Errata of "CMOS Analog Circuit Design" 2nd Edition
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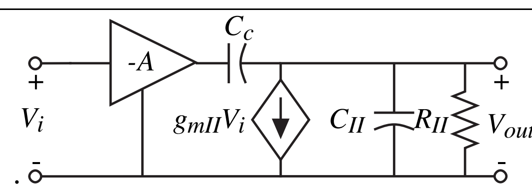
Page	Errata
	Changes made in this version are indicated by yellow shading
73	Fig. 3.1-1 – To remove any confusion due to the use of arrows to designate potential, the arrow goes from the negative potential to the positive potential.
82	Line 4 after figure 3.2-3, "CISW" → "CJSW"
82	Paragraph 1, line 6: "Thus, a value for CBX of 12.1 F and 9.9 F results…" → "Thus, a value for CBX of 12.1fF and 9.9fF results…" (Thanks to Volker Typke)
88	Line between Eqs. (3.3-2) and (3.3-3) should read as "The channel transconductances, g_m and g_{mbs}, and the channel conductance, g_{ds}, are defined as"
102	Line 2 from bottom: "$2\phi F$" → "$2\phi_F$"
115	Replace the NMOS symbol in Fig. 4.1-2 with the one for an NMOS transistor in Fig. 3.1-1 of pp. 73 with the bulk connected to ground (assumed to be the lowest potential).
117	Fig. 4.1-5, replace symbol with the NMOS symbol on pp. 73.
117	Fig. 4.1-6, replace symbol with the NMOS symbol on pp. 73.
125	Eq. 4.2-3 should be: $r_{out} = \dfrac{1}{g_m + g_{ds}} \approx \dfrac{1}{g_m}$
126	Fig. 4.2-3, replace symbol with the NMOS symbol on pp. 73.
130	Eq. (4.3-11), no "/" sign in numerators
133	Solution part to Example 4.3-3: delete "2 ×" in "$2 \times 500 \times 10^{-6}$" when calculating "W/L"
133	Solution part to Example 4.3-3: "0.0626" → "0.0625" when calculating "W/L"
134	Line 3 from the bottom, delete "is greater than V_{T2}"
134	Eq. (4.4-1): "$1\ \lambda v_{DS2}$" → "$1 + \lambda v_{DS2}$"
138	Line 2 of Example 4.4-1: Change the values from "$W_1 = 5 \pm 0.05\mu$m and $W_2 = 20 \pm 0.05\mu$m" → "$W_1 = 5 \pm 0.1\mu$m and $W_2 = 20 \pm 0.1\mu$m"
138	Second and fourth lines of the solution: "$W_1 = 5 \pm 0.05\mu$m" → "$W_1 = 5 \pm 0.1\mu$m" and "$W_2 = 20 \pm 0.05\mu$m" → "$W_2 = 20 \pm 0.1\mu$m"
138	Solution part to Example 4.4-1, line 6: "$\dfrac{W_2}{W_1} = \dfrac{20 + 0.05}{5 \pm 0.06}$" → "$\dfrac{W_2}{W_1} = \dfrac{20 + 0.1}{5 \pm 0.1} = 4\left(\dfrac{1 \pm (0.1/20)}{1 \pm (0.1/5)}\right) \approx 4\left(1 \pm \dfrac{0.1}{20}\right)\left(1 - \dfrac{\pm 0.1}{5}\right) \approx 4\left(1 \pm \dfrac{0.1}{20} - \dfrac{\pm 0.4}{20}\right) = 4 - (\pm 0.03)$"
138	Last line of Ex. 4.4-1: "ratio error is 1.25%" → "ratio error is 0.75%"
146	Eq. (4.5-9): "$S_{V_{DD}}^{V_{REF}} = \left(\dfrac{1}{1 + \beta(V_{REF}-V_T)R}\right)\left(\dfrac{V_{DD}}{V_{REF}}\right)$" → "$S_{V_{DD}}^{V_{REF}} = \left(\dfrac{1}{\sqrt{1 + 2\beta(V_{DD}-V_T)R}}\right)\left(\dfrac{V_{DD}}{V_{REF}}\right)$"
146	Eq. (4.5-10): "$V_{REF} = V_{GS}\left(1 + \dfrac{R_2}{R_1}\right)$" → "$V_{REF} = V_{GS}\left(1 + \dfrac{R_1}{R_2}\right)$"

155	Eq. (4.6-10): "$= \frac{V_{BE} - V_{G0}}{T_0} + (\alpha - \gamma)\left(\frac{k}{q}\right)$" → "$= \frac{V_{BE0} - V_{G0}}{T_0} + (\alpha - \gamma)\left(\frac{k}{q}\right)$"
156	Eq. (4.6-21): "V_{BE1}" → "V_{EB2}"
171	Eq. (5.1-15): "$C_{out} = C_{bd1}C_{bd2} + C_{gs2} + C_L$" → "$C_{out} = C_{bd1} + C_{bd2} + C_{gs2} + C_L$"
172	Line 3: "voltage gain is –1.92 V/V." → "voltage gain is –2.098 V/V."
175	Eq. For v'_{OUT}(min): "$\sqrt{1 - \left(\frac{110\cdot 1}{50\cdot 2}\right)\left(\frac{8 - 0.7}{5 - 0.7}\right)^2}$" →"$\sqrt{1 - \left(\frac{110\cdot 1}{50\cdot 2}\right)\left(\frac{3 - 0.7}{5 - 0.7}\right)^2}$"
