Subject: Amplifier classes
Posted by drake on Mon, 05 Jun 2017 11:46:17 GMT
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What's the difference between B, AB and C amplifiers and what's the basis of this classification? I ran into a sound engineer who tried to explain the difference but it was all Greek. Again, which one is the most suitable for use as an audio amplifier?

Subject: Re: Amplifier classes
Posted by Wayne Parham on Mon, 05 Jun 2017 14:47:31 GMT
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Class A and class AB are suitable for high-fidelity audio, classes B and C are not.

Class A is often called single-ended because it uses one active element to amplify both positive and negative cycles of the waveform.

Class AB is often called push-pull because it uses two active elements, one for each side of the waveform, positive or negative. But there is sufficient overlap so that each active element is operating within its most linear region, limiting distortion during the "hand off," commonly known as crossover distortion.

Class B is also push-pull, but there is no overlap. Each active device operates only during its half-cycle. Efficiency is higher than class AB but distortion is higher too.

Class C is a special-purpose configuration, used mostly in RF circuits. It amplifies only the top portion of the wave. Very high efficiency but also very high distortion. This distortion isn't a problem in some cases, so it is useful because of its efficiency.

Subject: Re: Amplifier classes
Posted by gofar99 on Tue, 06 Jun 2017 03:01:11 GMT
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Hi, Simple and dirty description follows.

You can also can have class A push pull amps. All my power amp designs fall into this class.

Class A amps have power flowing though the output devices (transistors, tubes) all the time.

Class B amps have the output devices running at 1/2 of each cycle of power. One device will be on while the other is off. '

Class AB has class A operation at low power and goes to B at higher levels

Class C is less than 50% on each output device (can be a single device as in transmitter output stages).

Other classes are not consistently defined. Class D , T, and H are made up with high frequency switching devices. The pulses are summed to obtain the audio output.

Subject: Re: Amplifier classes
Posted by mamoss on Sun, 06 Aug 2017 07:01:10 GMT
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Matters sound can be quite complex and confusing at times but I think the whole point is in grasping the basics. Many people have the interest to know these things but don't go as far as they should.
