Microelectronic Circuit Design
5th Edition Errata - Updated 8/28/16

Chapter Text

Page 154: In the exercise, $V_{DS} = 0.25$ V

Page 170: Last exercise, $P^*/A^* = \alpha^3 P/A$

Page 171: Exercise (b) 4.97 THz

Page 187: Exercise should refer to Fig. 4.30

Page 199, last exercise: (1.25 mA, 7.00 V)

Page 284 - Die photo caption:

Intel Ivytown die photo. The processor has 4.3 B transistors, 15 cores and 37.5 MB shared L3 cache implmented in Intel's 22 nm 9-metal Hi-K metal-gate tri-gate process technology. Courtesy of Intel Corporation.

Page 305, Second exercise: 3.61 V

Page 315, Fig. 6.24: Velocity saturation values for load transistors:

1/1.56 → 1/1.43; 1/3.81 → 1/3.30; 1.28/1 → 1.43/1

Page 325: The load device should have its gate connected to its source.

Page 339 Exercise: 0.505 ps

Page 341 Exercises: 5.72 mW, 2.65 mW; 412/1, 508/1, 106 mW

Page 359: The die photo caption should read: IBM z196 Processor Die.

Page 423: 108 μA; 108 μA

Page 432: 59.5 μA, 357 mW; 59.5 μA, 357 mW

Page 492: Eq. 9.64: 0.92 mA → 3.2 mA and 5.03 mW → 10.7 mW

Eq. 9.66: PDP = (10.7 mW)(10ns) = 107 pJ

Fig. 9.41, upper part: The current from the 5-V supply should be 3.2 mA

Page 535, last exercise: $[-2.5 + 7.5 \sin(1000\pi t)]$ V

Page 592, first exercise: 100, 1000, 99.9, 9.99 V, 99,9 μV

Page 609, first exercise, last answer: 1.37 Ω; last exerecise: 24.5 MΩ, 1.57 Ω

Page 615, last exerecise: 9.21 Ω, 0.464 Ω

Page 618, Ex. 11.7: R_2 in the problem statement is not needed, and $R = R_1$.

Page 654: $A_v(s) = \dfrac{10^7 \pi}{s + 3.20x10^4 \pi}$

Page 707, first exercise: $\frac{K}{3-K}\angle 90^o$

Page 711, second exercise: -1; -1; K/(3-K)

Page 726 exercise: 511 pF; 25 pF; 5000 μm^2

Page 775: (1.45 mA, 3.57 V); 2.89 V

Page 886, last exercise: 1/20

Page 956, second exercise: 0.173 fA

Page 978, first exercise: $V_{CE1} = 15.0$ V

Page 1011, thrid exercise: -10.6 V

Page 1022: Fig. 15.54 should be Fig. P15.54

Page 1040: 4.97 → 4.30

Page 1152, last exercise: 4.31 MHz

Page 1244 exercise: "voltage source v_i in series …"; Answers: 304 Ω

Page 1246, first exercise: 18.8 MHz

Page 1257, second exercise: 565 Hz → 584 Hz

Page 1264: All FET symbols should be replaced with those of enhancement-mode devices.

Page 1268, third exercise: +0.85 mV, -0.49 mV

Problem Statements

Prob. 3.2 The problem statement should say "with $N_D = 10^{16}/cm^3$"

Prob. 3.82 should refer to the Exercise in Sec. 3.13.5.

Fig. P6.31 3.3 V → 2.5 V and 1 ns → 0.8 ns

Probs. 5.89, 5.90, 5.91, 5.92 should refer to Appendix A.

Prob. 6.57(b): Repeat Prob. 6.57(a) …

Prob 6.96: Reference inverter is in Fig. 6.24.

Prob. 6.109 should refer to Fig. 6.24(b).

Prob. 6.117: The load device should have its gate connected to its source.

Prob. 6.139: $V_L = 0.20$ V

Prob. 6.142: $V_L = 0.20$ V

Prob. 7.8(c) $v_I = v_O = 0.9$ V

Prob. 7.43 Use $C_L = 100$ fF on each inverter.

Prob. 7.118 should refer to Fig. 7.41.

Probs. 9.55 & 9.56 should refer to Fig. 9.25.

Prob. 10.110 should refer to Fig. 10.35, and $V_s(s)$ → $V_i(s)$.

Prob. 10.111 should refer to Fig. 10.35.

Probs. 11.53 – 11.56. Note that the circuit labels in Fig. P11.8(b) have been interchanged from those in Ex. 11.7.

Prob. 11.54: Simulaiton of Prob. 11.53 not 11.43.

Prob. 11.84: The middle resistor in Fig. P11.84 should be 20 kΩ, and part (b) should refer to the 20 kΩ resistor.

Prob. 12.12 2-kΩ resistors → 3-kΩ resistors

Prob. 13.148 $I_{DSS} = 1.2$ mA.

Prob. 14.17 Assume $(V_{GS} - V_{TN}) = 0.5$ V

Prob. 14.30 Assume $(V_{GS} - V_{TN}) = 0.5$ V

Prob. 14.35 Table 14.4 should be Table 14.5

Prob. 14.40 Assume $(V_{GS} - V_{TN}) = 1$ V

Prob. 14.61 Part (b) should be 1 mA.

Prob. 14.123 Ignore part (a) at end of problem.

Prob. 14.133 The problem should refer to Prob. 14.81 rather than 14.78.

Prob. 15.24 should refer to Fig. P15.25

Prob. 15.25 should refer to Fig. P15.25

Prob. 15.57 This problem to refer to the circuit in Fig. P15.67.

Prob. 15.90 $K_n = 5$ mA/V^2

Prob. 15.133 should refer back to Prob. 15.131

Prob. 15.134 should refer back to Prob. 15.133.

Prob. 15.135 should refer back to Prob. 15.131.

Prob. 16.88: $\lambda_m \rightarrow \lambda_n = 0.06$/V and $\lambda_p = 0.05$/V. Use SPICE for Part (b).

Fig. P16.108: BA$\rightarrow$ 8A and 4.82 kΩ $\rightarrow$ 3.51 kΩ

Prob. 16.129(b): Set $(W/L)_{GG} = 1/2$

Probs. 17.39 & 17.40: $g_m R_L$ should be positive: $g_m R_L = +20$

Prob. 17.63: Use Q-Point and transistor parameters from Ex. 17.6

Prob. 16.72: Use $\beta_o = 120$ and $V_A = 50$V.

Prob. 16.73: Use $\beta_o = 120$ and $V_A = 50$V.

Prob. 17.90: Use ±10-V supplies where needed.

Prob. 16.117 $R_{SS} = 25$ MΩ

Prob. 17.123: Use KP = 100mA/V^2 and VTO = 1 V.

Prob. 18.24: Use 10 μF for the added capacitor.