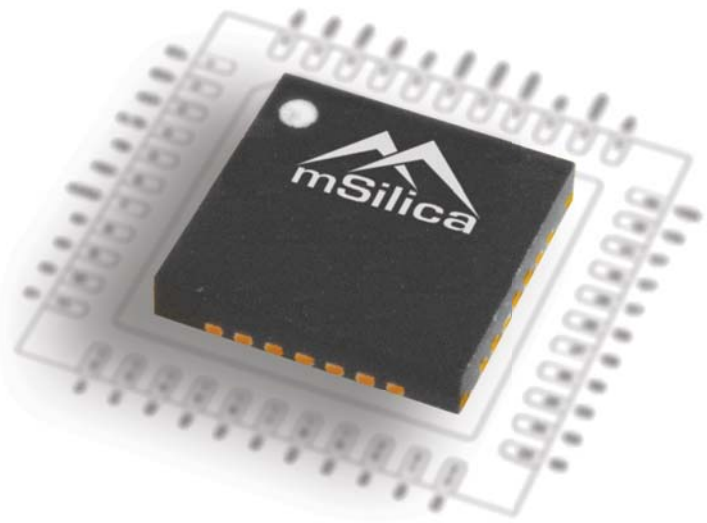
MSL3082 Series

8-String R, G, B LED Drivers
with E2PROM, I2C Interface
& Adaptive Power Control



Features:

- Supports adaptive 2-D Dimming for advanced LCD TVs and PC monitors
- Drives 8 parallel High-Power LED Strings
- FLEXISTRING™ technology to assign any string to any color LED
- Up to 1A LED string current with external N-Channel MOSFETs
- Video frame rate synchronization and multiplier helps eliminate motion blur and save power during blanking periods
- Programmable phase delays improve contrast ratio
- ±1% current accuracy and current balance
- Individual LED String brightness and phase control
- Adaptive SourcePower™ correction for adjusting DC-DC output voltage
- Open-circuit and short-circuit fault condition detection.
- Supports area dimming for 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.
- Sleep mode

Description:

The MSL3082 is an 8-parallel string high-power LED drivers. The MSL3082 uses a 1MHz I²C compatible serial interface for brightness control and fault monitoring. Each channel has a ±1% (max) accurate constant control current sink capable of driving an external N-Channel MOSFET.

The MSL3082 has a single DC/DC converter control output for controlling or using a single power source driving 3 color LED strings. Each channel can be used for any color LED. The LED current can be modulated for each LED string using an 8-bit individual PWM control. Additionally, a 6-bit Global Brightness control through register setting or PWM pin allows finer control of brightness. 6-bit DAC on each channel allow 64-step analog control of the output current.

The MSL3082 provides signals to adaptively control DC-DC converters that provide input power to LED strings. Adaptive SourcePower™ control provides optimum voltage headroom minimizing power losses. In LCD TV and TFT monitor panels, MSL3082 allows synchronization to video signals using a DLL multiplier to control brightness at a frequency multiple of the video refresh rate. 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 efficiency and visual quality.

The MSL3082 features fault monitoring of open string, short-circuit and overtemperature conditions through the I²C/SMBus. MSL3082 supports both individual device I²C read/write and broadcast write commands. The serial interface uses two pins to select 16 addresses allowing multiple MSL3082s to operate on the same serial interface.

The MSL3082 includes non-volatile memory to maintain settings even when turned-off allowing it to begin full operation within 5ms of turn-on. This also provides for LED aging correction.

