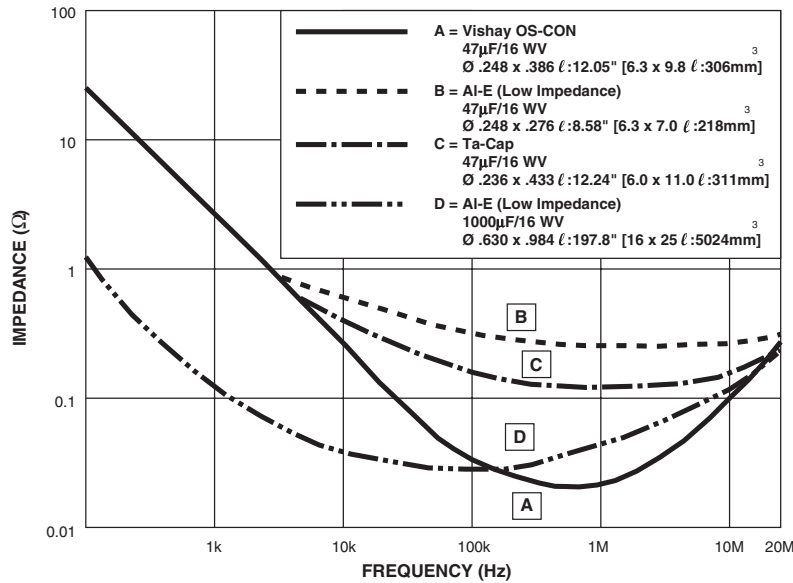




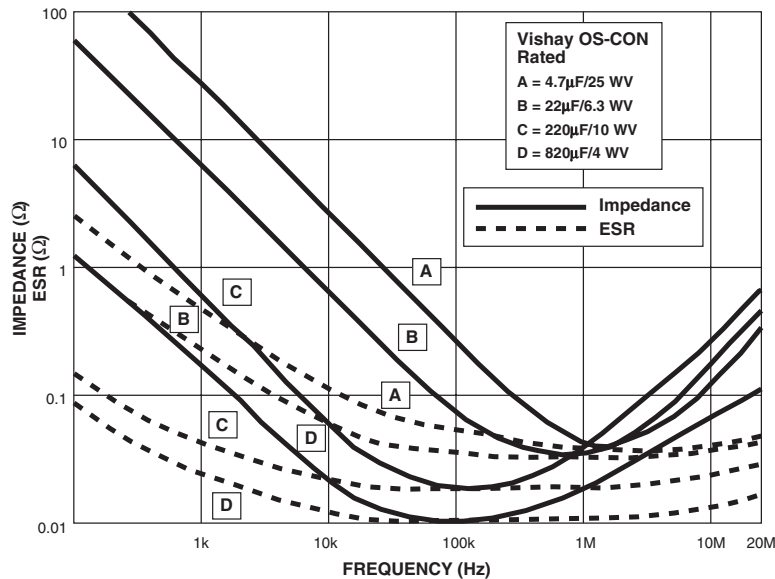
Solid Aluminum Capacitors with Organic Semiconductor

FREQUENCY CHARACTERISTICS (AT 25 °C)

The greatest feature of the Vishay OS-CON capacitor is its excellent frequency characteristic which is nearly equal to that of a 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 to the film capacitor.



The chart above shows the impedance frequency characteristic of Vishay OS-CON, compared to that of other types of capacitors. The Vishay OS-CON capacitor shows a nearly ideal curve. When compared at 100 kHz of frequency, a Vishay OS-CON capacitor 47 μF and low impedance aluminum electrolytic capacitor 1000 μF nearly have the same feature. If the frequency gets higher, the capacitance ratio between the Vishay OS-CON capacitor and aluminum electrolytic capacitor becomes bigger.

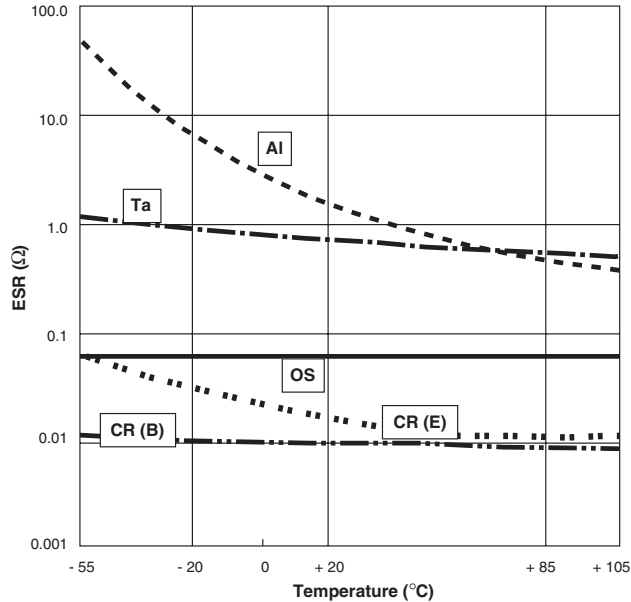


This chart shows the impedance and ESR frequency characteristics for each size of Vishay OS-CON capacitors. The resonance point of the Vishay OS-CON capacitor is at 100 kHz to 10 MHz. The ESR becomes about 10 mΩ or less at 100 kHz (829 μF rating), an extremely small value.

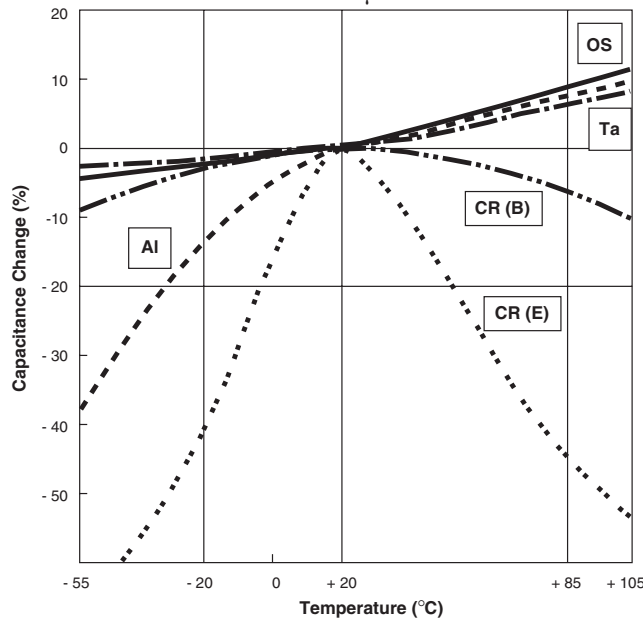


TEMPERATURE CHARACTERISTICS

Equivalent Series Resistance @ 100kHz
10 μ F



Capacitance Change @ 120Hz
10 μ F



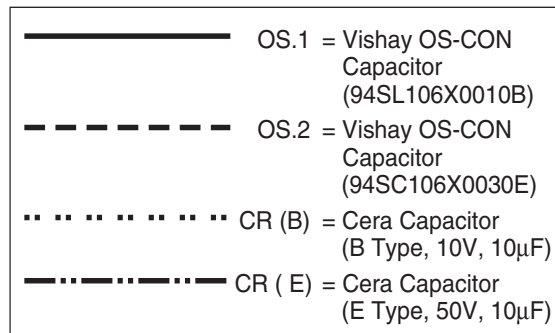
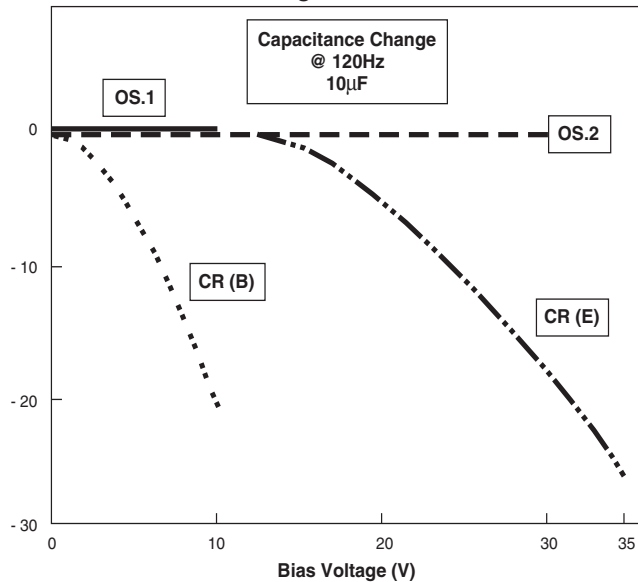
	OS = Vishay OS-CON
	Al = AL-E Capacitor
	Ta = Tantalum Capacitor
	CR(B) = Cera Capacitor (B Type)
	CR(E) = Cera Capacitor (E Type)

The temperature characteristics of the Vishay OS-CON capacitor features little changes in temperature for the ESR. Since ESR is dominant at the high range of impedance (near resonance point), the ESR value greatly affects noise clearing capacity. When ESR changes little against the temperature it means that the noise clearing ability changes little against temperature as well. The Vishay OS-CON capacitor is best suited for outdoor apparatus, vehicles and machinery.



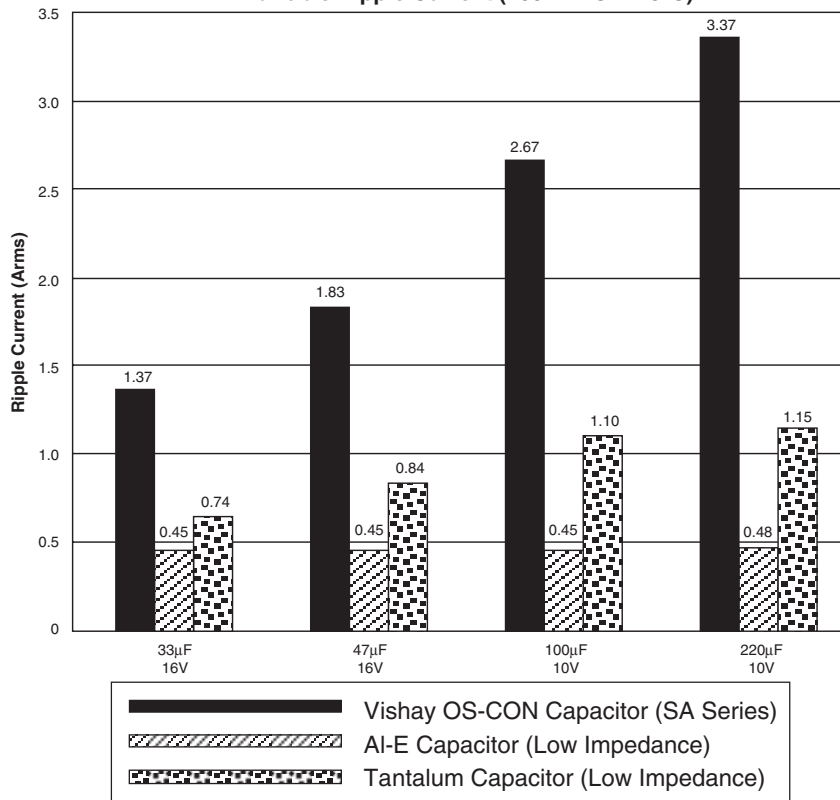
TEMPERATURE CHARACTERISTICS

Bias Voltage Characteristics



When voltage within rating is applied to the Vishay OS-CON capacitors (less than 80% of the rated voltage is recommended) it shows a stable characteristic where the capacitance changes little. Also when regarding bias characteristics, which must be considered in using ceramic capacitors, the Vishay OS-CON capacitors can be used safely.

Allowable Ripple Current (100kHz @ + 45°C)



When selecting a smoothing capacitor for a power supply, the allowable ripple current of the capacitor becomes one of the standard selections.

