

This document contains the Errata for the textbook

Analog Circuit Design – Discrete & Integrated

The **Hardcover Edition** (shown below at the left and published by McGraw-Hill Education) was preceded by a **Spiral-Bound Preproduction Edition** (shown below at the right and published by McGraw-Hill Learning Solutions; this edition was created for classroom usage while the production of the hardcover edition was underway). This document contains the Errata for both editions, as follows:

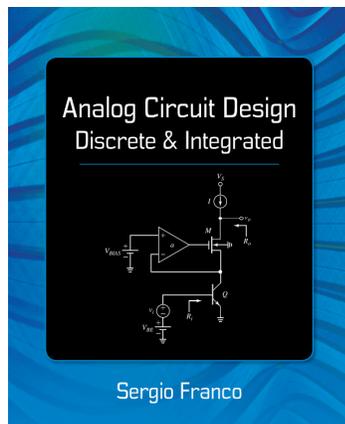
Errata for the 1st Printing of the **Hardcover Edition**, scroll down to page 2

Errata for the **Preproduction Edition**, scroll down to pages 4-8

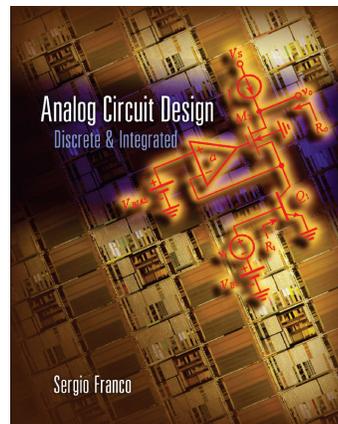
If you find any additional errata, please let me know, so I can update this document. My email is:

sfranco@sfsu.edu

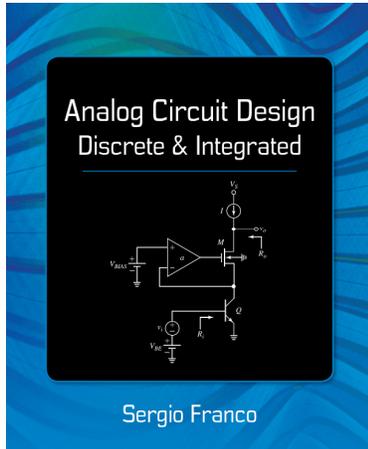
Thanks, Sergio Franco



Hardcover



Spiral-bound



Analog Circuit Design Discrete & Integrated

Sergio Franco
San Francisco State University

McGraw-Hill Education, ©2015
ISBN 978-0-07-802819-9

First-Printing Errata (Updated October 14, 2017)

Page 7, caption of Fig. 1.7: change Example 1.1*b* to Example 1.2*b*

Page 70, Eqs. (1.81) and (1.82): change v_{be} 1.1*b* to v_d (thrice)

Page 92, 10th line from top: change Ref. [11] to Ref. [6]

Page 101, Problem 1.58, 2nd line from bottom: change $R_1/(R_1 + R_2)$ to $R_2/(R_1 + R_2)$

Page 114, caption of Fig. 2.3: append the following text: The B-E junction is forward-biased with 0.7 V, and the B-C junction is reverse-biased with 0.2 V (or higher), which should ensure operation well in the reverse region.

Page 119, 3rd line above Eq. (2.8): delete the text: with a voltage $v_{BC} \leq 0.2$ V or, equivalently,

Page 123, Eq. (2.14) as well as in the preceding line and in the preceding equation: change N_{AE} to N_{AB} (thrice)

Page 140, 2nd line from bottom: change $V_{CE} = V_{BE} - V_{CE}$ to $V_{CE} = V_{BE} - V_{BC}$

Page 159, parenthesized term in 11th & 13th line from top: drop $/I_C$ so it reads as $(1 + v_{ce}/V_A)$

Page 160, part (b) of Solution: change the first part of the equation as $i_c = (e^{\pm v_{be}/V_T} - 1)$

