

output power nomogram

This nomogram has been prepared by the editors in response to regular requests from readers. When the required output power and the loudspeaker impedance are known, the nomogram can be used to find the associated voltage and current. It can actually be used as soon as any two of the variables are known—to find the remaining set.

\bar{P} is the continuous (sine wave) power
 R_L is the impedance of the loudspeaker
 V_{eff} is the effective (RMS) output voltage
 \hat{V} is the peak value of the output voltage swing

I_{eff} and \hat{I} are the effective and peak values of the current swing

The power supply must deliver at least $2\hat{V} + 4$ volts (measured to the lowest edge of any ripple waveform). For a stereo amplifier, it must be rated for at least I_{eff} . "Music power"—depending on the power supply and the output stage heat sink—can be anything from 1 to $20 \times \bar{P}$...

Example (see dashed line):

For 20 watts into 8 ohms we find $\hat{V} = 18$ volts and $I_{\text{eff}} = 1.6$ amps. So the power supply must be rated to deliver $2 \times 18 + 4 = 40$ volts at 1.6 amps. ■

