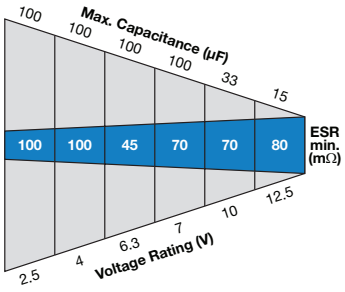
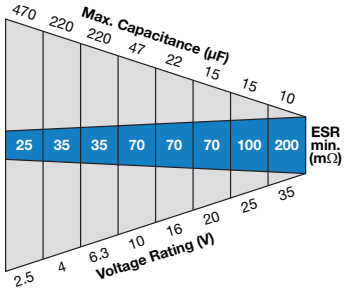
DID YOU KNOW?

T55 SERIES CAPACITORS
LOW ESR POLYMER CAPABILITY CHARTS

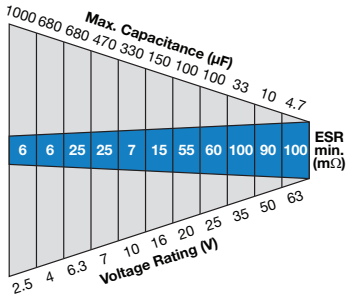
A Case (C / V / ESR)



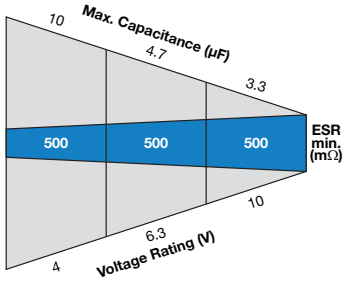
B Case (C / V / ESR)



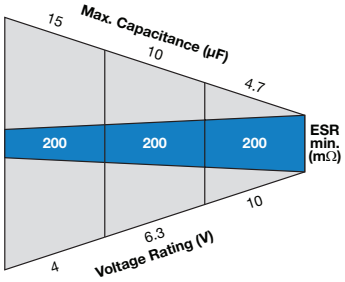
D Case (C / V / ESR)



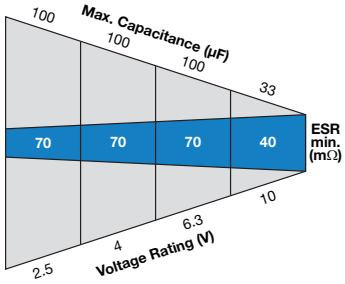
J Case (C / V / ESR)



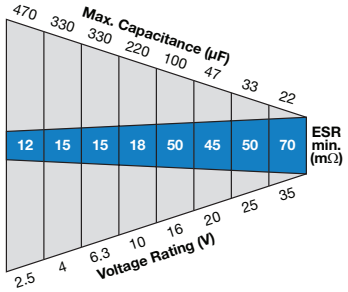
P Case (C / V / ESR)



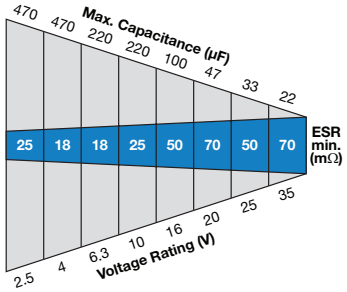
T Case (C / V / ESR)



V Case (C / V / ESR)



Z Case (C / V / ESR)



Notes

- Lower ESR values available on request
- These charts highlight the capacitance, voltage, and ESR capability by case size for Vishay T55 capacitors

Circuit Functions That Benefit From Low ESR

The Vishay T55 series of low ESR polymer capacitors can help designers improve circuit electrical performance, power efficiency, and reliability (through lower operating temperatures).

ESR creates losses due to heating and it also affects the magnitude of charge and discharge currents during capacitor operation. The very low ESR values available in Vishay T55 series polymer capacitors reduce these negative impacts and improve the performance of the circuit.

Polymer capacitors offer significantly lower ESR performance than standard tantalum parts. Manufacturers can further optimize designs to reduce ESR levels and increase the performance of the capacitor in two primary circuit applications: bulk energy storage and waveform filtering.

Bulk capacitance applications require the capacitor to store large amounts of charge. They are typically used to hold up voltage rails during peak current demand in the circuit. Despite their high and stable capacitance values, polymer capacitors are often used in parallel to increase overall capacitance while reducing ESR; in this way they can enable high deliverable current levels.

Waveform filtering means smoothing the signal by reducing the amount of ripple voltage that appears on the DC bus. This is accomplished by allowing for higher charge / discharge currents to better follow the voltage cycles and supply energy during peak loading with minimal voltage drop due to ESR. As the ripple voltage (peak to peak) is reduced, less heat is dissipated on each charge / discharge cycle.

tantalum@vishay.com