Subject: .5 watt or 1watt resistors
Posted by DocWaxham on Mon, 17 May 2021 18:00:35 GMT
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What is the general answer. Also carbon film versus metal film. From what I have read the metal film is more quiet and has tighter tolerances. Thanks

Subject: Re: .5 watt or 1watt resistors
Posted by stevem on Mon, 17 May 2021 23:09:32 GMT
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Metal film is the best for noise and also will not get noisy from moisture inclusion over time from heating and cooling.
They can also be had in very tight tolerance ranges.

With whatever resistor you are replacing if you go up 1/2 to 1 watt larger in size, that will make for even less noise and less resistance drift if or when they get hot.

Commonly used 5 watt Emitter resistors I like to increase up to 7 watt.

Subject: Re: .5 watt or 1watt resistors
Posted by DeadKoby on Thu, 02 Jun 2022 21:43:34 GMT
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I only stock metal film resistors. They just hold up better. Tolerance is better, and they are more resistant to drifting with heat.

Subject: Re: .5 watt or 1watt resistors
Posted by rodak on Thu, 23 Feb 2023 22:55:57 GMT
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Reviving a really old thread here. Looking at metal-film resistors, I really don't want to make up a list of values and put in a big order at Mouser, I'd rather just have a large assortment handy for future projects. Is something like this a good deal?

https://www.ebay.com/itm/314400153604

I realize it may not have all the values I might need, but it would probably knock out a bunch of them, correct?

Subject: Re: .5 watt or 1watt resistors

Posted by stevem on Fri, 24 Feb 2023 11:07:25 GMT
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Have you tried this link you posted here?

Subject: Re: .5 watt or 1watt resistors
Posted by rodak on Fri, 24 Feb 2023 13:10:24 GMT
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Yes, tried it just now, works fine.

Subject: Re: .5 watt or 1watt resistors
Posted by rodak on Fri, 24 Feb 2023 14:06:13 GMT
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Here's another, similar one:
https://www.amazon.com/BOJACK-Values-Resistor-Resistors-Asso
rtment/dp/B08FHPJ5G8/ref=sr_1_3?crid=1DM08LPZG568X&keywo
rds=metal+film+resistors+kit+1%2F2w&qid=1677199486&r
efinements=p_76%3A1249158011%2Cp_72%3A1248921011&rnid=12
48919011&rps=1&s=industrial&sprefix=metal+film+r
esistors+kit+1%2F2w%2Cindustrial%2C88&sr=1-3

Subject: Re: .5 watt or 1watt resistors
Posted by chicagobill on Fri, 24 Feb 2023 17:49:31 GMT
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Years ago, I bought a small metal drawer that was sold by IRC or Ohmite, that contained an assortment of 1/2 watt carbon comp resistors. Fewer resistors than the kits that you linked to, but seemed like a good value at the time.

That metal cabinet still sits in my basement by my work bench, still 3/4 full of the resistor values that I never had a call for.

The deals that you show are cheap enough, but I will bet that you will never use most of those values in your lifetime.

Just my $0.02

Subject: Re: .5 watt or 1watt resistors
Posted by rodak on Fri, 24 Feb 2023 21:20:59 GMT

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I'm putting together a list of all the different resistor values in a K200-B2. Thinking of doing the "replace all resistors" in the preamp boards, I figure, buying them from Mouser at 25-50cents each, I wouldn't have to buy too many to exceed the cost of that assortment.

Also, I see in the PC105 schematic, there are two 1% resistors - 45.7 ohms and 49.9K. If I used a 47K 1% and 47ohm 1% resistor (standard values), would I really need to get those specific values in a 1% resistor? I'm guessing they specified 1% because all the others were 10%.

Subject: Re: .5 watt or 1watt resistors
Posted by rodak on Sat, 25 Feb 2023 01:19:58 GMT
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Did the parts spreadsheet and the math:

21 resistors in a PC105 board. Cheapest 1/2W 1% metal film resistors at Mouser are 22cents each, so to replace all of them in two preamp boards would cost $9.24 plus shipping.

Assortment kit at Amazon has all the values I'd need, 40 of each, for $14 (free shipping if I make it part of a $25 order).

I think I'll get that assortment from Amazon. It should easily pay for itself over time. Most of the resistors in my collection are carbon composition, 5%-20%, left over from the 70s. I think I'll just pitch all of them and start fresh, at least for the 25 common values included in the kit.

Subject: Re: .5 watt or 1watt resistors
Posted by stevem on Sat, 25 Feb 2023 01:38:59 GMT
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Just note that most of the resistors on the 105 board are not passing audio and as such changing them out for metal film one would not make for a improvement in the noise floor of the amp.

Noise crested in the first one or two gain stages gets amplified many times over by the down stream gain stages, so this is where to focus your time and make the first A/B comparisons..

This also hold very true for that first transistor after the input jack and big time for the 68K resistor if there is one on the input jsvks

Subject: Re: .5 watt or 1watt resistors
Posted by rodak on Sat, 25 Feb 2023 14:38:36 GMT
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Thanks, Steve.  I struggle with this - I understand that the shotgun approach to replacing components is usually overkill.  I can follow some circuitry, and understand the concept of audio signal flow(and the idea that upstream component replacement can have a much greater effect), but it's not always easy for me to determine if a given component will affect the sound just by looking at the schematic.  I have a wonderful Hakko desoldering gun that makes extremely quick work of removing components, and given the cost of most of them, the work involved to replace all of them is arguably less than that of trying to determine a) if a given component actually needs to be replaced or b) if replacing it is likely to result in an improvement.  Not to mention, replacing everything now, with new, modern components, is likely to result in a massively extended life for the amp as a whole, something I would hope my grandchildren would thank me for.

I should probably just start a separate thread for this, but while we're on the subject:  what sort of non-electrolytic caps should be used in these boards.  I've got plenty of electrolytics, but it's the others I'd need to get.  What type of non-electrolytic caps should I look for?

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Subject: Re: .5 watt or 1watt resistors
Posted by chicagobill on Sat, 25 Feb 2023 16:51:26 GMT
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A couple of things to note here. Back when these amps were designed and built, 5% and 10% carbon comp resistors were the standard of the industry. The engineers at Kustom picked the resistors in the preamp that they thought would help reduce the noise and made them metal film resistors. At that time the only metal film resistors available were 1%. If they were available at 5% or 10% tolerances, they probably would have used them.

The same thinking was used when specifying capacitors. Tantalum caps were seen as the best, highest quality, longest lasting cap available at the time. They have proven to be good, but not perfect in the long run. If you want to replace them, you can choose to use tantalums or any high quality electrolytic cap at the correct ratings.

Part of the selling feature of these amps at the time, was that they were high tech, NASA quality builds.

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