178	Eq. (5.1-32): "$e_{out} =$" → "$e_{eq} =$"
188	Fig. 5.2-8(a): The VCCS in parallel with "r_{ds2}" should be "$g_{m2}v_{gs2}$" instead of "$g_{m1}v_{gs1}$".
188	Fig. 5.2-8(b): The VCCS in parallel with the i_3 VCCS should be "$g_{m2}v_{gs2}$" instead of "$g_{m1}v_{gs1}$".
197	Last line: "$\lambda_P = 0.5\text{V}^{-1}$" → "$\lambda_P = 0.05\text{V}^{-1}$"
198	First eq. in step 5.): Should be $$V_{DS}(\text{sat}) = V_{IC}(\min) - V_{SS} - V_{GS1} = -1.5 + 2.5 - \sqrt{\frac{2\cdot 50\mu\text{A}}{110\mu\text{A/V}^2(18.4)}} - 0.7$$
198	Last eq. on page: Should be $$\frac{W_5}{L_5} = \frac{2I_5}{K'_N V_{DS}(\text{sat})^2} = 306$$
198	3rd line from bottom: "… giving a smaller W_5/L_5." → "…to allow for a variation in V_{TN}."
198	2nd line from bottom: "W_1/L_1 (W_2/L_2) = 25, which gives W_5/L_5 = 12.3." → "W_1/L_1 (W_2/L_2) = 40, which gives W_5/L_5 = 82."
198	Last line: "111.1 V/V" → "147.4 V/V"
211	First eq. on this page: "$= \sqrt{\frac{2\cdot 150\text{A}}{110\cdot 4.26}} = 0.8$ V" → "$= \sqrt{\frac{2\cdot 150\text{A}}{110\cdot 2.73}} = 1.0$ V"
211	Line between 1st and 2nd eqs.: "…V_{DS2}(sat) = 0.7 V." → "…V_{DS2}(sat) = 0.5 V."
211	Second eq. on this page: "$= \frac{2\cdot 150}{110\cdot 0.7^2} = 5.57$" → "$= \frac{2\cdot 150}{110\cdot 0.5^2} = 10.9$"
211	Third eq. on this page: "= 0.8 V + 0.7 V…" → "= 1.0 V + 0.5 V…"
225	Fig. 5.5-7(a): The bulk VCCS for M1 should be "$g_{m1}v_{bs1}$" instead of "$g_{m1}v_{gs1}$".
225	Fig. 5.5-7(a): The VCCS for M2, $g_{m2}v_{gs2}$ should be pointing upward.
225	Fig. 5.5-7(a): The bulk VCCS for M2 should be "$g_{m2}v_{bs2}$" instead of "$g_{m2}v_{gs2}$".
225	Fig. 5.5-7(b): The fourth VCCS from the left should be "$g_{m2}v_{in}$" instead of "$g_{m1}v_{in}$".
256	Fig. 6.2-6: Replace "*GB*" with "0dB frequency"
266	Fig. 6.2-16(a): "M4" → "M12".
268	Fig. 6.2-18(c): Corrected figure is shown. *A* is replaced by –*A*. 

268	Eq. (6.2-56) should be: $$\frac{V_{out}(s)}{V_{in}(s)} = \frac{-AC_c}{C_c + C_{II}}\left(\frac{s + g_{mII}/AC_c}{s + 1/[R_{II}(C_c + C_{II})]}\right)$$
274	Table 6.3-1, last line: The downward arrrow "↓" should be upward "↑".
274	Table 6.3-2, entry 3.): Delete the equation $$I_5 \approx 10\left(\frac{V_{DD} + \|V_{SS}\|}{2T_s}\right)$$
274	Last line: "$S_1 = S_2 = \frac{g_{m2}}{K_2'I_5}$ " → "$S_1 = S_2 = \frac{g_{m2}^2}{K_2'I_5}$ "
288	Fig. 6.4-2c: Replace "$g_{ds1}V_{dd}$" of the left-most controlled source with "$g_{ds1}V_{dd} + g_{m1}V_{out}$"
303	Eq. (6.5-12): "$R_A = \frac{r_{ds6} + R_2}{1 + g_{m6}r_{gs6}} \approx \frac{1}{g_{m6}}$ " → "$R_A = \frac{r_{ds6} + R_2 + \frac{1}{g_{m10}}}{1 + g_{m6}r_{ds6}} \approx \frac{1}{g_{m6}}$ "
304	Eq. (6.5-16): "$= \frac{g_{m2}v_{in}}{2\left(1 + \frac{R_9(g_{ds2}+g_{ds5}}{g_{m7}r_{ds7}}\right)} =$ " → "$= \frac{g_{m2}v_{in}}{2\left(1 + \frac{R_9(g_{ds2}+g_{ds5})}{g_{m7}r_{ds7}}\right)} =$ "
304	Eq. (6.5-17): "$k = \frac{R_9(g_{ds2}+g_{ds4})}{g_{m7}r_{ds7}}$" → "$k = \frac{R_9(g_{ds2}+g_{ds5})}{g_{m7}r_{ds7}}$"
305	Eq. (6.5-20) should be written as, $$p_{out} = \frac{-1}{R_{II}'C_{out}}$$
305	After Eq. (6.5-20), replace "where C_{out}…" by "where R_{II}' = [(2+k)/(2+2k)] R_{II} and C_{out}…"
305	Eq. (6.5-23): "$p_6 \approx \frac{-1}{R_2 + \frac{1}{g_{m10}}C_6}$ " → "$p_6 \approx \frac{-1}{\left(R_2 + \frac{1}{g_{m10}}\right)C_6}$ "
305	Line 9 from the bottom: "Figure 6.5-8" → "Figure 6.5-7"
