

3.17 We have  $|H(e^{j\omega T})|^2 = H(e^{j\omega T}) H^*(e^{j\omega T}) =$

$$= \frac{1 - a e^{j\omega T}}{e^{j\omega T} - a} \frac{1 - a e^{-j\omega T}}{e^{-j\omega T} - a} = \frac{1 - a e^{-j\omega T} - a e^{j\omega T} + a^2}{1 - a e^{j\omega T} - a e^{-j\omega T} + a^2} = 1$$