

$$A_e := \frac{E_{min} \cdot D_{max}}{B_m \cdot F \cdot N_p}$$

$$K_u \cdot A_w := \frac{N_p \cdot I_{prms}}{J} + \frac{N_s \cdot I_{srms}}{J}$$

$$A_e \cdot A_w := \frac{E_{min} \cdot D_{max}}{B_m \cdot F \cdot N_p \cdot K_u \cdot J} \cdot (N_p \cdot I_{prms} + N_s \cdot I_{srms})$$

$I_{prms}$  = rms primary current  
 $I_{srms}$  = rms secondary current

$I_{pavg}$  = average primary current

$$\Rightarrow A_e \cdot A_w := \frac{E_{min} \cdot D_{max}}{B_m \cdot F \cdot K_u \cdot J} \cdot \left( I_{prms} + \frac{N_s}{N_p} \cdot I_{srms} \right)$$

$$\Rightarrow A_e \cdot A_w := \frac{E_{min} \cdot D_{max} \cdot I_{pavg}}{B_m \cdot F \cdot K_u \cdot J} \cdot \left( \frac{I_{prms}}{I_{pavg}} + \frac{N_s}{N_p} \cdot \frac{I_{srms}}{I_{pavg}} \right)$$

$$\Rightarrow A_e \cdot A_w := \frac{P_{in} \cdot D_{max}}{B_m \cdot F \cdot K_u \cdot J} \cdot \left( \frac{I_{prms}}{I_{pavg}} + \frac{N_s}{N_p} \cdot \frac{I_{srms}}{I_{pavg}} \right)$$

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