Page 177, end of line preceding Section 2.8. Change discrete device⁶ to discrete device⁷

Page 183, 3rd line from bottom: change Eq. (2.52) to Eq. (2.48)

Page 186, 3rd line from bottom: change $1/(j2\pi f_{sig})$ to $1/(j2\pi C f_{sig})$

Page 200, caption of Fig. 2.72: change CE-EC to CE-CC

Page 201, 4th line from bottom: change Ref. [12] to Ref. [4]

Page 300, 2nd line from the top: change $1/(j2\pi f_{sig})$ to $1/(j2\pi C f_{sig})$

Page 378, 1st line: change I_{LAD} to I_{LOAD}

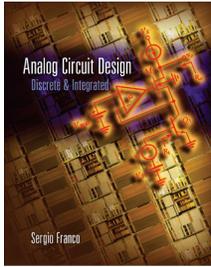
Page 481, line after Eq. (5.10): change $I_{C6} = \alpha_6(\dots$ to $I_{C16} = \alpha_{16}(\dots$

Page 484, Fig. 5.10(a): change the value of R_6 from 27 k Ω to 27 Ω (drop “k”)

Page 454, Problem 4.34, last line: change r_{22} to r_{o2}

Page 555, Problem 5.8, 2nd line: change Fig. 1.4 to Fig. 5.4

Page 824, Problem 7.71(a), 2nd line: change Fig. 7.74 to Fig. 7.94; 3rd line: drop word “and”



Analog Circuit Design Discrete & Integrated

Sergio Franco
San Francisco State University

The McGraw-Hill Companies – Learning Solutions, 2011
ISBN 978-0-07-340894-1

Errata

1st Printing (December 14, 2011) (Updated November 27, 2015)

Ch. 1, p. 36, 3rd equation from bottom: drop $\phi_0 - \phi$ so it reads as $\phi_0 = \phi_n - \phi_p$

Ch. 1, p. 38, 2nd text line from bottom: change (N_D/N_A) to $[N_D/(N_A+N_D)]$

Ch. 1, p. 53, 2nd line after Eq. (9.5): change Eq. (3.4) to Eq. (4.6); next line: change Eqs. (3.5) and (3.13) to Eqs. (4.5) and (4.13)

Ch. 1, p. 57, line after Eq. (10.1): change Eq. (9.7b) to Eq. (9.2),

Ch. 1, p. 59, Remark 2, line before last: change Eq. (10.3) to Eq. (10.1)

Ch. 1, p. 69, Example 11.2, 2nd line: change Eq. (11.7) to Eq. (11.8)

Ch. 1, p. 83, two lines above Eq. (13.6): change Eq. (13.2) to Eq. (13.4)

Ch. 1, p. 86, 5th paragraph: change circuit of Fig. (9.3a) to circuit of Fig. (10.3a)

Ch. 1, p. 93, Problem 4.2, 2nd line: change Fig. 3.4a to Fig. 4.4a

Ch. 1, p. 95, Problem 8.1, 2nd line: change Example 4.2 to Example 5.2

Ch. 1, p. 96, Problem 9.5, 1st line: change Fig. P8.4 to Fig. P9.4

Ch. 1, p. 98, 3rd line from bottom: change 9.10 to 10.10 and Fig. P9.7 to Fig. P10.7

Ch. 1, p. 100, Problem 11.6, 1st line: change Fig. P2.1 to Fig. P2.2

Ch. 1, p. 103, Problem 13.1, 1st line: change Fig. 12.4a to Fig. 13.4a; Problem 13.2, 1st line: change Fig. 12.4a to Fig. 13.4a

Ch. 2, p. 13, 2nd line after Eq. (2.12): drop thumb and run in to read as thermal generation of electron-hole pairs

Ch. 2, p. 18, 8th line after Eq. (2.16): change Fig. 3.5 of Ch. 1 to Fig. 4.5 of Ch. 1

Ch. 2, p. 46, 3rd line from the end of Solution: change $i_{C-V_{CE}}$ to $i_{C-V_{BE}}$

Ch. 2, p. 48, 4th line: change Eq. (6.4) to Eq. (6.8)

Ch. 2, p. 53, 2nd line of Solution: change Eq. (6.17a) to Eq. (6.18a)

Ch. 2, p. 56, 3rd line: change Example 9 to Example 5.2; caption of Fig. 7.2: BJT biasing via I_E .

