Diode Capacitor Dynamic Analysis

What is the dynamic model of LLC converter?
The dynamic model of the proposed LLC converter is built with the averaged large-signal modeling method. Then,the SM-PI control is proposed based on the dynamic model,and the fuzzy control is introduced to implement a smooth transition between the SM control and the PI control.

What if VCA VP lags the inverter output voltage VAB?
If vca<Vp,the resonant current iLrlags the inverter output voltage vab,and ZVS can be implemented,which results in increased efficiency and improved reliability. In general,the control angle ga is a continuous variable. In order to apply the SM control,a discrete SSPSM is proposed.

How resonant current can be captured by a DSP?
The zero-crossing momentof the resonant current can be captured by the DSP. Then,the signal vr3 can be easily generated. The logic signals vr1,vr2 and vr3 can be converted into the drive signals LQ1-LQ4 through the logic operations of NOT gate,NAND gate and RS flip-flop. After that,the dead-time of LQ1-LQ4 is generated by the RCD circuit.

Various topological modifications of diode-capacitor voltage multipliers are considered. All the topologies are based on two known schemes: Cockcroft-Walton and ...

Simulation and experimental results validate the theoretical analysis and the attractive features of the proposed scheme. Key words: LLC resonant converter, Phase shift modulation, ...

The second thing you can do is actually a mathematical model. With this math model, you can see that you have the voltage drop across the diode on the left hand of the ...

Mathematical analysis and experiment results verify that diode-assisted dc-dc converters are very promising for simultaneous high efficiency and high step-up/step-down ...

Modeling and Analysis of Shutdown Dynamics in Flying Capacitor Multilevel Converters Samantha Coday, Nathan Ellis and Robert C.N. Pilawa-Podgurski ... Body Diode Conduction: ...

In this paper, a single-switch hybrid dual diode-capacitor (HDDC) boost converter with less stress over all devices for high voltage gain applications is proposed. ... and ...

Fig. 12. Waveforms of new main circuit with adaptive PI parameters under different step change of reference. (a) Step change of reference voltage from 120 to 160 V. (b) Step change of ...

High step-up DC-DC converter based on the switched-coupled-inductor boost converter and diode-capacitor

multiplier: Steady state and dynamics April 2015 IET Power ...

In this study a new scheme of a step-up converter with very high voltage gain is proposed. The scheme is based on a natural combination of the switched-coupled-inductor boost converter ...

Diode-capacitor based DC-DC converters provide a simple and low cost solution for high step-up voltage regulation in solar and fuel cell generation. Transient modeling analysis reveals their ...

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