

Knew
remember to
pole.

(3-67)

R_{pullup} CTR
 R_{LED}
 V_{out}

(3-65)

on becomes
 e. We could
 difference with
 external com-
 31 chain? In
 the fast lane,
 I with R_{LED} ,
 arrangement.
 expression
 res the fol-

(3-66)

(3-62)

(3-63)

(3-64)

(3-64) *9264*
 [Eqs. (3-27a)]
 f the picture,
 er +20 dB at
 arrangement of
 source F_2)
 in Fig. 3-40,
 terminates the

Parameters
 $V_{out} = 5$

$R_{upper} = (V_{out} - 2.5)/250\mu u$
 $f_c = 1$
 $k_{pm} = 100$
 $G_{fc} = -20$
 $p_{fc} = -55$
 $G = 10^{(-G_{fc}/20)}$
 Boost = $p_m - (p_{fc}) - 90$
 $\pi = 3.14159$
 $K = \tan((\text{boost}/2 + 45)\pi/180)$
 $C_2 = 1/(2\pi f_c G k R_{upper})$
 $C_1 = C_2^2(K^2 - 1)$
 $R_2 = k/(2\pi f_c C_1)$

$F_{zero} = f_c/k$
 $F_{pole} = k^*f_c$

$R_{pullup} = 20k$
 $R_{LED} = CTR \cdot R_{pullup}/G$
 $C_{zero} = 1/(2\pi F_{zero} R_{upper})$
 $C_{pole} = 1/(2\pi F_{pole} R_{pullup})$
 $CTR = 1$

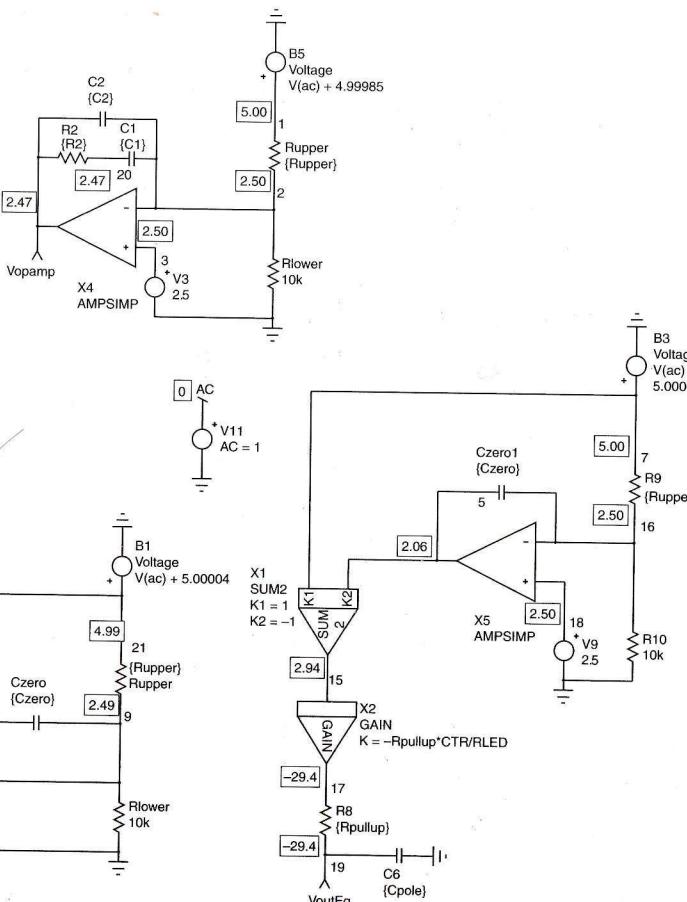
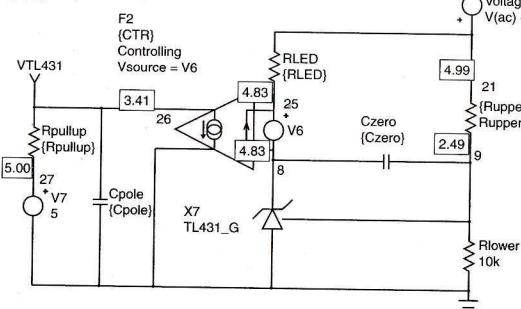


FIGURE 3-39 The comparison between the original op amp-based type 2 amplifier and the TL431 implementation.