$$G = \left(\frac{0.01\,F}{2}\right)\left(\frac{0.5\times10^{-2}}{0.3\times10^{-8}}\right)$$

$$= 7500\,F$$

$$G = \epsilon E$$

$$\Rightarrow \epsilon = \frac{G}{E} = \frac{7500\,F}{10\times10^{6}} = 7.5\times10^{-4}\,F$$

Knowing that R_1, R_3 are under tension.

$\Rightarrow \epsilon_1, \epsilon_3$ (+)

R_2, R_4 under Compression

$\Rightarrow \epsilon_2, \epsilon_4$ (−)

and $\frac{\Delta R}{R} = \epsilon k$ we have.

$$\Delta V_o = V_i\left(\epsilon_1 k + \epsilon_2 k + \epsilon_3 k + \epsilon_4 k\right)$$

$\Downarrow$ Symmetry.

$$= V_i\, k\,(4\epsilon) = V_i\, k\,\left(4(7.5\times10^{-4}\,F)\right)$$