$$Q_6 = Q_{\cancel{ff}}^2 Q_{rr} \frac{Z_g^2}{Z_{orr} Z_g} 4\delta x^{4}$$

$$= Q_F^2 Q_{rr} \frac{Z_g}{Z_{orr}} \left(\frac{Z_g}{Z_g}\right)^2 4\delta x^{4}$$ same as Dan's formula.

Normal

$$Q_g = \frac{Z_K^2}{Re\, Z_{orr}^2} \frac{Z_g^2}{Z_g} 2\delta x^2$$ is this correct formula.

$$Q_{rr} = \frac{Z_K^2}{Re\, Z_{orr}}$$

$$= Q_{rr} \frac{Z_{orr}}{Z_{orr}^2} \frac{Z_g^2}{Z_g} 2\delta x^2$$

$$\boxed{Q_g = \frac{Q_{rr} Z_g^2}{Z_{orr} Z_g} 2^2 \delta x^2}$$ is this correct!

↳ see above, get add'l $Q_F^2\, 2\delta x^2$; need detuning >> effects

Pozar (6.26b) $\omega_0 L = Z_0 \frac{\pi}{2}$ for $\lambda/2$ line. short cir… look into s…

$$L = \frac{1}{\omega_0^2} \frac{4\omega_0 Z_0}{\pi}$$ $\lambda/4$;

$$\omega_0 L = Z_0 \frac{4}{\pi}$$

open or short $\lambda/2$: $\omega_0 L = Z_0 \frac{\pi}{2} * n$

shorted $\lambda/4$: $\omega_0 L = Z_0 \frac{\pi}{4}$ (n?) ; $\frac{1}{4}$, not $\frac{1}{2}$; because of 2x diff. lengths.

$$Z_{line} = Z_0\left(\frac{\pi}{2}, \frac{\pi}{4}\right)$$

Z_{in} ↑ as gets longer.