Subject: Multiple caps vs. single cap?
Posted by colinhester on Wed, 08 Jun 2005 12:46:03 GMT
View Forum Message <> Reply to Message

Is there an advantage to using multiple caps to obtain a capacitance value versus a single cap of equal value?

Subject: Re: Multiple caps vs. single cap?
Posted by Wayne Parham on Wed, 08 Jun 2005 18:31:17 GMT
View Forum Message <> Reply to Message

There are two issues that come into play right off the top of my head. One is an advantage, the other, a disadvantage.The advantage of using smaller caps is you can generally get better parts. This isn't necesarily true of very small components, but since you're talking about using multiples, I'm assuming you're working with cap values larger than 1uF, probably larger than 10uF. Larger values are usually metalized film and you can replace them with a group of caps that use a metal foil.The disadvantage is that each one has it's own self resonance and other features distinct to the capacitor. So by using a group, you may introduce a very small amount of signal splitting. One cap may act differently than the others, causing a different signal modification through each of the signal paths. It's pretty small though. And this has it's own advantage, in that if you use two identical components and you can identify their orientation, you can actually connect them in opposite directions to act as a conjugate. Whatever differences there are, if asymmetrical according to polarity, this will cancel out. And internal resistance and inductance is paralleled and therefore reduced too.All these are pretty tiny effects. Don't be too concerned about connecting caps in parallel to increase value. Just something to think about as you decide what parts to buy and how to connect 'em up.

Subject: Re: Multiple caps vs. single cap?
Posted by colinhester on Thu, 09 Jun 2005 01:54:58 GMT
View Forum Message <> Reply to Message

Cannot discuss too much in detail, but I need a good source of high voltage oil (motor run) capacitors. I'm looking for 10uF at 660V. Any good suppliers that you know of?.....Colin

Subject: Re: Multiple caps vs. single cap?
Posted by Wayne Parham on Thu, 09 Jun 2005 03:17:43 GMT
View Forum Message <> Reply to Message

Mouser and NTE have 'em and I think Digi-Key does too. I'd stick with new production because these caps don't last forever.

Subject: Re: Multiple caps vs. single cap?
Posted by colinhester on Fri, 10 Jun 2005 15:47:31 GMT
View Forum Message <> Reply to Message

Unless I'm just missing the boat, these guys do not carry these. With any luck I'm going to Mendelsons tomorrow to see twhat treasures I can find.....Colin
http://www.mendelsons.com/the_story.html

Subject: Re: Multiple caps vs. single cap?
Posted by Wayne Parham on Fri, 10 Jun 2005 19:16:49 GMT
View Forum Message <> Reply to Message

They have 'em. Seach the websites or give them a call. Here's a sample listing of caps at Mouser:Motor run capsAnd here's a datasheet for one of 'em:Datasheet

---

Subject: Re: Multiple caps vs. single cap?
Posted by Forty2wo on Sat, 11 Jun 2005 03:58:21 GMT
View Forum Message <> Reply to Message

Hi Colin, Any of the name brand motor run caps will ok at that voltage. The ASC caps from Percy, Angela or ebay are rated 440VAC.and are good for much higher DC. I am planing to use them in my 600-700 volt DRD.Someone had asked ASC for DC Rateing I think on A.A, and thay were not shy with there high DC rateings...John

---

Subject: Re: Multiple caps vs. single cap?
Posted by colinhester on Sat, 11 Jun 2005 04:29:18 GMT
View Forum Message <> Reply to Message

Thanks for the info. This going to save me a lot of money The circuit I'm considering calls for an oil cap rated at 10uF @ 1000V. It's the first cap after the rectifier in a CLCLC filter. What is the

lowest VAC rating I could safely get away with, in your opinion.....ColinPS. How is the DRD coming? PLEASE keep us posted.....