Description

Basic voltage level translator utilizes a voltage comparator to translate an input voltage range into an output voltage range. First step is to determine the input voltage range, which involves an input low voltage level $V_{IN}(\text{low})$ and an input high voltage level, $V_{IN}(\text{high})$. Next step is to figure out the proper reference voltage level, at $V_{REF}$. In many cases $V_{REF}$ can be simply midpoint between $V_{IN}(\text{low})$ and $V_{IN}(\text{high})$. In other cases, one may want to skew the $V_{REF}$ voltage level towards either $V_{IN}(\text{low})$ or $V_{IN}(\text{high})$. In this example, the output voltage range is simple ground and $V+$, which also represent output voltage that range from rail to rail. For logic circuit type of voltage level translator, $V_{REF}$ could be set to 1.4V for TTL logic voltages, and $V+/2$ for CMOS logic voltages.

For full schematic diagram and notes, please register and login at aldinc.com