307	Table 6.5-3, Step 3, third column: "$S_5 = \frac{8I_5}{K_P'V_{SD5}^2}$, $S_7 = \frac{8I_7}{K_P'V_{SD7}^2}$ " → "$S_5 = \frac{2I_5}{K_P'V_{SD5}^2}$, $S_7 = \frac{2I_7}{K_P'V_{SD7}^2}$ "
307	Table 6.5-3, Step 3, fourth column: "$\frac{V_{DD}-V_{out}(\min)}{2}$ " → "$\frac{V_{DD}-V_{out}(\max)}{2}$ "
307	Table 6.5-3, Step 4: "$S_{11} = \frac{8I_{11}}{K_N'V_{DS11}^2}$, $S_9 = \frac{8I_9}{K_N'V_{DS9}^2}$ " → $S_{11} = \frac{2I_{11}}{K_N'V_{DS11}^2}$, $S_9 = \frac{2I_9}{K_N'V_{DS9}^2}$
307	Table 6.5-3, Step 5: "$V_{SD14}(\text{sat})/I_{14}$" → "$V_{SD13}(\text{sat})/I_{12}$"
307	Table 6.5-3: Step 8: "$\frac{2I_4}{K_P'(V_{DD}-V_{in}(\max)+V_{T1})}$ "→"$\frac{2I_4}{K_P'(V_{DD}-V_{in}(\max)+V_{T1})^2}$ "

308	Third Eq: "$S_6 = S_7 = S_{13} = \frac{2\cdot 25\mu A}{50\mu A/V^2(0.25V)^2} = \frac{2\cdot 125\cdot 16}{50} = 80$ " → "$S_6 = S_7 = S_{13} = \frac{2\cdot 125\mu A}{50\mu A/V^2(0.25V)^2} = \frac{2\cdot 125\cdot 16}{50} = 80$ "
308	Sixth Eq: "$= \frac{200x10^{-6}}{110x10^{-6}\left(-1.5+2.5-\sqrt{\frac{100}{100\cdot 35.9}}-0.75\right)^2} = 20$" → "$= \frac{200x10^{-6}}{110x10^{-6}\left(-1.5+2.5-\sqrt{\frac{100}{110\cdot 35.9}}-0.75\right)^2} = 20$"
308	Last Eq: "$S_4 = S_5 \geq \frac{2I_4}{K_P'[V_{DD}-V_{in}(\max)+V_{T1}]} =$ " → "$S_4 = S_5 \geq \frac{2I_4}{K_P'[V_{DD}-V_{in}(\max)+V_{T1}]^2} =$ "
313	Fig. 6.6-7(b): The polarity of the upper V_{cm} source should be reversed.
313	Fig. 6.6-7(b): Replace the lower controlled source designation of "$\pm A_cV_{cm}$" with "$\pm\frac{A_c(V_1+V_2)}{2}$ "
320	Fourth line of Table 6.6-3: "6.0 1U" should be "6.01U"
321	Caption of Fig. 6.6-17: "Input common-node…" should be "Input common mode…"
343	Prob. 6.3-10, 5th line: Delete "positive and"
343	Fig. P6.3-10: Change the power supplies to ±1.5V and increase the W/L value of M6 to 100/1.
344	Prob. 6.3-10: Add sentence "Assume the parameters of the MOSFETs are given in Table 3.1-2."
360	Eq. (7.1-8): "$R_{out} = \frac{1}{(g_{ds6}+g_{ds7})\left[1+\left(\frac{g_{m2}}{g_{m4}}\right)(g_{m6}+g_{m8})R_o\right]}$ " → "$R_{out} = \frac{1}{1+(g_{ds6}+g_{ds7})\left[1+\left(\frac{g_{m2}}{g_{m4}}\right)(g_{m6}+g_{m8})R_o\right]}$ "
362	Eq. (7.1-11): Replace "=" with "≈"
363	First line: "..that R_L is smaller than r_{ds11}." → "..that the load reflected from the emitter to base of Q10 is negligible with respect to $r_{\pi 10}$."
363	Last line: "469μS" → "300μS"
364	1st Eq.: "$g_{mbs9} = \frac{g_{m9}\gamma_N}{2\sqrt{2\phi_F+V_{BS9}}} = \frac{469\cdot 0.4}{2\sqrt{0.7+2}} = 57.1\mu S$" → "$g_{mbs9} = \frac{g_{m9}\gamma_N}{2\sqrt{2\phi_F+V_{BS9}}} = \frac{300\cdot 0.4}{2\sqrt{0.7+2}} = 36.5\mu S$"

364	2nd Eq.: "$A_{MOS} = \frac{469\mu S}{469\mu S+57.1\mu S+4\mu S+5\mu S} = 0.8765$ V/V" → "$A_{MOS} = \frac{300\mu S}{300\mu S+36.5\mu S+4\mu S+5\mu S} = 0.8683$ V/V"
364	4th Eq.: "$A_{vd}(0) = (7777)(0.8765)(0.951) = 6483$ V/V" → "$A_{vd}(0) = (7777)(0.8683)(0.951) = 6422$ V/V"
373	Top line: "$p_8 \approx \frac{-g_{m8}}{C_8}$" → "$p_8 \approx \frac{-g_{m8}r_{ds8}g_{m10}}{C_8}$"
387	1st complete paragraph: Replace this entire paragraph with the following: "The input common mode range of the differential-out op amps may appear to be better because of the current source loads (M3 and M4 of Fig. 7.3-3). However, the upper input common mode range becomes restricted by M6 and M7 of Fig. 7.3-3. For example, in Fig. 7.3-3, the upper input common mode range is $V_{DD} - V_{SD}$(sat) where it is $V_{DD} - V_{SD}$(sat) $+ V_T$. for the folded-cascode differential output op amp of Fig. 7.3-5."
