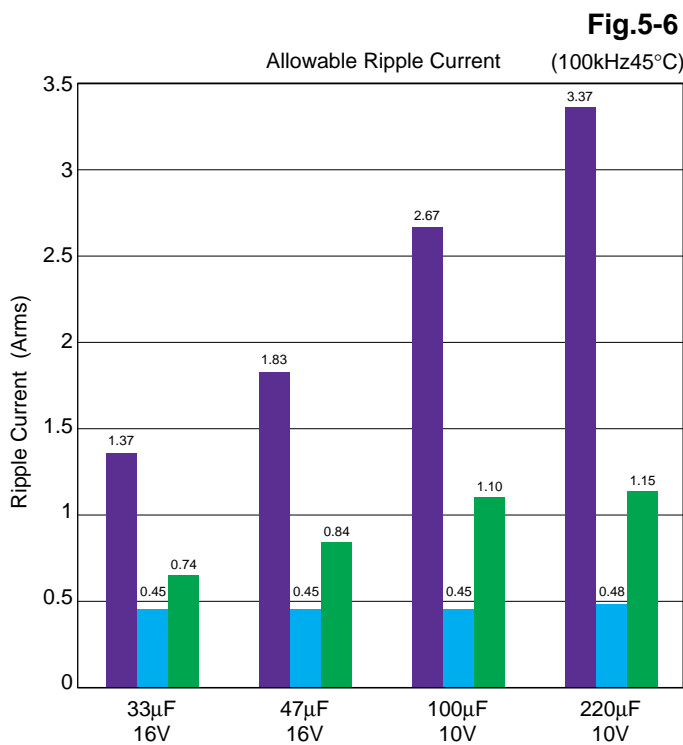


3-3 Bias Characteristic



OS.1 =OS-CON(10SL10M)——Purple
 OS.2 =OS-CON(30SC10M)——Light Purple
 CR(X5P)=Cera Cap.——Red
 (X5P Type ; 10V-10 μ F)
 CR(X5U)=Cera Cap.——Pink
 (X5U Type ; 50V-10 μ F)

As far as the voltage within rated is applied for OS-CON (less than 80% of the rated voltage is recommended), it shows the stable characteristic that the capacitance changes little. Also as regards bias characteristic, which must be considered in using ceramic capacitors, OS-CON can be used safely.



OS-CON (SA series)——Purple
 Al-E. Cap. (Low Impedance)——Blue
 Ta.Cap. (Low Impedance)——Green

When selecting smoothing capacitors for power supply, the allowable ripple current of the capacitor becomes one of the standard selections. The allowable value of Ripple current is decided by generated heat of capacitor, but its heating come out of ESR. Since a large ESR capacitor generates larger heat value, it can not make the flow of Ripple current greater. The OS-CON has a small ESR, and compared to other electorolytic capacitors, can allow far more ripple currents.

3-5. Many property