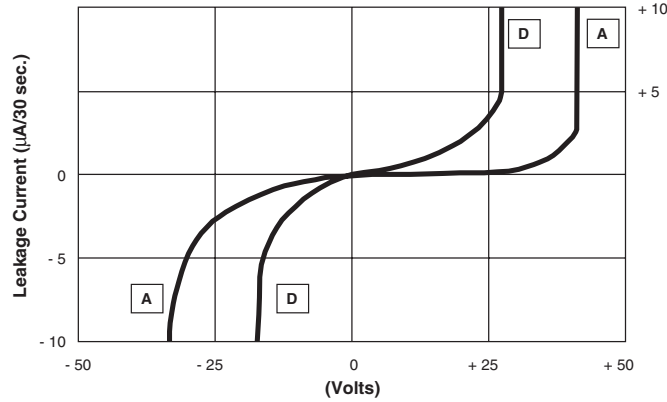
The allowable value of the ripple current is decided by the generated heat of the capacitor, but its heating comes out of ESR. Since a large ESR capacitor generates larger heat value, it can not make the flow of ripple current greater.

The Vishay OS-CON capacitor has a small ESR, and compared to other electrolytic capacitors, can allow far more ripple currents.

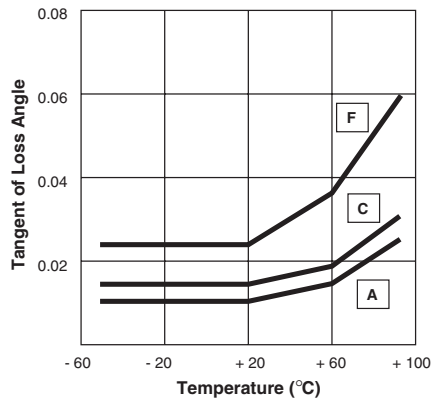


TYPICAL CURVES

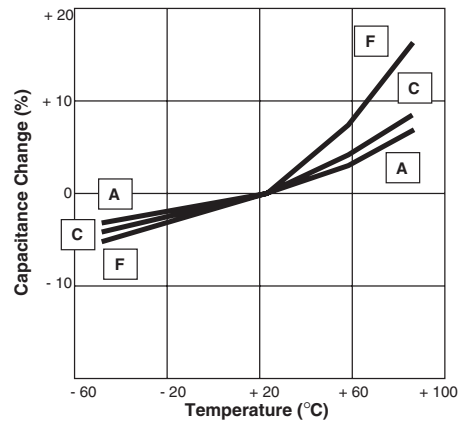
Leakage Current vs Charged Voltage



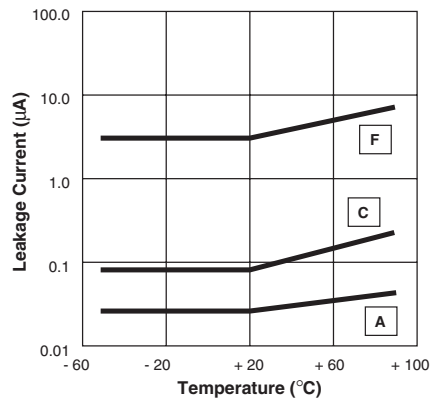
Temperature vs Tangent of Loss Angle
(120Hz)



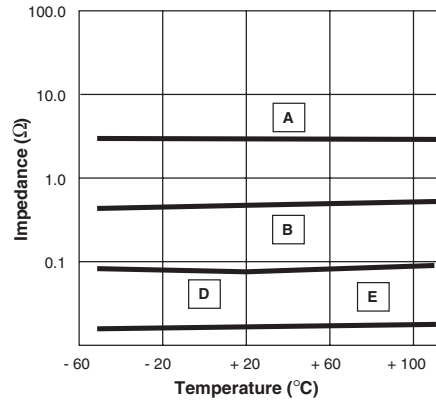
Temperature vs Capacitance Change
(120Hz)



Temperature vs Leakage Current
(Rated Voltage)



Temperature vs Impedance
(100kHz)



A = 1µF/25 WV B = 10µF/10 WV C = 10µF/16 WV D = 47µF/6.3 WV E = 100µF/16 WV F = 150µF/16 WV