

ABSTRACT

An object is to provide a technique for increasing the voltage across a DC link without increasing the power covered by a power buffer circuit. A discharge duty (dc) that is a duty at which a switch (Sc) is conductive takes a value $((V_m/V_c)\cos^2(\omega t))$ obtained by dividing a product of a crest value (Vm) of a single-phase AC voltage (Vin) and a square ($\cos^2(\omega t)$) of a cosine value of a phase (ωt) of the single-phase AC voltage (Vin) by a both-end voltage (Vc) across a capacitor (C4). A sum of a product of a rectifying duty (drec) that is a duty at which a converter (3) is conductive and a rectified voltage (Vrec) output from the converter (3) and a product of the both-end voltage (Vc) and the discharge duty (dc) varies in a period that is a half of the period of the single-phase AC voltage (Vin).