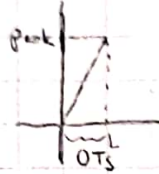


• RMS of Triangle wave form



$$\sqrt{\frac{1}{T} \int_0^T f^2(x) dx}$$

kx

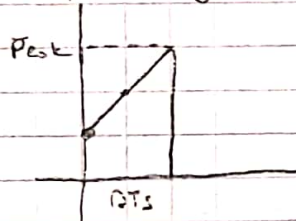
$$k^2 x^2 dx$$

$$k^2 \frac{x^3}{3} \Big|_0^{DTs}$$

$$\rightarrow \frac{1}{DTs} \frac{k^2 (DTs)^3}{3} = \frac{k DTs}{\sqrt{3}}$$

$\frac{V_s}{Lm}$

• RMS of trapezoid



$$y = kx + \left(\overbrace{I_{L,OC} - I_{L,ripple}}^A \right)$$

$$\sqrt{\frac{1}{DTs} \int_0^{DTs} (kx + A)^2 dx} = \sqrt{\frac{1}{DTs} \int_0^{DTs} k^2 x^2 + 2kxA + A^2 dx} =$$

$$k^2 \frac{x^3}{3} + kx^2 A + A^2 x \Big|_0^{DTs} = k^2 \frac{(DTs)^3}{3} + k(DTs)^2 A + A^2 DTs$$

$$\text{RMS of trapezoid} = \sqrt{\frac{k^2 (DTs)^3}{3} + k DTs A + A^2}$$