Subject: Polarized non-polar caps
Posted by PakProtector on Thu, 13 Oct 2005 22:59:03 GMT
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So, if you have non-polar, metalized polypropylene caps, like motor runs...and you use them for DC, you might want to mark a positive terminal.Seems that ionic transfer to the polypropylene occurs and when the polarity is reversed, this content changes the efective volts/meter field density in the cap and failure happens at lower voltages. the dielectric ionic absorbtion happens faster at higher voltages, so if you run at 2 or 2.5x the AC rated voltage, one might want to exercise caution. This is of particular importance when operating under surge voltage conditions, when 2x rated DC voltage is applied. For caps which aren't DC rated, one must extrapolate. Since GE rated 440VAC to 1kV, I am referring to 1k5 to 2kV surge voltages in this example.With self healing metalized caps, you want to avoid an avalanche or destructive/catastrophic event when the self healing happens. A slight decrease in capacitance is tolerable. Creating a crater is not. This effect is not largely publicized, and the avalanche behaviour transition point is not something cap makers like to talk about.cheers,Douglasif you want more detailed info, try your favourite maker. If you get better answers, I would like to know from whence it came. I have a rather interesting set of experiments underway.