Ch. 2, p. 67, inside equation preceding Eq. (8.11): change $(R_C//R_L)G_m v_b$ to $(R_C//R_L)i_c$

Ch. 2, p. 69, 8th line from the top: change $1/j2\pi f_{sig}$ to $1/(j2\pi C f_{sig})$

Ch. 2, p. 73, Example 9.1, part (b): change Eq. (6.3) to Eq. (6.7)

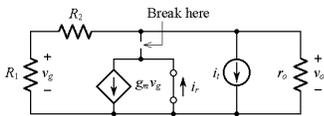
Ch. 2, p. 92, Problem 5.2, 6th line: change Eq. (5.3) to Eq. (5.4)

- Ch. 2, p. 99, Problem 8.10, 3rd line: change** Fig. P8.8 **to** Fig. P8.10
- Ch. 3, p. 12, 1st text line from bottom: change** ($q < 0$) **to** ($q > 0$)
- Ch. 3, p. 30, Example 4.2 (f): change** V_{GS} **to** V_{SG}
- Ch. 3, p. 31, after 2nd equation: drop** or 0.5 V **so it reads as** or $0.5V_{SD}^2 - 3V_{SD} + 4 = 0$.
- Ch. 3, p. 40: 1st text line: change** $2 \mu A/V4$. **to** $2 \mu A$. **Last line of Solution: drop** $\mu A/V4$
- Ch. 3, p. 52, before Eq. (6.9): change** Eq. (6.2) **to** Eq. (6.7). **9th line of Solution: change** (see Fig. 6.3b) **to** (see Fig. 6.4b)
- Ch. 3, p. 61, Solution: 1st line: change** (7.6) **to** (7.5). **2nd line: change** ($11 \ll 100$) **to** ($12 \ll 100$); **leftmost formula: insert** – **right after** \cong
- Ch. 3, p. 66, 3rd line from bottom: change** Eq. (6.4) **to** Eq. (6.8)
- Ch. 3, p. 72, 3rd line above Eq. (8.12):** $1/j2\pi f_{sig}$ **to** $1/(j2\pi C f_{sig})$
- Ch. 3, p. 74, line before Solution: change** Eq. (7.2) **to** Eq. (7.6)
- Ch. 3, p. 77, line before Eq. (9.6) should read as:**
 $-g_m(R_L//r_o)(v_g - v_s)$, and that the CG configuration has $v_g = 0$, we get
- Ch. 3, p. 91, Problem 3.9, 4th line: change** Eq. (4.12) **to** Eq. (5.12)
- Ch. 3, p. 101, Problem 10.1, 1st line: change** Fig. 10.1 **to** Fig. P10.1
- Ch. 3, p. 102, Problem 10.4, 3rd line: change** Figure P10.5 **to** Figure P10.4
- Ch. 3, p. 103, Problem 10.7, 2nd line: change** Problem 10.5 **to** Problem 10.6
