

$$\begin{array}{ccc}
{}^n\mathbb{C}_n^{\mathbb{U}} \times {}^n\mathbb{C}_n^{\mathbb{U}} & \xrightarrow[\text{on}]{\times} & \mathbb{U} \Big|_O {}^n\mathbb{C}_n^{\mathbb{W}} \\
\uparrow \text{exp} & & \uparrow \text{exp} \\
{}^n\mathbb{C}_n^{\mathbb{W}} \times {}^n\mathbb{C}_n^{\mathbb{W}} & \xrightarrow[\text{on}]{q} & \mathbb{U} \Big|_O {}^n\mathbb{C}_n^{\mathbb{W}}
\end{array}$$

$$\sqrt{\quad} \times_B \frac{\begin{array}{c|c} \mathbb{F} & 0 \\ \hline 0 & \mathbb{F} \end{array}}{0} = \sqrt{\quad} \times_{\dot{B}} \frac{\begin{array}{c|c} \mathbb{F} & 0 \\ \hline 0 & \mathbb{F} \end{array}}{0} B$$

$$B = \frac{1}{\sqrt{2}} \frac{1}{i} \begin{array}{c|c} 1 & i \\ \hline i & 1 \end{array} \curvearrowright BU \dot{B} = i\mathbb{U} \text{ *-inv} / {}^n\mathbb{C}_n^{\mathbb{U}} \times {}^n\mathbb{C}_n^{\mathbb{U}}$$