389	Eq. (7.3-4): "= $(v_{sg1} + v_{gs4})$ =" → "= $(v_{gs1} + v_{sg4})$ ="
394	Line after Eq. (7.4-5): "g_{m1}/C" → "g_{m1}/C_c"
394	Eq. (7.4-6): "$GB = \frac{I_{D1}}{(n_1kT/q)C}$" → "$GB = \frac{I_{D1}}{(n_1kT/q)C_c}$"
394	Eq. (7.4-7): "$SR = \frac{I_{D5}}{C} = 2\frac{I_{D1}}{C} =$ " → "$SR = \frac{I_{D5}}{C_c} = 2\frac{I_{D1}}{C_c} =$ "
396	3rd line from bottom: "Figure 7.7-4" → "Figure 7.4-4"
398	Line 1: "M5 to M4" → "M6 to M4" and "M7 equals M6" → "M7 equals M9"
399	1st Eq.: "$V_{ds1}(\text{sat}) = \sqrt{\frac{2I_1}{K_N'(W_2/L_2)}} =$ " → "$V_{ds1}(\text{sat}) = \sqrt{\frac{2I_1}{K_N'(W_1/L_1)}} =$ "
404	Eq. (7.5-3): "$g_{m6}R_{II}^2$" → "$g_{m6}^2R_{II}^2$"
405	Line following Eq. (7.5-8): "Fig. 7.4-1" → "Fig. 7.5-1"
407	Line 7 including eqs.: "0.202 $\mu(V_{rms})^2$" → "0.202 $\mu(V_{rms})$"
420	Line 3 (2 lines after Eq. 7.6-10): "above V_{onn}" should be "above V_{onp}"
434	Prob. 7.1-10, 3rd line: "Example 7.1-1" → "Example 7.1-2"
434	Prob. 7.1-10: Add the sentence, "Assume C_π = 10 pF and C_μ = 1 pF."
434	Prob. 7.1-10: Replace "Example 7.1-1" with "Example 7.1-2"
436	Prob. 7.4-2, 2nd and 3rd line: "…all transistor widths are …" → "…transistors M1 through M11 widths are…"
436	Prob. 7.4-2, 5th line: "..the correct bias voltage for M10 and M11…" → "…the *W/L* values of M12 through M15…"
436	Prob. 7.4-2, last line: "…n_p = 1.5 and n_n = 2.5." → "…n_p = 1.5, n_n = 2.5 and V_t = 26mV."
436	Prob. 7.5-5, 2nd line: "…of a…" → "…over a…"
442	Fig. 8.1-5, 1st line after Fig: "V_{OH} for $(v_P$-$v_N) > 0$" → "V_{OH} for $(v_P$-$v_N) > V_{IH}$"
442	Fig. 8.1-5, 3rd line after Fig: "V_{OL} for $(v_P$-$v_N) < 0$" → "V_{OL} for $(v_P$-$v_N) > V_{IL}$"
444	Next to last line: "2.5V" should be "-2.5V".

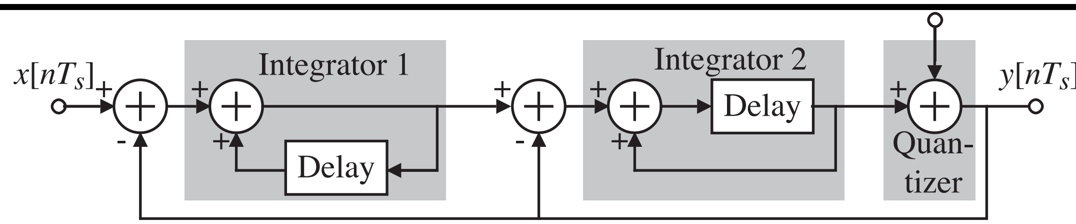
446	Eq. (8.2-4a): "$p_1 = \frac{-1}{C_I(g_{ds2}+g_{ds4})}$" → "$p_1 = \frac{-(g_{ds2}+g_{ds4})}{C_I}$"
446	Eq. (8.2-4a): "$p_2 = \frac{-1}{C_{II}(g_{ds2}+g_{ds4})}$" → "$p_2 = \frac{-(g_{ds6}+g_{ds7})}{C_{II}}$"
446	Eq. (8.2-5): "$A_v(s) = \frac{A_v(0)}{\left(\frac{s}{p_1}+1\right)\left(\frac{s}{p_2}+1\right)}$" → "$A_v(s) = \frac{A_v(0)}{\left(\frac{s}{p_1}-1\right)\left(\frac{s}{p_2}-1\right)}$"
447	1st eq.: "$p_1 = \frac{g_{ds2}+g_{ds4}}{C_I} = \frac{15\text{x}10^{-6}(0.04+0.05)}{0.2\text{x}10^{-12}} = 6.75\text{x}10^6$ (1.074MHz)" → "$p_1 = -\frac{g_{ds2}+g_{ds4}}{C_I} = -\frac{15\text{x}10^{-6}(0.04+0.05)}{0.2\text{x}10^{-12}} = -6.75\text{x}10^6$ (1.074MHz)"
447	2nd eq: "$p_2 = \frac{g_{ds6}+g_{ds7}}{C_{II}} = \frac{95\text{x}10^{-6}(0.04+0.05)}{5\text{x}10^{-12}} = 1.71\text{x}10^6$ (0.670MHz)" → "$p_2 = -\frac{g_{ds6}+g_{ds7}}{C_{II}} = -\frac{95\text{x}10^{-6}(0.04+0.05)}{5\text{x}10^{-12}} = -1.71\text{x}10^6$ (0.670MHz)"
447	Eq. (8.2-6): "$v_{out}(t) = A_v(0)V_{in}\left[1 + \frac{p_2e^{--tp_1}}{p_1-p_2} - \frac{p_1e^{--tp_2}}{p_1-p_2}\right]$" → "$v_{out}(t) = A_v(0)V_{in}\left[1 + \frac{p_2e^{-tp_1}}{p_1-p_2} - \frac{p_1e^{-tp_2}}{p_1-p_2}\right]$"
447	Eq. (8.2-11): "$t_n = tp_1 = \frac{t}{\tau_1}$" → "$t_n = -tp_1$"
448	Eq. (8.2-12): "$v_{out}'(t_n) = 1 - p_1e^{-t_n} - \frac{t_n}{p_1}e^{-t_n} = 1 - e^{-t_n} - t_ne^{-t_n}$" → "$v_{out}'(t_n) = 1 - e^{tp_1} + tp_1e^{-tp_1} = 1 - e^{-t_n} - t_ne^{-t_n}$"