Ordering Information:

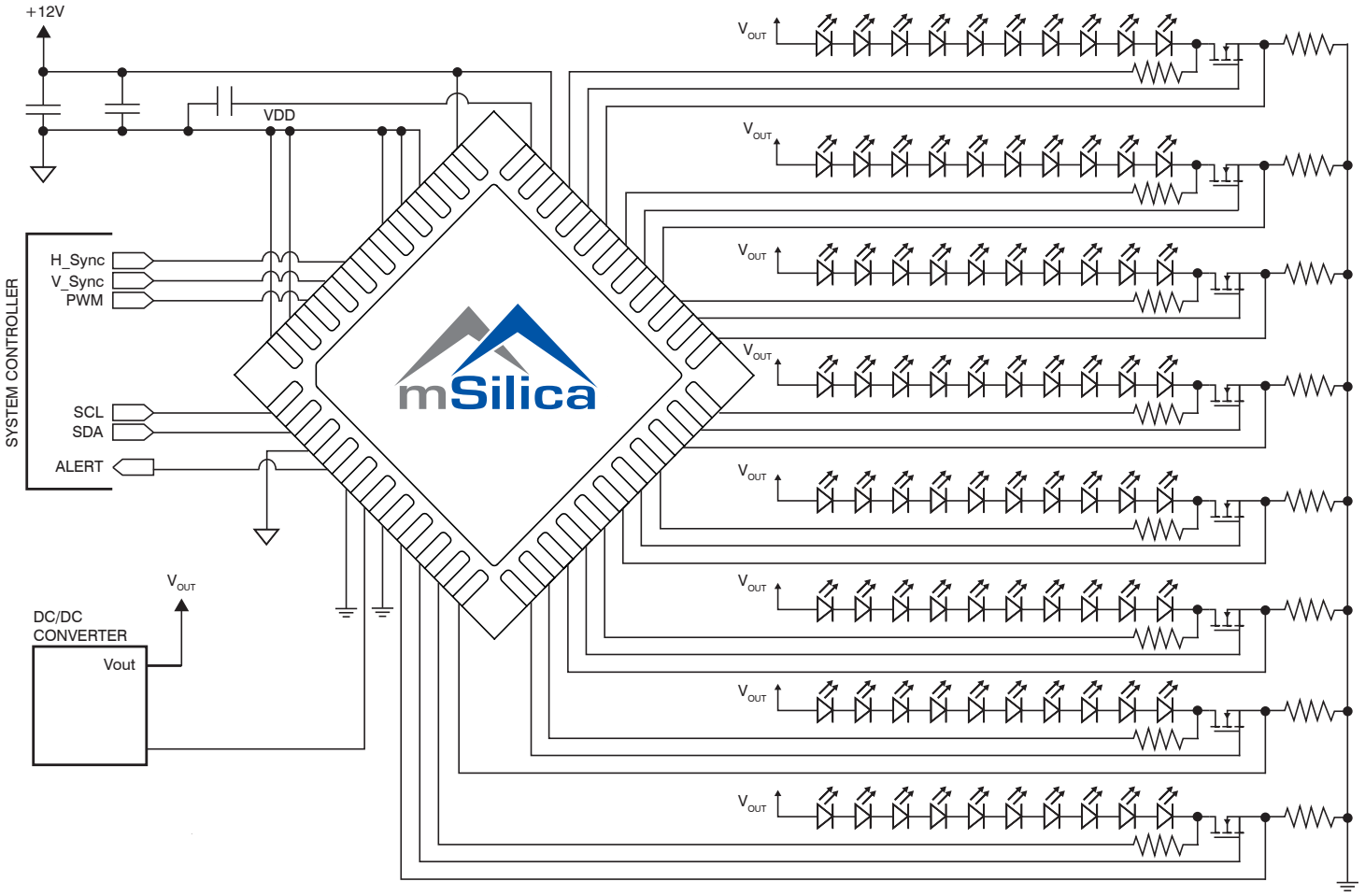
PART #	Pin / Package	Temp Range
MSL3082	7x7 QFN-44	-40°C to 85°C

REV: 080509

MSL3082 Series

8-String R, G, B LED Drivers
with E2PROM, I2C Interface
& Adaptive Power Control

Typical Circuit:



For critical applications like medical, aeronautical or military, contact factory. For Pricing, Samples & GUI Software, visit us at www.mSilica.com
mSilica, Inc. | 2901 Tasman Drive, Suite 203, Santa Clara, CA 95054, USA | Phone: (408) 654-7680 | Fax: (408) 654-7682 | Email: info@msilica.com