

## SolarTech Power Solutions

# Zero Voltage Conversion Inverter



## Overview

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What is zero voltage switching?

ing technique [9,10].Zero Voltage Switching Overview Zero voltage switching can best be defined as conventional square wave power conversion during the switch's on-time with "resonant".

What is a zero current switched converter?

unlike the energy transfer system of its cal dual, the zero current switched converter. During the ZVS switch off-time, the L-C tank circuit resonates. This traverses the age across the switch from zero to its and back down again to zero. At this point switch can be reactivated, and lossless voltage switching facilitated.

What is zero voltage switching (ZVS)?

Definition Zero Voltage Switching (ZVS) means that the power to the load (heater or cooler or other device) is switched on or off only when the output voltage is zero volts. A major disadvantage of phase control as a means of controlling load power is the RFI generated when the thyristors are triggered into the on state.

Why is zero voltage switching important?

In these applications, losses associated with discharging of the MOSFET output capacitance can be significant at high switching frequencies, im-pairing efficiency. Zero voltage switching avoids this penalty by negating the drain-to-source, "off-state" voltage via the resonant tank.

What is a ZVS inverter?

Hillcrest's ZVS inverter platform is engineered to meet these demands by improving not just component-level performance, but the entire power conversion system. Wide bandgap (WBG) semiconductors like silicon carbide (SiC) and gallium nitride (GaN) have opened the door to smaller, faster, and

more efficient inverters.

How does a ZVS converter work?

**STATUS CIRCUIT VALUES** In a ZVS converter operating under ideal conditions, the on-time of the switch approaches zero, and the converter will at maximum frequency and deliver zero output voltage.

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