The trivialization is what we want, i.e., φ. $\Rightarrow$
For $\alpha = 1, \cdots n$, $e_{\lambda_\alpha}(z) = 1$, for
by ⊛ map, $\varphi_{z+\lambda_\alpha} \circ \varphi_z^{-1}(z, l) = (z, l)$.

Now suppose ω is any invariant integral form, positive of type $(1,1)$. Choose a basis $\lambda_1, \cdots \lambda_{2n}$ for Λ over $\mathbb{Z}$ such that in terms of dual coordinates $x_1, \cdots x_{2n}$ on V

$$\omega = \sum_{\alpha=1}^{n} \delta_\alpha \, dx_\alpha \wedge dx_{\alpha+n}, \quad \delta_\alpha \in \mathbb{Z}.$$

Since ω is nondegenerate, $\delta_\alpha \neq 0$ for all α, and we can set

$$e_\alpha = \delta_\alpha^{-1} \lambda_\alpha, \quad \alpha = 1, 2, \cdots n;$$

let $z_1, \cdots z_n$ be linear coordinates on V dual to the basis $e_1, \cdots e_n$. Then as before we can write

$$(\lambda_1, \cdots \lambda_{2n}) = \begin{bmatrix} e_1 \\ \vdots \\ e_n \end{bmatrix} \Omega,$$

i.e.,

$$\begin{bmatrix} dz_1 \\ \vdots \\ dz_n \end{bmatrix} = {}^t\Omega \, (dx_1, \cdots dx_{2n})$$

with

$$\Omega = (\Delta_\delta, Z);$$