Fundamentals of Microelectronics

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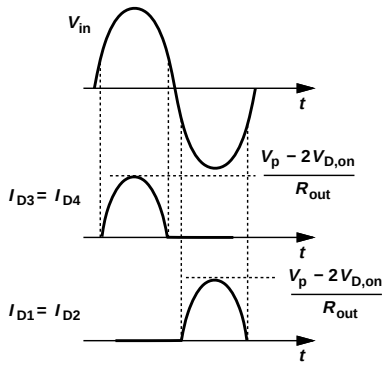
Errata Sheet for Second Edition

- Eq. (2.105): change 82 μA to 816 μA.
- In Fig. 2.39, change the values on the vertical axis from 1.3 and 2.2 to 0.13 and 0.175, respectively.
- In Fig. 3.1(a), the words inside the box should read Black Box.
- In Fig. 3.13(b) change the labels to V_D and I_D.
- Fig. 3.14: add caption (c) circuit with ideal diode model.
- Example 3.13: change to: Solving (3.12) and (3.14) together yields
- In Fig. 3.17(d), the quantity on the left side should be multiplied by -1.
- Fig. 3.18: change the label of grounded resistor in (a), (d), (e), and (g) to R_2.
- Above Eq. (3.78): change to: Since $t_4 - t_1$ is equal to ...
- Example 3.36, change to: From $t = t_2$ to $t = t_3$, the diode remains off
- Figure 3.41 should be corrected as shown below:



- In Eq. (4.66), change N_E to N_B.
- In Fig. 4.38(d), I_B should point to the left.
- In Fig. 4.46(b) omit the ground connection on top of $r_{\pi 2}$ and change R_C to R_{C1}.
- In Eqs. (5.298) and (5.299), change the 1 in the denominator to $1/R_E$.
- In Table 6.1, third column, change $V_{GS} - V_{TH}$ Constant to I_D Constant
- In the last paragraph on p. 275, change 6.8(b) to 6.8(c).
- In Fig. 6.11(b), change $V_D - V_G$ to $V_G - V_D$.
- In the first paragraph on p. 285, the third sentence should read: ... the pinch-off point slightly toward the source.
- (6.72) should read

$$(g_{m1}v_x + \frac{v_x}{r_{O1}})^{-1}v_x \tag{1}$$

Similarly, (6.75) should read

$$(g_{m2}v_y + \frac{v_y}{r_{O1}})^{-1}v_y \tag{2}$$

- Above (7.94):
  The corresponding gate-source overdrive voltage is obtained from (7.84): $V_{GS} - V_{TH} = 250$ mV, yielding a gate voltage of 1.15 V.
- In (7.156) change the r_{O1} on the far right to r_{O2}.
- Paragraph below Eq. (8.66): change xactly to exactly.
- In Fig. 8.26(a), the horizontal axis label should read $V_{in1} - V_{in2}$.
- In Eq. (8.85), change the second + sign in the denominator to $\times$
- In Eq. (8.90), change 635 to 7.25
- In Chapter 9 problem set, change "Cascade" to "Cascode"
- In Eq. (10.149), the left-hand side should be squared.
- In Fig. 10.33(b), change R_C to R_D.
- In Chapter 10 problem set, change "Cascade" to "Cascode"
- In Eq. (11.2), change the positive signs to negative signs.
- In (11.17), change $\omega^2\omega_{p2}^2$ to ω^2/ω_{p2}^2.
- In Fig. 11.29(b), add R_S in series with the input of the CS stage.
- In (11.111), add C_{GS} to the denominator of the fraction.
- Change Eq. (11.150) to

$$Z_{out} = R_L || \frac{1}{(C_{GD2} + C_{DB2})s}. \tag{3}$$

- In Eq. (11.156), change C_{SS} in the numerator to C_S.
- In Fig. 12.16(d), remove the short across R_{in}.
- Section 12.6.1, first sentence should read: Illustrated in Fig. 12.29, this ...
- Section 12.8.4, end of first paragraph: add: We assume K has no phase shift and hence $\angle KH = \angle H$.
- Fig. 13.10: the waveform for V_Y should be flipped vertically.
- Eq. (13.124), change C_2C_2 in the denominator of the first fraction to C_1C_2.
- Above Eq. (13.26), change Eq. (13.23) to (13.22).
- Eqs. (13.29) and (13.30) should read

$$V_X = (\frac{V_Y}{R_2} + \frac{V_{out}}{R_3})\frac{1}{Cs} + V_Y \tag{4}$$

$$= (\frac{1}{RCs} + 1)^2 + \frac{V_{out}}{RCs}. \tag{5}$$

Eq. (13.31) should read

$$V_{in} = \frac{V_{out}}{R^3C^3s^3} + \frac{5V_{out}}{R^2C^2s^2} + \frac{6V_{out}}{RCs} + V_{out} \qquad (6)$$

and Eq. (13.32) should read

$$\frac{V_{out}}{V_{in}} = \frac{(RCs)^3}{(RCs)^3 + 6(RCs)^2 + 5RCs + 1}. \qquad (7)$$

Eq. (13.33) should read

$$\angle\frac{V_{out}}{V_{in}} = 3 \times 90^\circ - \tan^{-1}\frac{5RC\omega - (RC\omega)^3}{1 - 6R^2C^2\omega^2}. \qquad (8)$$

Eq. (13.34) should read $1 - 6R^2C^2\omega_1^2 = 0$.
Eq. (13.35) should read

$$\omega_1 = \frac{1}{\sqrt{6}RC}. \qquad (9)$$

Eq. (13.36) should read

$$\frac{\sqrt{6}^{-3}A}{5/\sqrt{6} - \sqrt{6}^{-3}} = 1. \qquad (10)$$

Eq. (13.37) should read $A = 29$. Also, change R_S in the footnote to R_3.

- Eq. (15.6): change the numerator to $L_1C_1R_1s^2$.
- Example 15.5: change to: ... must lie in the left half plane.
- Eq. (15.15): change the positive signs to negative signs.
- Eq. (15.33): remove the square root sign.
- Eq. (15.127): remove power of 2 for R_Y.
- In (17.167) and (17.168), change R_S to R_S/R_1.
- In (3.30), change $-V_B$ to $+V_B$.
- In Fig. 3.61(c), change turns off to turns on and vice versa.
- In caption of Fig. 4.9, change V_C to V_3.