Subject: Zout
Posted by Manualblock on Tue, 19 Jul 2005 21:14:21 GMT
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Can anyone explain how we adjust the output Z for best frequency response? I have a rule stating that the Zout of SE amps should be 1/3 the nominal load impedance of the output tap of the transformer which by my calculation would be 2.7 ohms for an 8ohm tap. Does any resistance through the transformer affect this value? Can we see exactly what primary reflected impedance of the OPT is?Thanks Guys.

Subject: Re: Zout
Posted by Damir on Wed, 20 Jul 2005 10:41:15 GMT
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See my two messages on "Group Build" forum, about 300B output stage. Damping factor and Zout are in Part 2, "chapter" 11.Theoretical Zout is rp (internal anode resistance of our output tube), "reffered" at the secondary side, or Zout=rp/(Ra/Rsec), or in this 3k:8 Ohms example - Zout=650/(3000/8)=1,73 Ohms, giving theoretical damping factor of DF=Rsec/Zout = 8/1,73=4,6.But, we have some winding resistances, etc...
http://audioroundtable.com/GroupBuild/messages/1113.html

Subject: Re: Zout
Posted by Thermionic on Wed, 20 Jul 2005 15:16:28 GMT
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Great post, Damir, both here and on the Group Build forum! An example of output Z and damping factor calculated using these equations:A strapped-triode EL34 operating at 90mA Ia, using a "typical" 3K reflected impedance OPT will have an output Z of about 2.1 ohms and a damping factor of about 3.7. As mentioned in the Group Build post, there are lots of variables to consider. YMMV.Thermionic

Subject: Re: Zout
Posted by Manualblock on Thu, 21 Jul 2005 01:00:36 GMT
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Thanks Damir; it's a lot to digest but I am working on it, It's hard to follow some of the math because of the computor only lets you use certain symbols and I have to adapt to those. I will

have more questions as I get the concepts. My goal is to design a simple PP amp all by my lonesome using 6w6 output tubes and 12ax7 driver and 6sn7 phase splitter. Only because I have those tubes and some transformers on hand. How is your 300B coming along?

Subject: Re: Zout
Posted by Damir on Thu, 21 Jul 2005 04:52:54 GMT
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IMO - the only way is to actually "do the math" on the piece of paper, parallel as you read. There`s not much sense in just looking at those "broken" formulas and numbers. There`re some small typing errors, but easy to spot.Have fun with 6W6, little tube easy to drive - 6SN7 would be "enough" if you don`t need NFB.300B - nothing concretely, just some thinking and arranging 6 chokes, 2 OPTs, 7 big caps, etc. inside 2HE rack (about 40x29 cm, haha), and some "measures" needed for 7kg PT on the top of it...
