

Flicker-Free™ IS31LT3935

TRIAC Dimmable AC/DC LED Driver with Active PFC

March 2013

GENERAL DESCRIPTION

The Flicker-Free™ IS31LT3935 is a single stage current-mode LED driver optimized for high power factor and compatibility with all TRIAC dimmers. The PFC architecture enables excellent power factor over a wide range of operating line and load conditions, even with the simplest of inductor-based driver topologies, thereby reducing system cost and size while maximizing efficiency.

The IS31LT3935 LED controller features patent pending AccuDim™ flicker-free dimming technology that mimics the characteristics of an incandescent light bulb. It presents a dynamic impedance to the dimmer and integrates an active bleed circuit for true dimming performance across all dimmers.

The device is available in a tiny 10 lead DFN-EP (3mm × 3mm) package. It operates over the temperature range of -40°C to +85°C.

TYPICAL APPLICATIONS

- Dimmable Retrofit LED Lamps and Luminaries up to 30W
- Industrial and Commercial Lighting
- Offline LED Driver Modules and Bricks

FEATURES

- Smooth 0-100% Flicker-free Dimming Range
- Compatibility with all TRIAC Dimmers (Digital, Leading and Trailing-edge)
- Near-unity PFC without External PFC Circuitry
- Spread-Spectrum Switching for Reduced EMI
- Low 500µA Quiescent Current
- Protections:
 - Soft Start
 - Under-voltage, (Over-voltage) Lockout
 - Thermal Shutdown

DIMMING PERFORMANCE

- Power Factor = 0.99 at 13W output
- Power Factor = 0.91 at 1W output
- Efficiency: 87% from 120Vrms to 39Vdc at full power
- Efficiency: 85% from 120Vrms to 23Vdc at full power
- Efficiency: >82% down to 2W output
- 0~100% Light Output and anything in between
- No flicker over Full Dimming Range

TYPICAL APPLICATION CIRCUIT

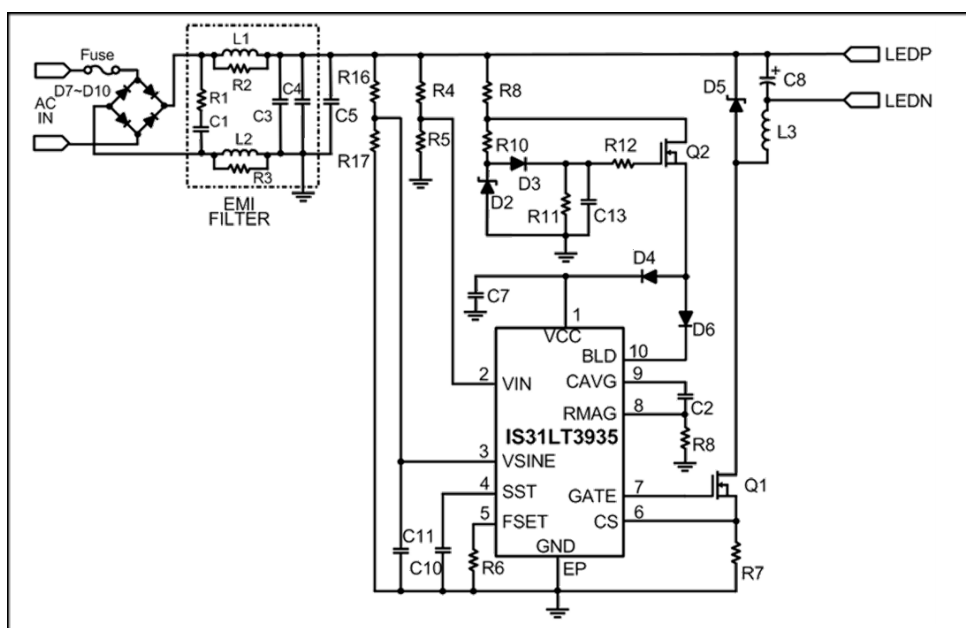


Figure 1 Typical Application Schematic

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