$$\int_{d\vartheta}^{\mathbb{T}} \mathfrak{e}^{\underbrace{\xi + \bar{\eta}|\alpha\vartheta + \bar{\vartheta}\bar{\beta}}} = \int_{d\vartheta}^{\mathbb{T}} \mathfrak{e}^{\xi|\alpha\vartheta + \vartheta\beta|\eta} = \int_{d\vartheta}^{\mathbb{T}} \mathfrak{e}^{\xi|\alpha\vartheta} \ \mathfrak{e}^{\vartheta\beta|\eta}$$

$$= \int_{d\vartheta}^{\mathbb{T}} \sum_{i}^{\mathbb{N}} \frac{\overbrace{\xi|\alpha\vartheta}^{i}}{i!} \sum_{j}^{\mathbb{N}} \frac{\overbrace{\vartheta\beta|\eta}^{j}}{j!} = \sum_{i}^{\mathbb{N}} \frac{\overbrace{\xi|\alpha}^{i}}{i!} \sum_{j}^{\mathbb{N}} \frac{\overbrace{\beta|\eta}^{j}}{j!} \int_{d\vartheta}^{\mathbb{T}} \bar{\vartheta}^{i} \ \vartheta^{j}$$

$$= \sum_{m}^{\mathbb{N}} \frac{\overbrace{\xi|\alpha}^{m}}{m!} \frac{\overbrace{\beta|\eta}^{m}}{m!} = \sum_{m}^{\mathbb{N}} \frac{\underbrace{\xi\overset{*}{\eta}} \overset{m}{\bigstar} \underbrace{\alpha\overset{*}{\beta}}}{\left(m!\right)^{2}} = \sum_{m}^{\mathbb{N}} \frac{1}{m!} \, {}^{\xi\overset{*}{\eta}}\mathcal{E}^{m}_{\alpha\overset{*}{\beta}} = {}^{\xi\overset{*}{\eta}}\Big[1\Big]_{\alpha\overset{*}{\beta}}$$