

What is a high frequency inverter?

In many applications, it is important for an inverter to be lightweight and of a relatively small size. This can be achieved by using a High-Frequency Inverter that involves an isolated DC-DC stage (Voltage Fed Push-Pull/Full Bridge) and the DC-AC section, which provides the AC output.

What is a zero crossing region in a single stage inverter?

For zero crossing region, the LLC converter is shut down and the output capacitor will discharge to the load until the output voltage drops to zero. With the proposed hybrid modulation method for the single-stage inverter, the whole circuit will be simpler and the bulky dc bus capacitor will be saved.

Which power supply topologies are suitable for a high frequency inverter?

The power supply topologies suitable for the High-Frequency Inverter includes push-pull, half-bridge and the full-bridge converter as the core operation occurs in both the quadrants, thereby, increasing the power handling capability to twice of that of the converters operating in single quadrant (forward and flyback converter).

Can a single-stage isolated inverter be used as a drectified sine stage?

However, the relevant research for the single-stage isolated inverter is limited. People either utilize PWM based converter as drectified sine stage with duty cycle adjustment or apply SRC - or LLC resonant converter for better soft switching characteristics.

Can a soft-switching inverter have wide-range ZVS and voltage gain?

108 soft-switching inverter applications and appears to be an appropriate method for the proposed LLC converter to have wide -range ZVS and voltage gain. With FB changed to HB, voltage gain is reduced to half and VFM has the lowest resonant current rms value compared to other modulation methods.

How MHz LLC converter based inverter improve SR turn-on delay loss?

With the proposed hybrid modulation method and resonant tank optimization process, the MHz LLC converter based inverter is designed and tested. To further improve the SR turn-on delay loss, an external diode is added in parallel with GaN SR and the forward recovery effect of the diode can impact its loss saving performance.

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