

$$V_{CM} = V_{DD} - I_{TOT}(R_1 + R_2)/2 \quad (1)$$

$$\overline{V_{thermal}^2} = a \times \frac{kT}{C} \quad (2)$$

$$\overline{V_{LSB}^2} \frac{V_{max}^2}{2^{2bits} \times 12} \quad (3)$$

$$\frac{1}{4} \overline{V_{LSB}^2} = \overline{V_{thermal}^2} \quad (4)$$

$$C = \frac{48kT2^{2bits}}{V_{max}^2} \quad (5)$$

$$FOM = \frac{P_{diss}}{2^{bits} f_s} \quad (6)$$

$$FOM = \frac{P_{diss}}{2^{2bits} f_s} \quad (7)$$

$$A_o = \frac{g_{m1} R_1}{1 + \frac{g_{m1}}{2g_{ds13}}} \quad (8)$$

$$P_{mdacs} = 5 \times 100 \mu A \times 1V + \frac{1}{2} 5 \times 200 \mu A \times 1V = 1mW \quad (9)$$