448	Line after Eq. (8.2-12): Delete "where p_1 is assumed to be unity."
448	Fig. 8.2-2: "Normalized Time ($t_n = tp_1 = t/\tau_1$)" → "Normalized Time ($t_n = -tp_1$)"
451	Eq. (8.2-22) Should be: "$V_{G1} < v_{o1} < V_{G1} + V_{DS2}$ (sat)"
452	Eq. (8.2-23) Should be: "$V_S(I_{SS}/2) < v_{o1} < V_S(I_{SS}/2) + V_{DS2}$ (sat)"
452	Lines 2 through 5 after Eq. (8.2-23) should read as: "…found following the approach used in Example 5.1-2. If $V_{G2} >> V_{G1}$, the previous results are still valid as long as M5 remains in the saturation region and i_3 is equal to i_4. If for some reason, M5 leaves the saturation region, then I_{SS} decreases and v_{o1} can approach V_{SS} and v_{out} will be determined as was illustrated in Example 5.1-2."
452	Table 8.2-1, 4th row: "$v_{G1} << V_{G2}$, $i_1 = 0$, and $i_2 = I_{SS}$ V_{SS} Eq.(5.1-9) for PMOS"
452	Table 8.2-1, 5th row: "$v_{G2} > V_{G1}$, $i_1 > 0$, and $i_2 < I_{SS}$ $V_S(I_{SS}/2) < v_{o1} < V_S(I_{SS}/2) + V_{DS2}$ (sat) Eq.(5.1-9) for PMOS"
452	Table 8.2-1, 6th row: "$v_{G2} >> V_{G1}$, $i_1 = i_2 = I_{SS}/2$ $v_{o1} = V_{G1} - V_{GS1}(I_{SS}/2) + V_{DS2}(\text{sat}) = V_{G1} - V_{GS1}(I_{SS}/2) + V_{GS2}(I_{SS}/2) - V_T = V_{G1} - V_T$ Eq.(5.1-9) for

	PMOS"
454	Eq. at bottom of page: "$= 0.7 + \sqrt{\frac{234\cdot 2}{110\cdot 38}} = 1.035$ V" → "$= 0.7 + \sqrt{\frac{234\cdot 2}{50\cdot 38}} = 0.496$ V"
455	Line 2: "$V_{TRP2} = 2.5 - 1.035 = 1.465$ V" → "$V_{TRP2} = 2.5 - 1.196 = 1.304$ V"
455	Line 3: "$\Delta V_1 = 2.5$ V - 1.465 V = $V_{SG6} = 1.035$ V." → "$\Delta V_1 = 2.5$ V - 1.304 V = $V_{SG6} = 1.196$ V."
455	Line 5: "$t_{fo1} = 0.2\text{pF}\left(\frac{1.035\text{V}}{30\mu\text{A}}\right) = 6.9$ ns" → "$t_{fo1} = 0.2\text{pF}\left(\frac{1.196\text{V}}{30\mu\text{A}}\right) = 8$ ns"
455	Line 9: "1.465 V" → "1.304 V"
455	Line 13: "1.465 V" → "1.304 V"
455	Line 14: "0.232 V." → "0.152 V" and "2.27 V" → "2.348 V"
455	Line 15: "$I_6 = \frac{\beta_6}{2}(V_{SG6}-\lvert V_{TP}\rvert)^2 = \frac{38\cdot 50}{2}(2.27 - 0.7)^2 = 2{,}342\mu\text{A}$" → "$I_6 = \frac{\beta_6}{2}(V_{SG6}-\lvert V_{TP}\rvert)^2 = \frac{38\cdot 50}{2}(2.348 - 0.7)^2 = 2{,}580\mu\text{A}$"
455	Line 19: "$t_{rout} = 5\text{pF}\left(\frac{2.5\text{V}}{2{,}342\mu\text{A}}\right) = 5.3\text{ns}$" → "$t_{rout} = 5\text{pF}\left(\frac{2.5\text{V}}{2{,}580\mu\text{A}-234\mu\text{A}}\right) = 5.3\text{ns}$"
455	Line 21: "12.2 ns" → "13.3 ns"
455	Last line: "$t_{ro1} = 0.2\text{pF}\left(\frac{1.465\text{V}-(-2.5)}{30\mu\text{A}}\right) = 26.43\text{ns}$" → "$t_{ro1} = 0.2\text{pF}\left(\frac{1.304\text{V}-(-1.000)}{30\mu\text{A}}\right) = 15.4\text{ns}$"
