- ***Actual measurement of f_T difficult* - *measured indirectly***
- ***Measurement done at $f_x >> f_\beta$***, where ***β has dropped to about 5-10***
- Then, $f_T = \beta(f_x)f_x$
- Using $\alpha = \beta/(\beta + 1)$:

$$\alpha(j\omega) = \frac{\beta(j\omega)}{1+\beta(j\omega)} = \frac{\alpha_0}{1+ j\omega/\omega_\alpha}$$

α_0 [$= \beta_0/(\beta_0 + 1)$]: ***Low-frequency short-circuit common-base current gain***

$\omega_\alpha = (\beta_0 + 1)\omega_\beta$

- f_α [$= \omega_\alpha/(2\pi)$]: ***Alpha Cutoff Frequency***
- At $f = f_\alpha$, $\alpha = \alpha_0/\sqrt{2}$

- **Note**: ***f_α and f_T extremely close to each other***, with ***f_α marginally higher than f_T***, with ***both being much larger than f_β***
- ***Maximum Operable frequency***:

$$f_{max} = f_T\big|_{max} = \frac{1}{2\pi\tau_F}$$

➢ Known as the ***Transit Time Model***