The transformation of a `SEXT` is given as

$$\begin{aligned}&\exp(:F_{\rm in}:)\exp(:a\texttt{L}:)\exp(:H_2/2:)\exp(:b\texttt{L}:)\\ &\times\exp(:V_2:)\exp(:a\texttt{L}:)\exp(:H_2/2:)\exp(:b\texttt{L}:)\exp(:F_{\rm out}:)\,,\end{aligned} \tag{192}$$

where `L` and H_2 are the Hamiltonians of a drift of length `L` and a thin sextupole kick with integrated strength `K2`:

$$H_2 = \frac{\texttt{K2}}{3!}\Re(x-iy)^3\,, \tag{193}$$

respectively. The coeffients are $a \equiv 1/2 - 1/\sqrt{12}$ and $b = 1/2 - a$. Terms $\exp(:F_{\rm in}:)$ and $\exp(:F_{\rm out}:)$ are transformations for entrance and exit nonlinear fringes. The term $\exp(:V_2:)$ is a correction to adjust the third-order terms in `L`:

$$V_2 = \sum_{j=(x,y),k=(x,y)} -\frac{\beta}{2}H_{2,k}^2 + \gamma H_{2,j}H_{2,k}H_{2,j,k}\,, \tag{194}$$

where $,i$ represents the derivative by x or y. We have also introduced two coefficients $\beta \equiv 1/6 - 1/\sqrt{48}$ and $\gamma = 1/40 - 1/(24\sqrt{3})$.