Can One Evans Hybrid Wet Tantalum Capacitor Replace a Bank of 24?

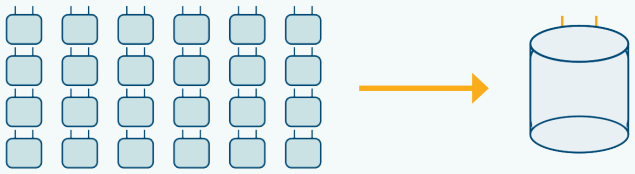
A 28 V Bus Filtering Design Comparison

The Challenge

An engineer developing an avionics subsystem powered by a 28 V bus asked whether an Evans capacitor could be evaluated as an alternative to a bank of 24 parallel aluminum polymer capacitors. The existing bank provides 6,480 µF of nominal capacitance and is rated at 40 V. Component volume was a key consideration, and the engineer preferred a 63 V rating to provide additional voltage margin.

The Proposed Alternative

Evans Group proposed a single THQ2063802 hybrid capacitor to meet this requirement. Rated at 63 V and 8,000 µF, it provides more nominal capacitance than the existing bank while meeting the engineer's preferred voltage rating.



24 Aluminum Polymer Capacitors
6,480 µF, 40 V

1 × THQ2063802
8,000 µF, 63 V

Illustrative, not to scale

A Smaller Approach to Bus Filtering

Evaluating a single hybrid capacitor in place of a parallel bank may help reduce component count, footprint and package volume. Evans Group works directly with engineers to assess capacitor options against the electrical, mechanical and environmental requirements of each design.

Component-Level Comparison	Existing Bank	Proposed
Capacitor Count	24	1
Nominal Capacitance	6,480 µF	8,000 µF
Component Volume	1.512 in^3	0.708 in^3
Component Footprint	4.14 in^2	1.54 in^2
Initial Component-Level Comparison*	**~53% less volume**	**~63% less footprint**

*Space savings are based on an initial component-level comparison and exclude spacing between the existing capacitors. Final selection should be confirmed against the complete application requirements.

View and download the THQ2063802 Product Series Specifications and Datasheet.

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