- Ch. 4, p. 18, 4th line above Exercise 2.2: change** Example 2.3 **to** Exercise 2.3
- Ch. 4, p. 24, 4th line after Eq. (3.1): change** Eqs. (4.12) and (5.2) **to** Eqs. (5.12) and (6.2)
- Ch. 4, p. 27, 4th line above Fig. 3.4: change** $v_{gs} = -v_s$ **to** $v_{bs} = -v_s$
- Ch. 4, p. 31, Example 3.5: change** 85 mA/V^2 **to** $75 \mu A/V^2$; **Solution: change** and (3.1) **to** and (3.2)
- Ch. 4, p. 33, 2nd line after Eq. (3.17): change** Example 3.2 **to** Example 3.3
- Ch. 4, p. 34, Solution, 3rd line: change** Eq. (3.3) **to** Eq. (3.4); **4th line: delete the entire line after** $V_{SB(1)}$
- Ch. 4, p. 41, line before Eq. (4.11): change** Using the more accurate expression of Eq. (2.23) we write **to** A more accurate expression is $R_o \cong (\beta_{02}r_{o2})//r_{\mu}$. Using Eq. (2.3), we write
- Ch. 4, p. 44, 8th line above Eq. (4.16a): change** V_{B2} and V_{B2} **to** V_{B2} and V_{G2}
- Ch. 4, p. 56, paragraph after Eq. (5.21): change** Fig. 5.5b **and** Fig. 5.5a **to** Fig. 5.7b **and** Fig. 5.7a
- Ch. 4, p. 69, 2nd line above Eq. (7.12): change** Eq. (7.6) **to** Eq. (7.4)
- Ch. 4, p. 78, Solution (b): change** $0.7/50) = 0.9862$ **to** $0.7/80) = 0.99910$
- Ch. 4, p. 86, 3rd line after Eq. (9.10): change** Q_3/M_3 **to** Q_2/M_2
- Ch. 4, p. 99, 4th line after Fig. 11.3: change** resistance v_{G1} **to** resistance R_o
- Ch. 4, p. 106, Problem 2.7, 1st line: change** Fig. 2.4 **to** Fig. P2.7; **p. 107, Fig. 2.7: change** 2.7 **to** P2.7
- Ch. 4, p. 112, Problem 4.16, 1st line: change** Fig. P4.15 **to** Fig. P4.16
- Ch. 4, p. 122, Problem 8.13, 5th line: change** Fig. 8.5a **to** Fig. 8.4b
- Ch. 5, p. 12, 2nd line before Eq. (1.19b): change** Eq. (1.18a) **to** Eq. (1.19a); **p.13: line before Eq. (1.20b): change** Eq. (1.21a) **to** Eq. (1.20a)

