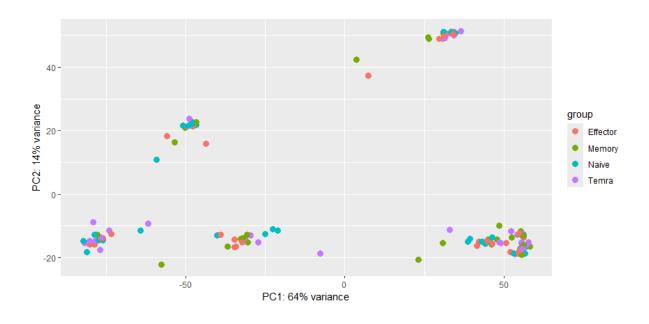
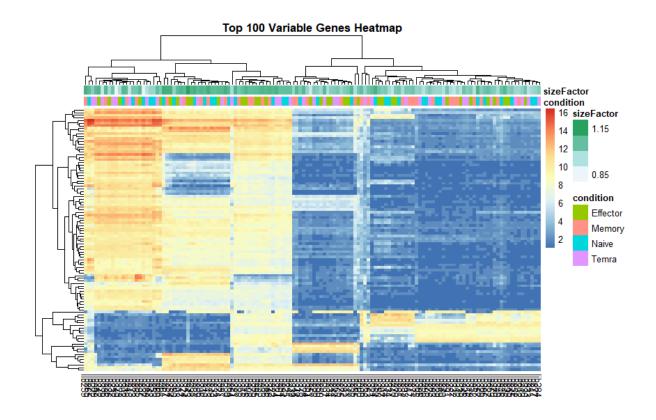


**Boxplot:** VST-normalized gene expression distributions highlight transcriptional divergence across T-cell states (naive, memory, effector).



**PCA:** PCA (PC1: 64% variance) separates samples by cell state, with Effector and Naive populations at opposing poles.



**Heatmap:** Clustered heatmap of top variable genes reveals distinct expression signatures for Naive, memory and effector T-cell subsets.