$$
\begin{aligned}
\Psi_{12} &= C_1\left(-|00uu\rangle - i\,|0uu0\rangle - i\,|u00u\rangle + |uu00\rangle\right) \\
&\quad + C_2\left(-i\,|0u0u\rangle + |u0u0\rangle\right)
\end{aligned}
$$

$$
C_1 = -\left(\frac{1}{4}\right) - \frac{i}{4}
$$

$$
C_2 = \frac{-i}{2}
$$