- Ch. 5, p. 20, delete 3rd and 4th line after Fig. 2.3 (repeated lines)
- Ch. 5, p. 21, 3rd line: change Fig. 2.1 to Fig. 2.2
- Ch. 5, p. 24, 2nd line above Eq. (3.1): change mirrored out of the **to** mirrored into the; 2nd line below Eq. (3.1): change Fig. 2.7 to Fig. 3.4
- Ch. 5, p. 25, line before Eq. (3.4): change Fig. 3.1 to Fig. 3.2
- Ch. 5, p. 26, 5th line before end of solution: change Eqs. (2.10) and (2.11) to Eqs. (3.2) and (3.3); 2nd line before end of solution: change Eqs. (1.13) to Eqs. (3.4) and (3.5)
- Ch. 5, p. 37, 3rd line of Solution: change 252.5 mA to 252.5 μ A
- Ch. 5, p. 41, 2nd line and 4th line: change Fig. 5.3 to Fig. 5.5; line before Eq. (5.8): change Eq. (8.6) to Eq. (9.6)
- Ch. 5, p. 44, Solution: change 10 at the leftmost side of the equation to (10 + 1) and recalculate R_2
- Ch. 5, p. 52, 9th line from the bottom: change Fig. 6.8 to Fig. 6.9
- Ch. 5, p. 53, 5th line after Fig. 6.9: change $0.5R_X$ to R_X (twice); 6th line: change the numerator terms $I_X -$ and $1 -$ to $I_X +$ and $1 +$, and change the denominator terms $I_X +$ and $1 +$ to $I_X -$ and $1 -$
- Ch. 5, p. 58, 3rd line: change v_{OD} to v_{ON} ; 6th line above Fig. 7.5: change M_{16} to M_{10}
- Ch. 5, p. 61, 12th line from bottom: change likewise V_{B78} to likewise V_{B56}
- Ch. 5, p. 76, Problem 1.1, 1st line: change Fig. 1.8 to Fig. 1.6
- Ch. 5, p. 78, Problem 1.14, 1st line: change Fig. P1.6 to Fig. P1.14
-
- Ch. 6, p. 3, 5th line: change Fig. 5.2b to Fig. 6.2b
- Ch. 6, p. 4, 4th line: change Fig. 5.3b to Fig. 6.3b
- Ch. 6, p. 12, 3rd line after Eq. (2.5): drop , where x_p if the SCL portion extending into the channel side
- Ch. 6, p. 13, 3rd line of 2nd paragraph: change Eq. (2.5) to Eq. (2.7)
- Ch. 6, p. 15, 7th line below Eq. (2.10) change Eq. (2.5) to Eq. (2.7); 2nd line from bottom: change Eq. (1.14) to Eq. (1.15)
- Ch. 6, p. 16, 2nd line after Fig. 3.1: change 3.1a and 3.1b to 3.1b and 3.2b
- Ch. 6, p. 22, 3rd line of Solution: change Eq. (2.7b) to Eq. (2.9b)
- Ch. 6, p. 24, 1st line after Eq. (3.15): change Eq. (2.7) to Eq. (2.9)
- Ch. 6, p. 30, 2nd line after Eq. (4.8b), and p. 31, 3rd line after Eq. (4.11): change $M_2-M_3-M_4$ to $M_1-M_3-M_4$
- Ch. 6, p. 35, 3rd line after Fig. 5.3: change 4.64/673 to (4.64/673)400
- Ch. 6, p. 37, Eq. (5.9b), change $Z_{i0}/Z_{i\infty}$ to $(Z_{i0}/Z_{i\infty})\omega_{pi}$
- Ch. 6, p. 39, last denominator: change $1 + 1/(j\omega R_{sig}C_{gs})$ to $1 + j\omega R_{sig}C_{gs}$
- Ch. 6, p. 40, line after Eq. (6.1b), change Eq. (2.7) to Eq. (2.9)
- Ch. 6, p. 42, caption of Fig. 6.5: change Example 5.1 to Example 6.1
- Ch. 6, p. 46, line after Eq. (7.3), change Eq. (7.4) to Eq. (7.3)
- Ch. 6, p. 47, 10th line from top: change Example 4.4 to Example 4.3; bottom line: change Example 3.1 to Exercise 3.1
- Ch. 6, p. 49, Exercise 7.1: change Example 5.2 to Example 6.1
- Ch. 6, p. 51, 3rd line after Fig. 7.8: change Fig. 2.2 to Fig. 2.3
- Ch. 6, p. 53, 1st line of Example 7.5: change Fig. 7.7a to Fig. 7.10a