456	Line 3: "…79.85 ns." → "…68.82 ns."
456	Line 5: "…about 44.93 ns." → "…about 41 ns."
456	Fig. 8.2-7: "$V_{TRP6} = 1.465$V" → "$V_{TRP6} = 1.304$V" Also, lower the dashed line.
457	Table 8.2-2, step 5: "$A_v(0) = \frac{V_{OH}+V_{OL}}{V_{in}(\text{min})}$" → "$A_v(0) = \frac{V_{OH}-V_{OL}}{V_{in}(\text{min})}$"
457	Table 8.2-3, step 6: "$A_v(0) = \frac{V_{OH}+V_{OL}}{V_{in}(\text{min})}$" → "$A_v(0) = \frac{V_{OH}-V_{OL}}{V_{in}(\text{min})}$"
465	Fig. 8.4-1(b): The polarity of the voltage on C_{AZ} should be reversed.
468	Fig. 8.4-7: $V_{TRP}^{+} = -\frac{R_1V_{OL}}{R_2}$ and $V_{TRP}^{-} = -\frac{R_1V_{OH}}{R_2}$
469	Fig. 8.4-8: "$\frac{R_1+R_2}{R_1}V_{REF}$" → "$\frac{R_1+R_2}{R_2}V_{REF}$"
470	Eq. (8.4-10): "$V_{TRP}^{+} = \left(\frac{R_1+R_2}{R_1}\right)V_{REF} - \frac{R_1}{R_2}V_{OL}$" → "$V_{TRP}^{+} = \left(\frac{R_1+R_2}{R_2}\right)V_{REF} - \frac{R_1}{R_2}V_{OL}$"

470	Eq. (8.4-12): "$V_{TRP}^{+} = \left(\frac{R_1+R_2}{R_1}\right)V_{REF} - \frac{R_1}{R_2}V_{OH}$" → "$V_{TRP}^{-} = \left(\frac{R_1+R_2}{R_2}\right)V_{REF} - \frac{R_1}{R_2}V_{OH}$"
470	First line after Eq. (8.4-12): "…$(R_1 + R_2)/R_1$…" → "…$(R_1 + R_2)/R_2$…"
470	Eq. (8.4-13) and Eq. (8.4-14): "…+ $\left(\frac{R_1}{R_1+R_2}\right)V_{REF}$" → "…+ $\left(\frac{R_2}{R_1+R_2}\right)V_{REF}$"
470	First line after Eq. (8.4-14): "…$R_1/(R_1 + R_2)$…" → "…$R_2/(R_1 + R_2)$ …"
470	Fig. 8.4-10: "$\frac{R_1}{R_1 + R_2}V_{REF}$" → "$\frac{R_2}{R_1 + R_2}V_{REF}$"
471	1st and 2nd equations: "…+ $\frac{R_1}{R_1 + R_2}V_{REF}$" → "…+ $\frac{R_2}{R_1 + R_2}V_{REF}$"
471	Last line of Ex. 8.4-1: "V_{REF} = 2 V" → "V_{REF} = 0.667 V"
478	Eq. (8.5-5): "…+$sC_1\left(V_{o1} - \frac{V_{o1}}{s}\right)$ =…" → "…+$sC_1\left(V_{o1} - \frac{V_{o1}'}{s}\right)$ =…"
480	Ex. 8.5-1, line 3: "…$\Delta V_i = 0.01V_{in}$(min) and $\Delta V_i = 0.1V_{in}$(min)." → "…$\Delta V_i = 0.01(V_{OH} - V_{OL})$ and $\Delta V_i = 0.1(V_{OH} - V_{OL})$."
480	3rd line from bottom: "…given a latch gain of 59.2 V/V." → "…gives a latch gain of 370 V/V."
481	Last eq. on page should be: $$\tau_L = 0.67C_{ox}\sqrt{\frac{WL^3}{2K'I}} = 0.67(24.7\text{x}10^{-4})\sqrt{\frac{(10\cdot 1)\text{x}10^{-24}}{2\cdot 110\text{x}10^{-6}\cdot 10\text{x}10^{-6}}} = 0.112\text{ ns}$$
