$$K_{62}^{2} = \begin{bmatrix} \frac{-3\,U}{2\,t} & \frac{\sqrt{\frac{3}{2}}\,U}{t} & 0 & -\left(\frac{\sqrt{3}\,U}{t}\right) \\ \frac{\sqrt{\frac{3}{2}}\,U}{t} & \frac{-3\,U}{t} & \frac{U^2}{\sqrt{2}\,t^2} & 0 \\ 0 & \frac{U^2}{\sqrt{2}\,t^2} & \frac{-9\,U}{2\,t} & -\left(\frac{U^2}{t^2}\right) \\ -\left(\frac{\sqrt{3}\,U}{t}\right) & 0 & -\left(\frac{U^2}{t^2}\right) & \frac{-3\,U}{t} \end{bmatrix}$$