



HOMETHEATER  
REVIEW

# What's So **Irresistible** About A **Single End** **Triode Amplifier (SET)**?





## What's So Irresistible About A Single End Triode Amplifier (SET)?

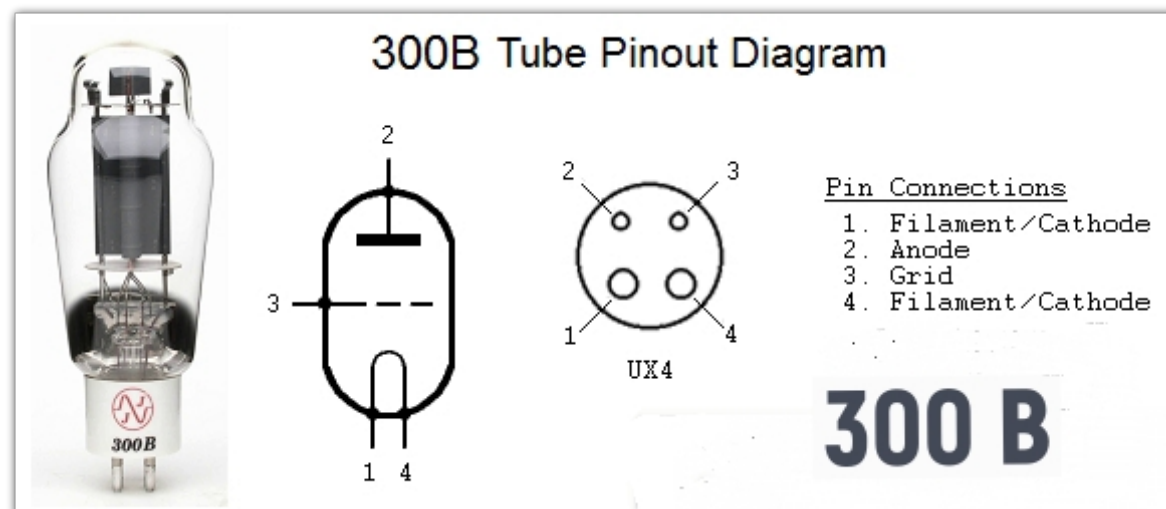
SET amplifiers with 300 B have achieved cult status because they play music in a very special and unique way. However, they also earn the nickname "flea watt amplifiers" because their total output power is eight watts. To get the magic of a SET amplifier, you must combine it with a very high efficiency speaker, at least around 95 dB or more.

highly beautiful sound as long as they have a high quality construction.

When it comes to more traditional speaker designs, there hasn't really been an extremely efficient design that works properly with a SET amplifier in the history of high-end audio, which makes the use of SET amplifiers very limited and compromised.

Historically, only two types of speaker designs combined well with SET amplifiers. The first was the high-efficiency speaker, which might sound quite exciting due to its speed and macrodynamics. However, I find that horn-loaded speakers have two serious drawbacks. Regardless of the type of amplifier you use, after a short period of time, these speakers can sound quite nervous and cause hearing fatigue. In addition, they produce a "horn coloration", as if the music came out of a megaphone.

The other speaker design that is often combined with a SET amplifier is the single controller speaker that has an efficiency close to 100 dB, has no crossover and has very easy impedance curves. These single controller designs produce a very real and



But let's go back for a moment. What is a SET amplifier? It is a vacuum tube-based design that uses a single triode tube per channel to produce an output without dividing the plus/minus parts of the musical signal on each channel. In contrast, a push/pull amplifier, which uses a pair (or more) of tubes, divides the plus/minus of the music signal, then has to rejoin them to form the full musical wave on each channel. Many argue that, once the plus/minus sign is divided, it is never re-assembled with the exact purity it contained beforehand. This is technically known as a crossover distortion, which ironically has nothing to do with real speaker crossings. In addition, almost all reference level SET amplifiers work in pure Class A, not AB, to further prevent this type of distortion.

The perceived high sound quality is mainly attributed to the simplicity and minimalist approach of the circuits involved, as well as to the triode vacuum tubes that are normally used. A SET fan describes it as "a Zen simplicity to reproduce the complexity of the music. Less is more."



The perceived high sound quality occurs due to the simplicity and minimalist approach of the circuits involved, as well as the triode vacuum tubes that are normally used.

The most popular SET amplifiers use the 300b, which produces about eight watts. This triode was invented and manufactured by Western Electric for its film amplifiers in the 1930s and 1940s.

If the triode tubes are configured correctly they can have a long service life (up to 10,000 hours).

These SET amplifiers take 20 to 30 minutes to fully heat up to make them sound their best.

Once combined all the factors mentioned, the sound they seek results from an indescribable truthfulness. There's no turning back. Many of them are fans who, after intense searching and numerous changes, have finished with a SET and a speaker of coaxial technology.

AUTHOR

Terry London