482	First line: "…$t = 4.6\tau_L$ = 496 ns…" → "…$t = 4.6\tau_L$ = 0.515 ns…"
482	Second line: "…that $t = 2.3\tau_L$ = 284 ns." → "…that $t = 2.3\tau_L$ = 0.258 ns."
482	Third line: "…and is 174 ns and 422 ns…" →"…and is 0.438 ns and 0.180 ns …"
485	Fig. 8.6-4: The pins "FB" and "Reset" associated with M2 should be reversed.
486	Fig. 8.6-5 – Disconnect the line connecting the gate-drains of M3 and M4
489	Prob. 8.3-1,3rd line: "…what is the propagation…" → "…what is the slew rate limited propagation…"
491	Reference 2: "Two Novel Full …" → "Two Novel Fully…"
502	Eq. (9.1-34): "$v(n - n_o)T \leftrightarrow z^{-n_oT}V(z)$" → "$v(n - n_o)T \leftrightarrow z^{-n_o}V(z)$"
502	Eq. (9.1-36): "$V_2^o(z) = \left[1 - \left(\frac{C_2}{C_1+C_2}\right)z^{-1}\right] = \left(\frac{C_1}{C_1+C_2}\right)z^{-1}\ V_1^o(z)$" → "$V_2^o(z)\left[1 - \left(\frac{C_2}{C_1+C_2}\right)z^{-1}\right] = \left(\frac{C_1}{C_1+C_2}\right)z^{-1}\ V_1^o(z)$"
543	Line 9: "EODD…" → "EVEN…"
543	Line 10: "EVEN…" → "EODD…"
549	Line 1: "…Eq. (9.5-1)…" → "…Eq. (9.5-2)…"
552	Line 3: "…Eq. (9.6-4)…" → "…Eq. (9.6-3)…"
554	Ex. 9.6-1, 2nd line of solution: "…1/31.83." → "…1/0.0314 = 31.83."

557	Ex. 9.6-2, 2nd line of solution: "…1/15.92." → "…1/0.0628 = 15.92."
563	Eq. (9.7-4): "$\Omega_n = \dfrac{\omega_{PB}}{\omega_{SB}}$ " → "$\Omega_n = \dfrac{\omega_{SB}}{\omega_{PB}}$ "
564	Caption for Fig. 9.7-3: "…for = 1." → "…for $\varepsilon = 1$."
565	Title for Table 9.7-1: "…for = 1." → "…for $\varepsilon = 1$."
567	3rd and 4th line after Eq. (9.7-9): "…($\varepsilon = 0.0233$)…" → "…($\varepsilon = 0.1526$)…"
572	2nd line: "$\alpha_{42}\alpha_{52} = 0.1789T_n^2 = \dfrac{0.1789\cdot\omega_{PB}^2}{f_c^2} = \dfrac{0.1789\cdot 2\pi}{20} = 0.05620$" → "$\alpha_{42}\alpha_{52} = 0.1789T_n = \dfrac{0.1789\cdot\omega_{PB}}{f_c} = \dfrac{0.1789\cdot 2\pi}{20} = 0.05620$"
572	Last line: "$\alpha_{63} = 0.4684T_n^2 = \dfrac{0.4684\cdot\omega_{PB}^2}{f_c^2} = \dfrac{0.4684\cdot 2\pi}{20} = 0.1472$" → "$\alpha_{63} = 0.4684T_n = \dfrac{0.4684\cdot\omega_{PB}}{f_c} = \dfrac{0.4684\cdot 2\pi}{20} = 0.1472$"
573	Line 2: "…$\alpha_{43} = 0.1472$." → "…$\alpha_{63} = 0.1472$."
557	Eq. (9.7-24): Numerator term, "$\cdots + (\alpha_3\alpha_5 - \alpha_1\alpha_5 - 2\alpha_3)z + \cdots$" → "$\cdots + (\alpha_3\alpha_5 + \alpha_1\alpha_5 - 2\alpha_3)z + \cdots$"
580	Eq. (9.7-42): "$\Omega_n = \dfrac{SW}{BW} = \dfrac{\omega_{SB2} - \omega_{SB1}}{\omega_{BP2} - \omega_{PB1}}$" → "$\Omega_n = \dfrac{SW}{BW} = \dfrac{\omega_{SB2} - \omega_{SB1}}{\omega_{PB2} - \omega_{PB1}}$"
587	Fig. 9.7-18: The upper input capacitor should be labeled "$\alpha_{21}C_2$"
607	Prob. 9.7-4, 1st line following eq.: "…to 1000 Hz…" → "…to be 1000 Hz…"
613	Eq. (10.1-3): "$v_{OUT} = KV_{REF} = \left(\dfrac{b_1}{2^1} + \dfrac{b_2}{2^2} + \dfrac{b_3}{2^3} + \ldots + \dfrac{b_N}{2^N}\right)$" → "$v_{OUT} = KV_{REF}\left(\dfrac{b_1}{2^1} + \dfrac{b_2}{2^2} + \dfrac{b_3}{2^3} + \ldots + \dfrac{b_N}{2^N}\right)$"
618	Eq. (10.1-15): "Differential nonlinearity (DNL)= $\left(\dfrac{V_{cx} - V_s}{V_s}\right) \infty\ 100\% = \left(\dfrac{V_{cx}}{V_s} - 1\right)$ $LSBs$" → "Differential nonlinearity (DNL)= $(V_{cx} - V_s) = \left(\dfrac{V_{cx} - V_s}{V_s}\right) V_s = \left(\dfrac{V_{cx}}{V_s} - 1\right)$ $LSBs$
621	Line 14: "…±LSB…" → "…±0.5LSB…"
629	Eq. (10.2-15): "$DNL = \dfrac{v_{step}(\text{actual}) - v_{step}(\text{ideal})}{v_{step}(\text{ideal})} = \dfrac{v_{step}(\text{actual})}{v_{step}(\text{ideal})} - 1$ " → "$DNL = v_{step}(\text{actual}) - v_{step}(\text{ideal}) = \left(\dfrac{v_{step}(\text{actual}) - v_{step}(\text{ideal})}{v_{step}(\text{ideal})}\right) v_{step}(\text{ideal})$ $= \dfrac{v_{step}(\text{actual})}{v_{step}(\text{ideal})} - 1$ $LSBs$ "
630	Last line of solution: "$DNL = \dfrac{\pm 1}{100}\left(\dfrac{64}{64}\right) = \left(\dfrac{64}{100}\right)\left(\dfrac{1}{64}\right) = \pm 0.64$ $LSBs$"

	→ "$DNL = \frac{\pm 1}{100} LSBs = \pm 0.01 LSBs$"
641	Eq. 10.3-11 The summation should be i=0 through 7 not 8. "$\ldots = \sum_{i=0}^{8} \frac{b_i V_{REF}}{2^i}$" → "$\ldots = \sum_{i=0}^{7} \frac{b_i V_{REF}}{2^i}$"
644	Fig. 10.3-9: "$C_{M-2} = 2^2 C$" → "$C_{M-1} = {}^1C$", "$C_{M-1} = 2C$" → "$C_M = C$" and "$C_M = 2C$" → "$C_M = C$"
644	5th line below Eq. (10.3-17): "… 2^{K-1}." → "… 2^{M-1}."
