Subject: Comparison with Solid State Amps
Posted by Jorel on Fri, 04 Feb 2011 07:31:36 GMT
View Forum Message <> Reply to Message

I don't know if this has been discussed already with so many subjects here but I'd like to know what is the difference between solid state amps and vacuum tube amps? Which one is commonly used now and why?

Subject: Re: Comparison with Solid State Amps
Posted by Adveser on Fri, 04 Feb 2011 18:45:45 GMT
View Forum Message <> Reply to Message

Queue Wayne uploading his booklet about Tube amps

Read this booklet when Wayne posts it. It will explain everything, but basically:

SS - Less distortion, but in a more grating and unpleasant region.

Tube - A lot more distortion, but in a pleasant region of hearing.

Yeah, I know they make stuff that is less than .001% for both, but realistically, that is what you have to deal with.

Subject: Re: Comparison with Solid State Amps
Posted by Wayne Parham on Fri, 04 Feb 2011 23:20:12 GMT
View Forum Message <> Reply to Message

One thing that surprised me (greatly) was that when you compare devices, i.e. triode and bipolar transitor of similar power and gain, the distortion of tubes is often lower across the board. I'm not sure if that's discussed in the little taste of tubes booklet or not. I know Eric Mainardi and I talked about it a while back. Maybe he's who clued me in on it.

I always thought transistors distorted less than tubes, but that the spectrum of distortion was higher-orders from solid-state and lower-orders from tubes. I thought tubes clipped more "gracefully". These things are true, but that's not all. The distortion from a tube is actually less than a comparible bipolar transistor. That was surprising to me. I had never actually investigated it, and assumed that transistors distorted less. But that's not true.

What makes a modern solid state amplifier distortion be so very low is the amount of negative feedback that's used. The ultra-low distortion is a result of the topology, not the device. You can make a tube amp like that too, if you want. Add more gain stages and introduce a lot of negative feedback to reduce distortion. Of course, it makes the circuit more complex and need more tubes.

Tube guys are usually minimalists, so they prefer Class A (single-ended) no-feedback designs.

Subject: Re: Comparison with Solid State Amps
Posted by Jorel on Mon, 14 Feb 2011 02:55:35 GMT
View Forum Message <> Reply to Message

So which one is used by whom?

Adveser said that this is madefor .001 percent. Does that mean that these devices are only made for custom purposes and not readily be purchased on electronic stores?

Subject: Re: Comparison with Solid State Amps
Posted by Adveser on Mon, 14 Feb 2011 04:20:51 GMT
View Forum Message <> Reply to Message

Jorel wrote on Sun, 13 February 2011 18:55So which one is used by whom?

Adveser said that this is madefor .001 percent. Does that mean that these devices are only made for custom purposes and not readily be purchased on electronic stores?

No, sorry I meant that is the percentage of Total Harmonic Distortion.

Subject: Re: Comparison with Solid State Amps
Posted by Adveser on Mon, 14 Feb 2011 04:36:18 GMT
View Forum Message <> Reply to Message

Jorel wrote on Sun, 13 February 2011 18:55So which one is used by whom?

Adveser said that this is madefor .001 percent. Does that mean that these devices are only made for custom purposes and not readily be purchased on electronic stores?

No, sorry I meant that is the percentage of Total Harmonic Distortion.