



The Future of Analog IC Technology™

# MP1038

## Full Bridge CCFL Controller

### DESCRIPTION

The MP1038 is a fixed operating frequency inverter controller that controls four external N-Channel power MOSFETs in a full-bridge configuration. The inverter is designed to power one or more cold cathode fluorescent lamps (CCFL) to backlight liquid crystal displays. Its full-bridge architecture converts unregulated DC input voltages to the nearly pure sine waves required to ignite and operate CCFL.

For reliable lamp ignition, the operating frequency is set by an external resistor and during startup, is temporarily swept toward the unloaded resonant frequency of the tank. The built-in burst oscillator can be synchronized with an external clock to minimize display scan interference. Burst mode or analog mode dimming is controlled with an external analog signal. Built-in fault management features include an open lamp regulator, a transformer secondary peak current regulator, and a dual-mode fault timer. The secondary over-current timeout can be shortened with external components. Built-in current limits for the external switches protect against inadvertent shorts. The MP1038 is available in TSSOP28 and SOIC28 packages.

### FEATURES

- Controls Four External, Low Cost, N-Channel MOSFETs
- Fixed Operating Frequency
- Input Voltage Range of 10V to 32V
- Lamp Current and Voltage Regulation
- Full-Wave Sense Amp
- Analog and Burst Mode Dimming Control
- Integrated Burst Mode Oscillator and Modulator
- Soft-On and Soft-Off Burst Envelope
- Open Lamp Protection
- Secondary Over-Current Protection
- Dual-mode, Fault Timer
- Available in TSSOP28 and SOIC28 Packages

### APPLICATIONS

- Desktop LCD Flat Panel Displays
- Flat Panel Video Displays
- LCD TVs and Monitors

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The MP1038 is covered by US Patents 6,683,422, 6,316,881, and 6,114,814. Other Patents Pending.

### TYPICAL APPLICATION

