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Clear understanding of phonon properties in nanostructures is instrumental in design of novel thermoelectric materials [1-3]. Crystalline/amorphous superlattices (CASLs) consisting of alternated crystalline and amorphous layers are promising in tailoring the thermoelectric properties because they can be made of materials with distinctly different physical and chemical properties. Here we report on theoretical study of phonon thermal transport in c-Si/a-SiO_2 CASLs, which remain less explored in the literature [4]. Comparing equations for lattice thermal conductivity within linearized Boltzmann transport equation [5-6] and Allen-Feldman theory of diffusive thermal transport [7-8] we have obtained an expression for the rate of diffusion of lattice vibrations in a-SiO_2 layers. The obtained expression is parameter-free and can be used for a wide range of amorphous materials. The performed theoretical study have showed, that heat transport in c-Si/a-SiO_2 CASLs is strongly suppressed as compared to purely crystalline c-Si/c-SiO_2 superlattices. Owing to the reduced lattice thermal conductivity, we conclude that c-Si/a-SiO_2 CASLs show promise for thermoelectric applications