



GreenChip SMPS Primary Side Control IC with Fixed Frequency Operation

TEA19362T

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The TEA19362T is a member of the GreenChip family of controller ICs for switched mode power supplies. It is intended for flyback topologies to be used either standalone or together with smart charging controllers (like the TEA190x series) at the secondary side. It also offers improved compatibility with touch-screens. The built-in green functions provide high-efficiency at all power levels.

The TEA19362T is compatible with smart charging applications that require fixed frequency operation. Fixed-frequency operation minimizes Common-Mode Noise (CMN) and optimizes spectral purity towards the (mobile) touch screens. When used with a secondary-side controller IC, like the TEA190x series, it supports Constant Current (CC) mode down to 3 V output voltage.

At high power levels, the flyback can operate in Boundary Conduction Mode (BCM) depending on application components. For lowest CMN and highest spectral purity, the TEA19362T can be set to full Discontinuous Conduction Mode (DCM) operation. Switch-on, based on demagnetization sensing, enables steady operation at a constant frequency. In this way, a cleaner CMN spectrum is achieved.

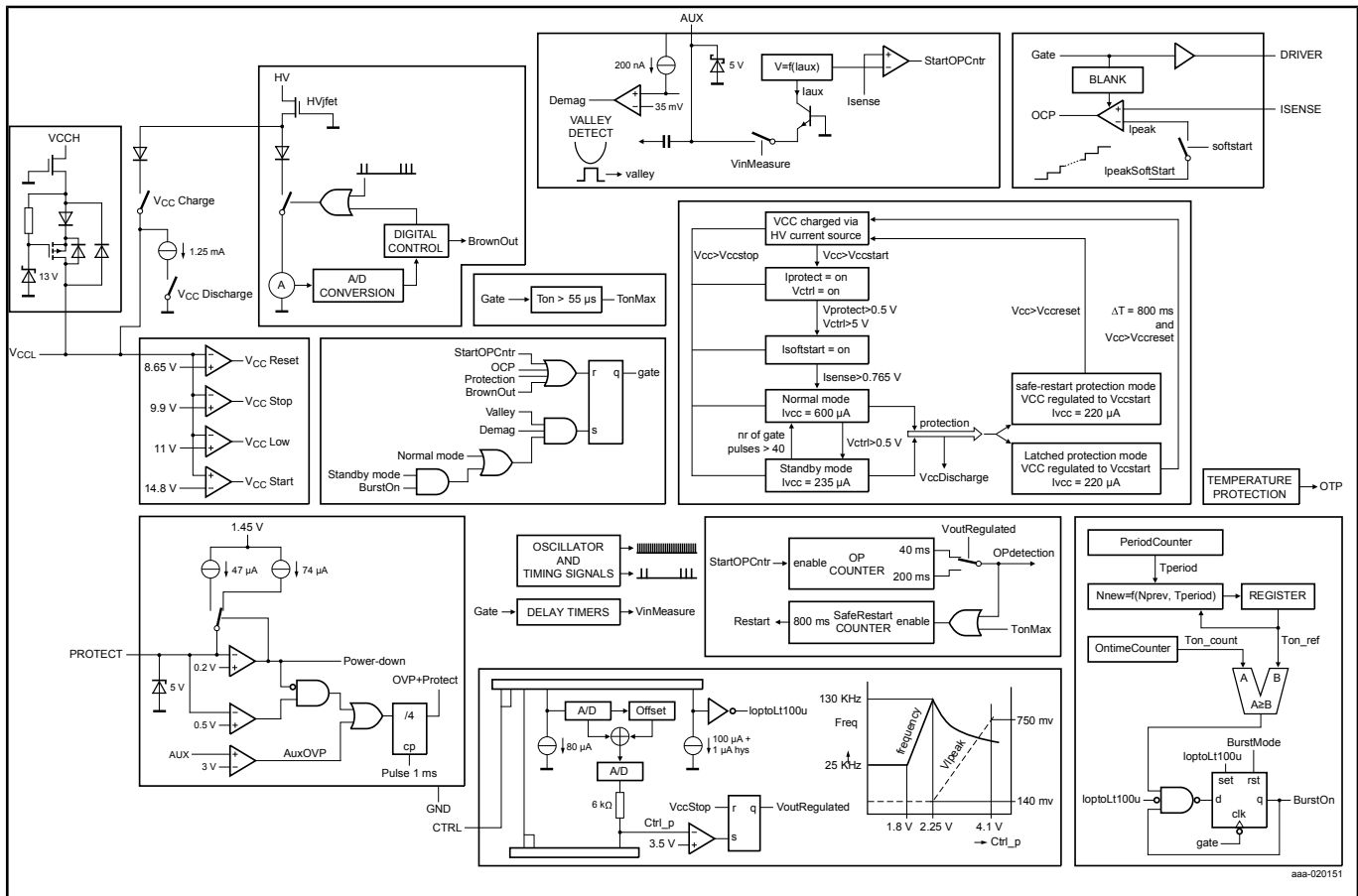
At very low power levels, the controller uses burst mode to regulate the output power. A special optocoupler current reduction regulation has been integrated which reduces the average opto current in all modes to a minimum level. This reduction ensures high-efficiency at low power and excellent no-load power performance. As the switching frequency in this mode equals the nominal frequency (f_{sw}) and the burst repetition rate is regulated to a fixed value, spectral purity is preserved and output ripple is limited. During the non-switching phase of the burst mode, the internal IC supply current is minimized for further efficiency optimization.

The TEA19362T includes a wide set of protections that are safe-restart protections. One of these protections is an accurate OverPower Protection (OPP). If the output is shorted, the system stops switching and restarts. The output power is then limited to a lower level. The TEA19362T is manufactured in a high-voltage Silicon-On-Insulator (SOI) process.

The SOI process combines the advantages of a low-voltage process (accuracy, highspeed protection, functions, and control). However, it also maintains the high-voltage capabilities (high-voltage start-up, low standby power, and brownin/brownout sensing at the input).

The TEA19362T enables low-cost, highly efficient and reliable supplies for power requirements up to 75 W using a minimum number of external components.

TEA1936X Block Diagram Block Diagram



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