

The REL MultiCap™ was conceived for high-current, high speed, pulsed power applications. It is ideal for audio, video, and high-frequency designs because its **patented construction**, which winds capacitors coaxially one upon the other into a single unit, **significantly reduces typical capacitor losses**.

Since each coaxial section is in parallel, the **inductance** of the overall capacitor **never exceeds that of a piece of lead wire the same length as the capacitor's body**. Although there is no theoretical limit to the number of sections, practical manufacturing considerations make a ten-section design the optimal choice.

Measured equivalent series resistance (**ESR**) values are **5 to 10 times lower** than conventional designs. (See accompanying charts.) **REL's patented internal bypass design** also **solves the problems of multiple resonances** encountered when a circuit's high-frequency impedance is lowered by externally paralleling a large, conventionally wound capacitor with smaller ones.

In addition to its unique patented configuration, the MultiCap™ uses the finest film materials and proprietary slow-winding construction techniques to further **reduce the diffusion factor (DF) and dielectric absorption (DA)**.

The MultiCap's™ internal bypass design and high-quality construction offer substantial advantages in high-current applications, where losses can be significant, and in bypassing. The MultiCap™ delivers designed-in, uncompromised performance in place of numerous bypass caps "mixed and matched" in an attempt to achieve better performance.

REL MultiCap™ Series

RTX - Ultimate Film & Foil. Recommended for high-current applications and wherever the finest performance is required. REL's top of the line, this polystyrene & tin design exhibits the lowest DA and is the most stable in frequency and temperature characteristics. Tin foil is compatible with the other materials used in the MultiCap™, preventing oxidation and electrolysis and providing an extraordinarily stable long-term performance.

PPFXS - Excellent Film & Foil. Recommended for high-current, high-temperature applications. Polypropylene & tin, with similar characteristics to RTX, but with extended temperature range.

PPMFX - Excellent Metalized Polypropylene. Recommended for lower currents, and wherever small size & lower cost are required. Provides similar benefits to the film & foil MultiCaps™ in a smaller, lighter package. Self-healing; extended temperature range.



Usage & Installation Notes

Do not apply a voltage exceeding the capacitor's voltage rating. To do so can shorten the life of the capacitor or even destroy it. When using the cap with AC voltage superimposed on DC, be sure that the peak value of AC when added to DC does not exceed the cap's rating. There is no surge or overvoltage tolerance assumed or warranted.

Do not apply excessive force to the lead wires. MultiCaps™ will withstand a three-pound maximum steady pull applied axially or radially for one minute, or one pound for one cycle. Applying excessive force to the leads will break them, sometimes internally, affecting the performance.

Do not overheat the capacitor. The layout, size, shape, selection of components, and mechanical and enclosure design, together with the complex thermal interaction of the various parts of the circuit and nearby equipment, are intimately linked to thermal performance and long-term reliability.

Measure the heat at the capacitor surface in the working environment. See the temperature specifications for each series.

Use proper soldering techniques. If the soldering iron is placed too close to the capacitor's body or the soldering temperature is too high, you may damage the electrical insulation or alter the cap's characteristics. **Typical soldering-tip temperatures** are from 280 to 390 degrees C (540 - 735 degrees F). Solder assembly or part within 1 second (+/- 1/4 sec). In **dip or wave soldering** leads should be dipped in solder of 260 degrees F or less for three seconds or less.

Use the proper solvent. Halogenated hydrocarbon cleaning solvents can contaminate capacitors. Chlorinated solvents can damage the insulation or the seals. We do not guarantee any solvent, but the following are normally considered safe: methyl alcohol; xylene; ethyl alcohol; alconox (water soluble); propyl alcohol; butyl alcohol.

Do not short the leads to discharge a capacitor without current limiting. Without current limiting, discharging a capacitor into itself will result in very high currents.

MultiCaps™ appear, when discharged, as a dead short-circuit and have too little ESR to limit charging inrush current. **We consider overvoltage surges and overcurrent surges (i.e., shorting of charged caps) as abuses of the capacitor.**

Keep lead lengths as short as possible for good high-frequency performance.