POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS (ELNA)

The polymer hybrid aluminum electrolytic capacitors are an excellent replacement for both Multilayer Ceramic Capacitors (MLCC) and tantalum capacitors. They have several advantages in comparison to MLCCs and tantalum capacitors like an increased vibration resistance up to 30G and high reliability and long life. Crack formation or even fractures within the component are not possible. Another advantage is their stable behavior as a function of temperature change and at high frequency. They have no DC bias, no acoustic noise (piezo effect) and are not flammable. In addition unlike tantalum capacitors no voltage derating is required and high alternating current load capabilities in the Ampere range are possible. Another major advantage of polymer hybrid aluminum electrolytic capacitors is that they are going to the open state in the event of a failure and do not cause a short circuit. Furthermore a large number of MLCCs can be replaced by just one polymer hybrid capacitor or a combination of both which saves space and costs for the assembled printed circuit board.

In view of these advantages the polymer hybrid aluminum electrolytic capacitor is now widely used for example in the input and output stage of DC/DC converters which are also used in the base stations of the 5G transmission standard. In this sensitive application different high frequency ranges are passed through which causes acoustic noise when several MLCCs are used on the circuit board. This can be eliminated by replacing them entirely or reduced if the great amount of MLCCs is replaced by a combination of one MLCC and hybrid capacitor. Due to these very good properties the applications are highly diverse.

Polymer hybrid aluminum electrolytic capacitors can be used for example in the following applications:
Embedded systems, electric drives, base stations, routers, servers, wireless radio applications, meters and measurement instruments, DC/DC converters, EMC filters, automotive applications (e.g. EPS, ECU, ABS, HVAC, ADAS, AFS, EPB, electric water and fuel pump, blower cooling, audio and navigation systems), LED lighting etc.

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TECHNICAL SPECIFICATIONS

TECHNOLOGY	POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITOR (ELNA)
SERIES	HR, HRK, HV, HT, HVK, HTK, HVX, HTX
TYPE	THT / SMT
RATED CAPACITANCE RANGE (C_N)	10 µF to 820 µF
RATED VOLTAGE RANGE (U_N)	6.3 V to 100 V
TEMPERATURE RANGE (T)	105 °C to 135 °C
ESR RANGE	15 mΩ to 120 mΩ
CASE SIZE	5x5.8 mm to 12.5x13.5 mm