

Application notes for PCs (laptop PCs, all-in-one PCs)



1. What Is a Polymer Aluminum Electrolytic Capacitor?

Murata uses aluminum foil with a laminated structure for the anode and conductive polymer for the cathode in our polymer aluminum electrolytic capacitors (ECAS series). The strengths of these capacitors include a low ESR, a large capacity, and a low profile.

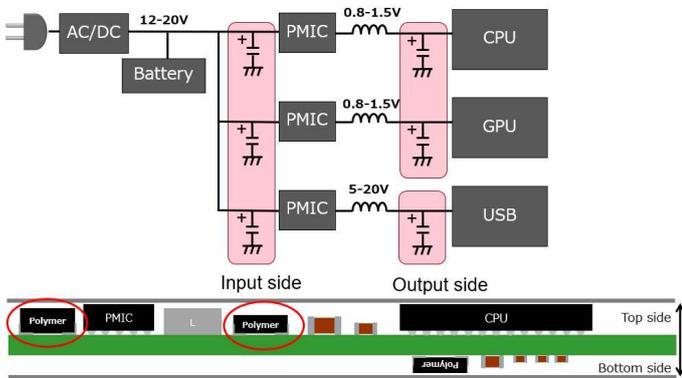
2. Capacitors Needed by Personal Computers

Working from home and telecommuting have spread in recent years. That has led to increased demand for space-saving all-in-one PCs and thin and lightweight notebooks that are easy to carry.

In addition, an increasing number of tasks require processors with high processing power, such as simulation and video editing. In line with that, the process to lower drive voltages is underway to curb rising electric power consumption. It is necessary to supply stable power with few voltage fluctuations because the permissible range of the voltage becomes narrower as the voltage becomes lower.

There is a need for low-ESR, large-capacity, and small/low-profile capacitors that can contribute to stable power supply to achieve both higher performance and space saving in PCs.

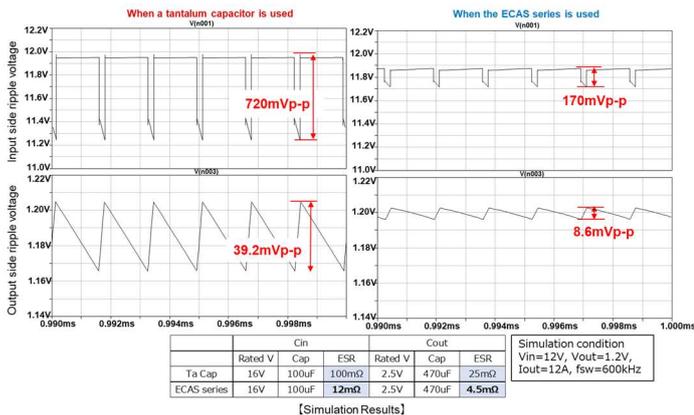
3. Example of applied circuit



4. Advantages of using the ECAS series

(1) Low ESR

The ECAS series, which features a low ESR, has outstanding ripple noise elimination performance, and can thus contribute to stable voltage supply.



(2) Large capacitance

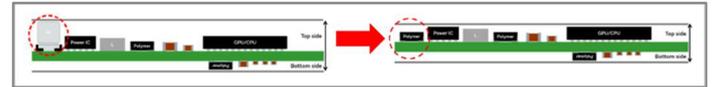
The ECAS series has a large capacity, making it possible to reduce the number of mounted components, which can contribute to a smaller board area.



Item	总有效容量@12V	个数	总面积
ECAS 100μF/16V	100	1	31.39
MLCC 47μF/16V	99	9	72

(3) Low profile

The ECAS series has a lower profile compared with can-type aluminum electrolytic capacitors, which contributes to slimmer and more stylish PC designs.



5. Comparison with other capacitors

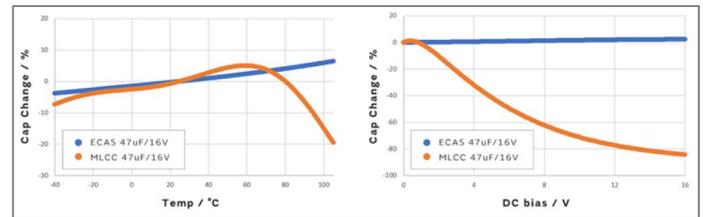
(1) Comparison with Ta capacitors

· These capacitors have more stable reliability than Ta capacitors. Accordingly, they contribute to the stable operation of mounted products.

(2) Comparison with MLCC

· The ECAS series is made of a material resistant to acoustic noise, contributing to a reduction in the environmental noise from capacitors.

· The ECAS series has almost no change in capacitance with respect to DC voltage or the temperature, enabling design using standard values not dependent on the usage conditions.



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