Abstract:

A bridgeless Power Factor Correction (PFC) circuit based on Cuk converter is proposed in this paper. The operation during each sub-interval modes of the converter operated in Discontinuous Conduction Mode (DCM) is discussed. The smallsignal and large signal models are presented using Current Injected Equivalent Circuit Approach (CIECA). PLECS/Simulink is used to verify the capability of the proposed converter to regulate the output voltage while the input current regulation is inherent. This converter is capable to operate in universal input voltage condition.