Relationship of the forward transit time and the f_t of a bipolar transistor

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The equation relating the two quantities tf and f_t is shown below.

$$tf = 1/2\eth f_t - (kT/qI_c) [Cj_E + Cj_C \{ 1 +(qIc/kT)r_c' \}$$

Cj_E = Internal emitter base transition capacitance

Cj_C = Internal collector base transition capacitance

r_c' = Internal collector parasitic resistance

k = Boltzman's constant

q = Electronic charge