

**Table 1.2** Frequency Response of STC Networks

	Low-Pass (LP)	High-Pass (HP)
Transfer Function $T(s)$	$\frac{K}{1 + (s/\omega_0)}$	$\frac{Ks}{s + \omega_0}$
Transfer Function (for physical frequencies) $T(j\omega)$	$\frac{K}{1 + j(\omega/\omega_0)}$	$\frac{K}{1 - j(\omega_0/\omega)}$
Magnitude Response $ T(j\omega) $	$\frac{ K }{\sqrt{1 + (\omega/\omega_0)^2}}$	$\frac{ K }{\sqrt{1 + (\omega_0/\omega)^2}}$
Phase Response $\angle T(j\omega)$	$-\tan^{-1}(\omega/\omega_0)$	$\tan^{-1}(\omega_0/\omega)$
Transmission at $\omega = 0$ (dc)	$K$	$0$
Transmission at $\omega = \infty$	$0$	$K$
3-dB Frequency	$\omega_0 = 1/\tau$ ; $\tau \equiv$ time constant $\tau = CR$ or $L/R$	
Bode Plots	in Fig. 1.23	in Fig. 1.24