

IT EQUIPMENT REPORT

Inconspicuous but indispensable

COMPONENTS FOR IT EQUIPMENT



LTCC
Highly integrated front-end solutions for WLANs 13



Ferrites
Optimizing splitter design 17



Tantalum capacitors
Coping with extreme load changes 20



Inductors
SMD inductors for toughest requirements 23



Surge arresters
Safeguarding communications 28



Ferrites
Powerful progress 31



Aluminum electrolytic capacitors
Cool and calculating 34



Double-layer capacitors
UltraCaps make UPS fast and strong 37



NTC thermistors for hard disks
Cool storage 39

IT EQUIPMENT PORTFOLIO

EPCOS products and solutions

networks, for example, applications where space is not at a premium. EPCOS is a world leader in microwave ceramics as well.

Capacitors are true all-round components found in all telecom and computer equipment and systems. Here EPCOS supplies capacitors in all technologies and a wide variety of designs for all conceivable applications.

Aluminum electrolytic capacitors are primarily found in power supplies for PCs, servers, peripherals, base stations and central offices as well as in uninterruptible power supplies (UPS) or plug-in cards for PCs. This is due to their high volumetric capacitance and current-handling capability.

The scope of application for **tantalum chip capacitors** is similar. They feature the highest capacitance in a minimum of space, with minimal leakage current and the lowest dissipation factor. They smooth and buffer DC voltages and prevent voltage fluctuations from causing failures. Tantalum chip capacitors are also the first choice for buffering rechargeable batteries in pulsed radio applications because they keep voltages constant during the typical pulse-like current drains. One particular gem in the EPCOS portfolio is the world's first SMD tantalum capacitor with triple polymer anodes and an extremely low equivalent series resistance (ESR) of 10 m Ω .

Anyone who has experienced how a power failure can destroy the results of hours of work will appreciate the benefits of an uninterruptible power supply (UPS). In fact, a UPS is an absolute must for corporate networks, as the damage caused by a power failure can be considerable. Up till now, voluminous aluminum electrolytic capacitors and lead-acid batteries have been used in uninterruptible power supplies. Here a new technology that bridges the gap between aluminum electrolytic capacitors and lead-acid batteries is now gaining ground: **UltraCaps**[®] with extremely high capacitances up to 5000 F per cell. These double-layer capacitors with high power density are ideal for bridging momentary voltage dips and thus for use in uninterruptible power supplies. Compared with conventional lead-acid batteries, UltraCaps from EPCOS have a considerably longer service life and are completely maintenance-free.

Another type of capacitor commonly used in IT applications is the **film capacitor**. These capacitors with metalized plastic films, extremely high pulse strength and ripple current capability are ideal for PC applications and mobile phones, where they handle DC decoupling on signal lines. They also feature almost unlimited self-healing capability, so that short circuits are largely ruled

SYSTEM UNITS

One desktop computer contains up to 1000 passive electronic components. Tantalum and multilayer ceramic capacitors buffer the power supply. Varistors protect I/O ports of multimedia equipment against ESD and overvoltage. Ferrites, aluminum electrolytic capacitors and tantalum capacitors with very low ESR are found in onboard power supplies for the latest processors.



Photo: DSM Computer AG, München



Photo: nVIDIA

In industrial PCs, power inductors can be found in every dedicated power supply.



Photo: DSM Computer AG, München

Benefits of SMD power inductors from EPCOS

- High operating temperature
- Excellent reliability and performance
- Widest product range
- Shielded and unshielded versions



SMD power inductors for toughest requirements

Processor-controlled equipment in networks requires internal power supply units, which are usually implemented as switch-mode power supplies. Low-cost SMD storage chokes from EPCOS are indispensable components in such applications – even for currents up to 10 A.

Switch-mode power supplies (SMPS) and DC/DC converters are being used on a growing scale. Along with flyback, forward and push-pull converters, choke converters are a major SMPS topology. A transistor chops the input voltage with a specific frequency. An inductor is used for energy storage: it converts the input voltage to the output voltage as a function of the keying ratio.

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