- Ch. 6, p. 58, 4th line from bottom: change Eq. (8.6) to Eq. (8.5)
- Ch. 6, p. 63, 2nd line: change Eq. (2.10) to Eq. (3.2); 4th line: change Fig. 2.4 to Fig. 3.1; 5th line of Solution: change Example 2.2 to Example 3.1, 3,168 V/V to 2,0883 V/V, 7.92 M Ω to 5.22 M Ω , and recalculate f_b and f_i accordingly
- Ch. 6, p. 71, Fig. 10.3 caption: drop the second line (of PSpice...)
- Ch. 6, p. 104, Problem 5.5, 1st line: change Fig. 5.7a to Fig. 5.6a
- Ch. 6, p. 105, Problem 6.5, 1st line: change Fig. 6.7 to Fig. 6.6b
- Ch. 6, p. 108, Problem 9.6, 1st line: change Example 2.2 to Example 3.1

- Ch. 7, p. 17, Solution: change $1 + 10^3/R_1$ to $1 + 1200/R_1$
- Ch. 7, p. 22, two lines before and four lines after Eq. (3.6): change v_o/i_o to v_o/r_o
- Ch. 7, p. 17, 3rd line before Eq. (4.1a): change Eqs. (3.13) and (3.14) to Eqs. (3.11) and (3.12)
- Ch. 7, p. 40, Equation preceding Eq. (4.9): change v_ε to v_d and v_i to v_ε ; also, change v_i to v_ε in Eq. (4.9) and in the line following it.
- Ch. 7, p. 42, 3rd line of Solution: change v_ε to v_π and v_i to v_ε
- Ch. 7, p. 44, 1st and 2nd line after Eq. (4.14): change Eq. (3.14) to Eq. (3.4), and Eq. (3.15) to Eq. (3.5)
- Ch. 7, p. 45, 1st line of Solution: change $r_o = 1.0 \text{ k}\Omega$ to $r_o = 100 \Omega$
- Ch. 7, p. 46, 1st line of Solution: change $g_m r_\pi = 5000/25 = 200$ to $g_m r_\pi = 4000/25 = 160$
- Ch. 7, p. 50, 12th line from bottom: change Q_4 to Q_1
- Ch. 7, p. 59, Fig. 5.8b: change the short-circuit to an open-circuit
- Ch. 7, p. 62, second half of Eq. (5.16): change v_o/v_i to v_o/i_i ; also, render Fig. 5.12a as follows:



- Ch. 7, p. 85, last equation of the Solution: change the rightmost numerator from G_{m2} to $G_{m2}/2\pi$
- Ch. 7, p. 87, 2nd line above Eq. (9.1): change Eq. (8.8a) to Eq. (8.9)
- Ch. 7, p. 91, 5th line from bottom: change transmit I_{fw} to transmit I_{rv}
- Ch. 7, p. 95: 5th line denominator: change 1×10^{-12} to 1.7×10^{-12} ; 6th and 9th line: change $R_c = 2.0 \text{ k}\Omega$ to $R_c = 1.617 \text{ k}\Omega$; change subsequent values to $f_x = 35.2 \text{ MHz}$, $\phi_x = -107.2^\circ$, $\phi_m = 72.8^\circ$
- Ch. 7, p. 97, Eq. (9.18): change C_L to C_c ; ditto in Fig. 9.11 caption, in the line preceding Eq. (9.19b), and in Example 94, 1st line of Solution
- Ch. 7, p. 108, 3rd line of Solution: render as $E_r = 10\sqrt{4 \times 1.38 \times 10^{-23} \times 300 \times (18 + 18) 10^3 \times 1.57 \times 10^5} = 96.7 \mu\text{V rms}$ and change accordingly in the rest of the Solution
- Ch. 7, p. 110, line before Eq. (10.26): change Eq. (10.9) to Eq. (10.11a)
- Ch. 7, p. 111, 3rd line after Fig. 10.7: change Problem 10.10 to Problem 10.12
- Ch. 7, p. 115, Problem 2.2, 3rd line from the end: change Fig. 2.9 to Fig. 2.6
- Ch. 7, p. 117, Problem 4.1, 2nd line: change series-series procedure to series-shunt procedure
- Ch. 7, p. 118, Problem 4.5: change Fig. 4.5a to Fig. 4.9a
- Ch. 7, p. 123, Problem 7.5, 4th line, (a): change to If an amplifier with dc gain $a_0 = 10^5$ and three pole frequencies $f_1 = 1 \text{ kHz}$, $f_2 = 1 \text{ MHz}$, and $f_3 = 10 \text{ MHz}$ is to be operated...

Ch. 7, p. 125, Problem 9.2, 1st line: change Fig. 7.10 to Fig. 7.11

Ch. 7, p. 126, Problem 9.4, 3rd line: change Fig. 9.3 to Fig. 9.2