645	Eq. (10.3-24): "$INL = INL(R) + INL(C) = \left(2^{M-1}\frac{\Delta R}{R} + 2^{N-1}\frac{\Delta C}{C}\right) LSBs$" → "$INL = INL(R) + INL(C) = \left(2^{K-1}\frac{\Delta R}{R} + 2^{N-1}\frac{\Delta C}{C}\right) LSBs$"
645	Eq. (10.3-25): "$DNL = DNL(R) + DNL(C) = \left(\frac{\Delta R}{R} + (2^N-1)\frac{\Delta C}{C}\right) LSBs$" → "$DNL = DNL(R) + DNL(C) = \left(\frac{\Delta R}{R} + (2^N-2^K)\frac{\Delta C}{C}\right) LSBs$"
645	3rd line after Eq. (10.3-25): "…of 2^K…" → "…of 2^M…"
646	2nd sentence in Ex. 10.3-4: "To minimize the capacitor element spread and the number of resistors, choose M = 5 and K = 7." → "To emphasize the accuracy of the capacitors, choose M = 7 and K = 5."
647	4th line: "$1 = \frac{\Delta R}{R} + (2^{12}-1)\frac{\Delta C}{C}$" → "$1 = \frac{\Delta R}{R} + (2^{12}-2^7)\frac{\Delta C}{C}$"
647	6th line: "$\frac{\Delta C}{C} = \frac{2^4 - 2}{2^{16} - 2^{11} - 2^4} = 0.000221 \rightarrow \frac{\Delta C}{C} = 0.0211\%$" is replaced by "$\frac{\Delta C}{C} = \frac{2^4 - 2}{2^{16} - 2^{11} - 2^{11}} = 0.000228 \rightarrow \frac{\Delta C}{C} = 0.0228\%$"
647	Lines 11 and 12 of Ex. 10.3-4, Solution: "…increase the value of M and decrease …" → "…decrease the value of M and increase…"
647	Line 13 of Ex. 10.3-4, Solution: "…choose K = 5 and M = 7…" → "…choose M = 5 and K = 7…"
667	Eq. (10.6-4): "$N_{out} = N_{REF} - \frac{v_{in}^*}{V_{REF}}$" → "$N_{out} = N_{REF} \frac{v_{in}^*}{V_{REF}}$"
671	Line 2: "…than…" → "…then…"
675	Eq. (10.7-8): "…+ $2^2 \cdot b_2$ +…" → "…+ $2^2 \cdot b_1$ +…"
701	Fig. 10.9-5 The sign of the output of the integrator ($v[nT_s]$) returned to the summing junction in the left shaded box should be "+" and not "-".
702	The correct Fig. 10.9-6 is shown:

	 Figure 10.9-6 Sampled-date model of a second-order ΔΣ modulator.
704	Eq. (10.9-12): "$\frac{3}{2}\frac{2L+1}{\pi^{2L}}M^{2L+1}2^B\text{-}1$" → "$\frac{3}{2}\frac{2L+1}{\pi^{2L}}M^{2L+1}(2^B\text{-}1)^2$"
719	Prob. 10.3-2: "if the divisor is 3 and 6." → "if the divisor is 3 and 5."
719	Fig. P10.3-7: The vertical resistor connected to the right of the resistor R_x, should have the value of "2*R*" rather than "4*R*" and the "4*R*" between the horizontal resistors R_x and 4*R* should be deleted.
720	Fig. P10.3-8: The subscripts of the bits, b_i, should all be decreased by 1. I.e. "b_1" → "b_0", "b_2" → "b_1", etc.
720	Fig. P10.3-10: The subscripts for "*b*" should increase from right to left and not left to right. In addition, a vertical line should be drawn from the left most switch terminal labeled "b_0" (old labeling) to the V_{REF} battery.
723	Prob. 10.4-4, lines 4-6: "If the attenuation factors of 0.5 become 0.55, at what bit does the converter create an error? What is the analog output for this case?" Replace with "If the attenuation factors of 0.5 become 0.55, what is the analog output for this case?"
723	Prob. 10.4-7, 1st line: "…ADC…" → "…DAC…"
724	Prob. 10.6-2, 1st line: "Give a switched…"→ "For Fig. 10.6-2, give a switched…"
725	Prob. 10.7-12, last line: "…in part (a)?" → "…in part (a) if V_{REF} = 1V."
729	Fig. P10.9-9: "$f_s = 2f_o$" → "$f_s = 4f_o$"
753	Ex. B1.-4, 1st line of Solution: "…Eq. (B.1-40),…" → "…Eq. (B.1-34),…"

New corrections beyond 090603: p. 387,