$$Z(t - i(\sigma - \frac{1}{2})) = e^{i\vartheta(t - i(\sigma - \frac{1}{2}))}\,\mathcal{R}(\sigma + it) + e^{-i\vartheta(t - i(\sigma - \frac{1}{2}))}\overline{\mathcal{R}}(1 - \sigma + it)$$