4.1 BANDWIDTH AND FREQUENCY RESPONSE

$$\text{dB} = 20 \log_{10}\left(\frac{A_{\text{out}}}{A_{\text{in}}}\right) \tag{4.17}$$

$$\frac{P_{\text{out}}}{P_{\text{in}}} = \frac{1}{2} \tag{4.19}$$

$$\frac{A_{\text{out}}}{A_{\text{in}}} = \sqrt{\frac{P_{\text{out}}}{P_{\text{in}}}} = \sqrt{\frac{1}{2}} \approx 0.707 \tag{4.20}$$

$$\text{dB} = 20 \log_{10}\sqrt{\frac{1}{2}} \approx -3 \text{ dB} \tag{4.21}$$