HIERARCHICAL ARRANGEMENT OF INVERTED BUCK CONVERTER FOR INCREASING THE EFFICIENCY OF AC-DC LED DRIVE

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This work presents a simplified and more efficient circuit of an ac to dc led driver in which to buck converters are hierarchically arranged to increase its power factor and reduce voltage stress. The inverters are parallel arranged so that one buck converter does power factor correction and provides energy to the load and the other converter regulates the load current in order to maintain constant brightness in the load and thus decreasing the light flicker. This model allows the usage of a film capacitor instead of an electrolytic capacitor and thus also reducing overall cost the capacitors here are also used as dc filters to reduce ripples. This gives us power factor of 0.98 in a 12W led bulb.

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