Ab-initio calculations of the electronic structure of silicon with trimer-co-dopant have been performed to search a p-type dopant having low activation energy. It is found that there are some trimer co-dopants of Al, Ga, or In having lower activation energy than single elemental dopant. It is also found that there is a relation between increasing acceptor-silicon distance and decreasing of activation energy. As a result, In$_2$N, In$_2$P, and In$_2$Sb trimer co-dopant is one of the most promising candidates for the formation of a high-performance extremely shallow junction in the future ULSI.