

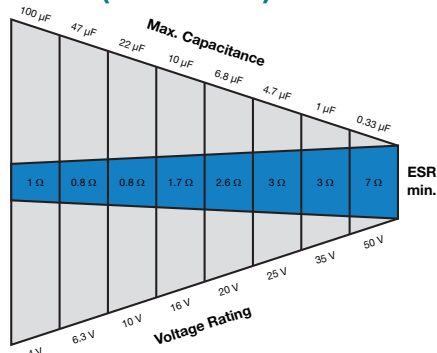


DID YOU KNOW?

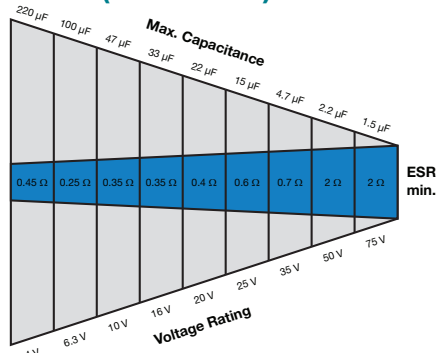
TR3 SERIES

LOW ESR TANTALUM CAPABILITY CHARTS

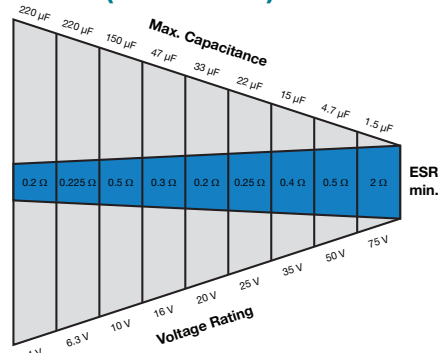
A Case (C / V / ESR)



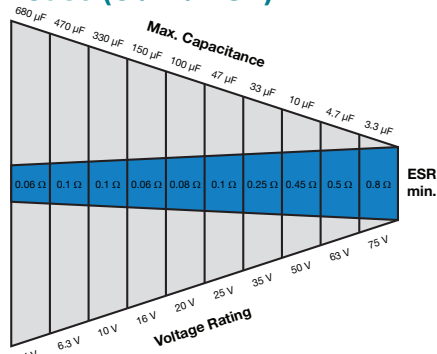
B Case (C / V / ESR)



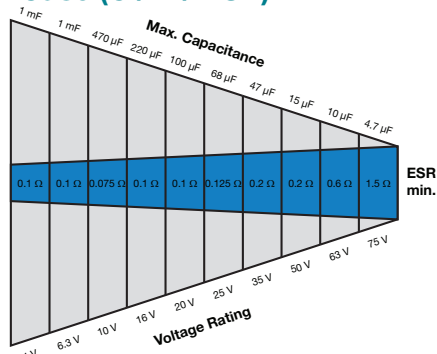
C Case (C / V / ESR)



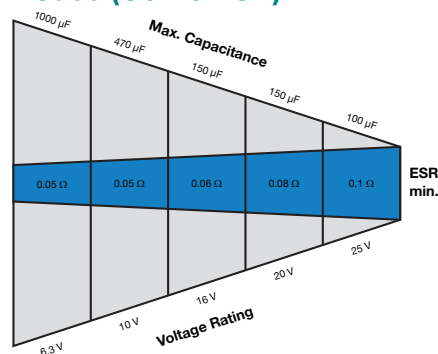
D Case (C / V / ESR)



E Case (C / V / ESR)



W 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 TR3 capacitors

Circuit Functions That Benefit From Low ESR

The Vishay TR3 series of low ESR capacitors can help designers improve circuit electrical performance, power efficiency, and reliability (through proper derating).

Apart from capacitance there are some key characteristics that can dramatically affect the suitability of various dielectrics to meet the requirements of the circuit. ESR (equivalent series resistance) for solid tantalum capacitors is a great example. Apart from creating losses due to heating it also affects the magnitude of charge and discharge currents during capacitor operation.

Manufacturers can optimize designs to reduce ESR levels and increase the performance of the capacitor in two primary 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.

Waveform filtering means smoothing the signal by reducing the amount of ripple current 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. As the ripple current (peak to peak) is reduced, less heat is dissipated on each charge / discharge cycle.