Product Overview

FAN7631: Advanced PFM Controller for Half-Bridge Resonant Converter, High Frequency to 600KHz, Programmable Dead Time, Brown Out Protection

For complete documentation, see the data sheet.

The FAN7631 is a pulse-frequency modulation controller for high-efficiency half-bridge resonant converters that includes a high-side gate drive circuit, an accurate current-controlled oscillator, and various protection functions. The FAN7631 features include variable dead time, high operating frequency up to 600kHz, protections such as LUVLO, and a selectable latch or A/R protection using the LS pin for user convenience. The Zero-Voltage-Switching (ZVS) technique reduces the switching losses and improves the efficiency significantly. ZVS also reduces the switching noise noticeably, which allows a small Electromagnetic Interference (EMI) filter. Offering everything necessary to build a reliable and robust resonant converter, the FAN7631 simplifies designs and improves productivity and performance. The FAN7631 can be applied to resonant converter topologies such as series resonant, parallel resonant, and LLC resonant converters.

Features

- Variable Frequency Control with 50% Duty Cycle for Half-Bridge Resonant Converter Topologies
- High Efficiency with Zero-Voltage-Switching (ZVS)
- Up to 600kHz Operating Frequency
- Built-in High-Side Gate Driver
- High Gate-Driving Current: +500mA/-1000mA
- Programmable Dead Time with a Resistor
- Pulse Skipping and Burst Operation for Frequency Limit (Programmable) at Light-Load Condition
- Simple Remote On/Off Control with Latch or Auto-Restart (A/R) Using Fl or LS Pin
- Protection Functions: Over-Voltage Protection (OVP), Overload Protection (OLP), Over-Current Protection (OCP), Abnormal Over-Current Protection (AOCP), Internal Thermal Shutdown (TSD), and High Precise Line Under Voltage Lockout (LUVLO)
- Level-Change OCP Function During Startup

For more features, see the data sheet

Applications

- PDP TV
- LCD TV
- Desktop PC
- Server
- Video Game Console

Part Electrical Specifications

<table>
<thead>
<tr>
<th>Product</th>
<th>Pricing ($/Unit)</th>
<th>Compliance</th>
<th>Status</th>
<th>Topology</th>
<th>Control Mode</th>
<th>fsw Typ (kHz)</th>
<th>Standby Mode</th>
<th>UVLO (V)</th>
<th>Short Circuit Protection</th>
<th>Latch</th>
<th>Soft Start</th>
<th>VCC Max (V)</th>
<th>Drive Cap. (mA)</th>
<th>Package Type</th>
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