$$K_{12}^{1} = \begin{bmatrix} 0 & \frac{\left(1-\mathbf{i}\sqrt{3}\right)U}{\sqrt{2}\,t} & \frac{\mathbf{i}\left(3\,\mathbf{i}+\sqrt{3}\right)}{\sqrt{2}} \\ \frac{\left(-1-\mathbf{i}\sqrt{3}\right)U}{\sqrt{2}\,t} & \mathbf{i}\sqrt{3} & \frac{U-\mathbf{i}\sqrt{3}\,U}{2\,t} \\ \frac{3+\mathbf{i}\sqrt{3}}{\sqrt{2}} & \frac{-\left(U+\mathbf{i}\sqrt{3}\,U\right)}{2\,t} & -\mathbf{i}\sqrt{3} \end{bmatrix}$$