

Re: Recommended capacitors for AF circuits

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- *From:* Winfield Hill <Winfield_member@xxxxxxxxxxx>
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RoyalHeart, Thomas, wrote...

I'm playing around with a circuit, but I am getting a lot of squeal I believe to from my choice of polarized electrolytic caps (220n and 470n) where polarized caps are not indicated (application circuit in the LM1036 data sheet). (Seemed like they would work, given that most have one end grounded.)

The electrolytics are the only ones I have at the moment, and before I buy a different type, I would like some recommendations on the type(s) to get.

Most of the large (47uF, 10uF) capacitors shown on the LM1036 app circuit are electrolytics, used for bypass, etc., where they have little AC voltage across them and therefore don't disturb circuit performance. This includes the output capacitor if you choose a large enough value. According to the datasheet, you may want to increase the value of the 10uF caps to reduce any low-frequency effects on the bass control, you could use three 47uF for the IC.

Some of the smaller ones shown may be electrolytic types, if you wish (and can find them). These are the 0.22uF caps, which just bypass the DC control voltages. They may also be smaller ceramic types, say 0.1 or even 0.01uF, because they're simply present to insure no signal couples into these lines from your wiring to the panel, etc. One of the beauties of the LM1036 is the way it lets you implement front-panel analog gain and tone control, without routing any actual signals to the panel.

But be careful of Ct and Cb. These are the critical capacitors used for treble and bass tone-control. They have significant AC voltages at the tone-control frequencies, so if you use types with high dielectric absorption, etc., such as ceramic caps, they can introduce serious distortion into your audio signal. Follow Martin Griffin's suggestion and read Walt Jung's classic capacitor articles, http://waltjung.org/Classic_Articles.html DigiKey has high-quality polypropylene film capacitors that should work well.

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Thanks,
— Win
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