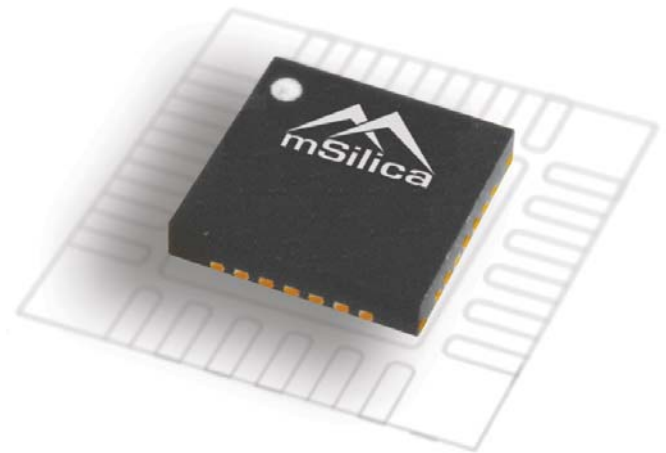




MSL3162 Series

Sixteen-String High-Current LED Driver with E²PROM, I²C Interface, Video Sync and Adaptive Power Control for up to 3 power sources



Features:

- Supports adaptive 2-D Dimming for advanced LCD TVs and PC monitors
- Drives 16 parallel High-Power LED Strings with up to 10 LEDs/string
- FLEXISTRING™ technology to assign any string to any color LED
- Up to 100mA peak LED string current with internal N-MOSFETs
- Up to 60mA continuous LED current
- External resistor to set LED string peak current
- Adaptive SourcePower™ correction for adjusting DC-DC output voltage
- Video frame rate synchronization and multiplier helps eliminate motion blur
- Programmable phase delays improve contrast ratio and save power during blanking periods
- ±1.5% current accuracy and current balance
- Individual brightness and phase control of each LED string
- Open-circuit and Short circuit fault condition detection and protection automatically turn off faulty strings
- Allows highest dynamic range LCD TV
- FastMode-Plus I²C/SMBUs interface with up to 16 user programmable addresses.
- PWM phasing and in-rush current control to reduce EMI
- Field programmable non-volatile registers for customization and aging compensation
- User programmable temperature control of LED current.

Description:

The MSL3162 are compact high current 16-parallel string LED drivers. They use internal current control MOSFETs to drive up to 60mA continuous current per channel with better than 1.5% accuracy. The advanced PWM engine is synchronized to the video signal to reduce LCD artifacts such as motion blur. It uses a 1MHz I²C compatible serial interface for brightness control and fault monitoring.

Individual LED string current is modulated using an 8-bit PWM control. Brightness fine-tuning is available through the 6-bit Global Brightness control or digital PWM input. An external resistor provides the global reference current for all the LED strings. Individual LED string current is controlled through 6-bit DACs.

The MSL3162 adaptively controls the DC-DC converters that powers the LEDs using the patented SourcePower™ control. This provides optimum voltage headroom minimizing power losses while maintaining LED current accuracy. MSL3162 synchronizes PWM dimming to multiples of the video frame refresh rate using a built-in DLL multiplier. This also allows the backlight to be off during the video blanking period saving power and reducing heat. Phasing circuitry phase shifts PWM on-times to reduce transient loads on the LED power source, improving image quality.

The MSL3162 features fault monitoring of open string, short-circuit and over temperature conditions with fault status available through the I²C/SMBus. It supports both individual device I²C read/write and broadcast write commands allowing multiple MSL3162s to be configured simultaneously. Each MSL3162 is set to one of 16 pin selectable addresses allowing multiple devices to operate on the same serial interface.

The MSL3162 has an embedded E²PROM that allows it to customize the internal registers with user-programmed defaults.

Ordering Information:

PART #	Pin / Package	Description
MSL3162	6x6mm ² 40-QFN	3 color or RGB LED driver with 3 power control o/p

Applications:

- LED Backlit Notebook PC Displays
- R, G, B LED Arrays
- Signage Arrays
- General Lighting
- PC Monitors
- Portable DVD players
- Automotive Lighting
- Industrial Display



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Typical Circuit:

