“Transformers and Inductors for Power Electronics Theory, Design and Applications”

Chapter 2

p. 25 Remove first = sign in equation (2.1)
p.45 15 µm instead of 15 mm in three places;
replace z = 0 by z = 55 µm for Coils 1 and 2
replace z = 55 mm by z = 0 for Coils 1 and 4

Coils 1 and 2:  
\[ r_1 = a_1 = 1.15 \text{ mm}, \quad r_2 = a_2 = 1.75 \text{ mm}, \quad h_1 = h_2 = 15 \mu\text{m}, \quad z = 15 \mu\text{m}. \]

Coils 1 and 4:  
\[ r_1 = 2.00 \text{ mm}, \quad r_2 = 2.60 \text{ mm}, \quad h_1 = 15 \mu\text{m}, \quad a_1 = 2.00 \text{ mm}, \quad a_2 = 2.60 \text{ mm}, \quad h_2 = 15 \mu\text{m}, \quad z = 0. \]

p.51 Problem 2.2: 1.0 T should be 1.0 T
p.52 Problem 2.4: insert “The cross-sectional area of the solenoid is 1 cm²”

p.52 Problem 2.5: insert “Take N=25 turns”

Chapter 3

p.79 new text

The duty cycle is chosen to ensure that the switch stress is minimized, the ratio \( V_o/V_i \) should be approximately 0.5 as shown in Figure 3.9 [5] so that for \( D=0.314 \) \( N_p/N_s = a \) is

\[ a = \frac{V_i}{V_o} \frac{D}{1 - D} = \frac{325.3}{24} \frac{0.314}{1 - 0.314} = 6.2 \]

p.81 replace \( P_{cu,\text{max}} = 0.5 \text{ W} \) with \( P_{cu,\text{max}} = (k_{up}/k_u)P_{cu} = (0.0948/0.235)(1.0) = 0.403 \text{ W} \)

p.82 \( \mu_{\text{opt}} = \frac{B_{\text{max}}l_{\text{up}}K_{ip}}{\mu_0\sqrt{P_{cu,\text{max}}k_{up}W_{oa}/\rho_u MLT}} = \frac{(0.2)(12.4 \times 10^{-2})(0.4)}{(4\pi \times 10^{-7})\sqrt{(0.403)(0.155)(2.77 \times 10^{-2})/(1.72 \times 10^{-8})(11.3 \times 10^{-2})}} = 83.5 \)

\[ g_{\text{max}} = \frac{l_{oa}}{\mu_{\text{min}}} = \frac{(12.4 \times 10^{-2})}{83.5} 10^3 = 1.48 \text{ mm} \]

p.84 Remove Problems 3.3 and 3.4 ( they already appear in chapter 1)
p.84 Problem 3.7: change 20 kHz to 25 kHz
p.84 Problem 3.8: change 70 kHz to 60 kHz; change 620 µH to 1200 µH; change 30°C to 45°C

Chapter 4

p.121 Problem 4.5: change triangular to tristate

Chapter 5

p.132 Remove (0.4) from \( J_s = \) in the numerator, it appears two times
p.138 \( V_{\text{rms}}/K \) should read \( V_{\text{rms}}/K \) and \( V_{dc} \) should be replaced by \( V_i \) in \( V_{\text{rms}} = \) under Winding Design
p.143 \( I_{dc} = I_0 \) should read \( I_s = I_0 \)
p.143 change 1.5 V to 1.0 V in “assuming a forward voltage drop of 1.5 V for the diode”
p.144 In \( A_p = (1.0)(0.4)(48.2\ldots) \) should read \( (1.0)(48.2\ldots) \)
p.151 Problem 5.5: change 25°C to 30°C
p.152 In the MATLAB program \( Vw=0.28e^-2 \) should read \( Vw=28e^-2 \)
Chapter 6
p.169 in Equation 6.43: \( R_{dc}(NI)^2 \) should read \( R_{dc}I^2 \)
p.175 Under Figure 6.11 remove the first sentence – The plot in figure 6.9 for the pulsed waveform in Figure 6.8.
p.181 In \( \Delta_{opt} = (5p^2-1)15 \) by \( (5p^2-1)/15 \)
p.183 New version of Figure 6.16

Visio version available
p.186 in Equation 6.82: add a bracket, coth(\( \Delta(1+j) \)) should read coth(\( \Delta(1+j) \))

Chapter 7
p.202 p.202 change 1.7 to 2.7 in two places
change 0.588 cm to 0.370 cm in two places
change 2.93 MHz to 7.39 MHz
p.204 In Equation (7.28) the limits \( 2\pi \) to 0 should be 0 to \( 2\pi \)
p.206 In \( \Delta B = \) replace \( 2.125\times10^{-4} \) by \( 1.125\times10^{-4} \)
p.206 In \( P_v = \) replace 5.56 by 3.964 and 0.198 by 0.32
p.206 In Example 7.5 first line, Example 5.3 should read Example 5.2
p.226 Remove first = sign in Equation (2.1)

Chapter 8
p.231 Example 8.4: \( I_{\infty} = 0.53 \) A should read \( I_{oc} = 0.53 \) A
\( P_1 = 18.5 \) W should read \( P_{oc} = 18.5 \) W
p.244 Problem 8.2:
p.245 Table 8.4: remove columns \( Z(\Omega) \) and \( L_{ac}(mH) \)
p.244 Problem 8.2: add "Take \( N = 700 \) turns on a toroidal core with \( A_c = 5.24 \) cm^2\) and \( l_c = 33.1 \) cm"

Chapter 10
p.331 Example 10.9: Equation 10.55 should be Equation 10.52 in two places
p.331 Problem 10.6: Add “and adjusting the power level”

Appendix A
Add COILCRAFT [http://www.coilcraft.com](http://www.coilcraft.com) to the list