$$
\begin{aligned}
\Psi_{101} &= C_1\left(|02uu\rangle + |0uu2\rangle + |20uu\rangle + |2uu0\rangle - |u02u\rangle - |u20u\rangle + |uu02\rangle + |uu20\rangle\right) \\
&\quad + C_2\left(-|0u2u\rangle + |2u0u\rangle + |u0u2\rangle - |u2u0\rangle\right) \\
&\quad + C_3\left(-|duuu\rangle + |uduu\rangle - |uudu\rangle + |uuud\rangle\right)
\end{aligned}
$$

$$
C_1 = \frac{-48\,t^2 - \left(U + \left(36\,t^2\,U - U^3 + 6\,\sqrt{6}\,\sqrt{-\left(t^2\,\left(512\,t^4 + 26\,t^2\,U^2 + U^4\right)\right)}\right)^{\frac{1}{3}}\right)^2}{24\,t\left(36\,t^2\,U - U^3 + 6\,\sqrt{6}\,\sqrt{-\left(t^2\,\left(512\,t^4 + 26\,t^2\,U^2 + U^4\right)\right)}\right)^{\frac{1}{3}}}
$$

$$
C_2 = \frac{-384\,2^{\frac{2}{3}}\,t^4 - 2\,2^{\frac{1}{6}}\,\sqrt{3}\,\sqrt{-\left(t^2\,\left(512\,t^4 + 26\,t^2\,U^2 + U^4\right)\right)}\,\left(U + \left(36\,t^2\,U - U^3 + 6\,\sqrt{6}\,\sqrt{-\left(t^2\,\left(512\,t^4 + 26\,t^2\,U^2 + U^4\right)\right)}\right)^{\frac{1}{3}}\right) - 2\,t^2\,\left(11\,2^{\frac{2}{3}}\,U^2 + 7\,2^{\frac{2}{3}}\,U\,\left(36\,t^2\,U - U^3 + 6\,\sqrt{6}\,\sqrt{-\left(t^2\,\left(512\,t^4 + 26\,t^2\,U^2 + U^4\right)\right)}\right)^{\frac{1}{3}} + 2\,\left(72\,t^2\,U - 2\,U^3 + 12\,\sqrt{6}\,\sqrt{-512\,t^6 - 26\,t^4\,U^2 - t^2\,U^4}\right)^{\frac{2}{3}}\right)}{24\,t^2\,\left(72\,t^2\,U - 2\,U^3 + 12\,\sqrt{6}\,\sqrt{-512\,t^6 - 26\,t^4\,U^2 - t^2\,U^4}\right)^{\frac{2}{3}}}
$$

$$
C_3 = -\left(\frac{1}{2}\right)
$$