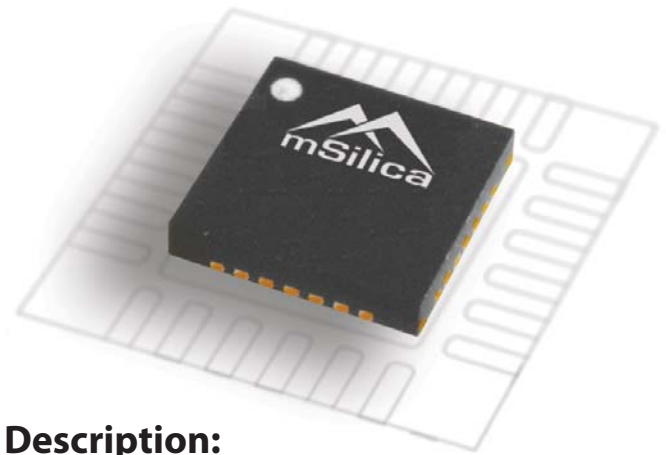




# MSL1060 Series

Six-String LED Driver  
with Integrated 50V Switch,  
±1% Current Balance and  
Internal Digital Compensation



## Features:

- Drives Six Strings of up to 12 LED's per String (72 LEDs maximum)
- Integrated 50V MOSFET, Step-up Regulator
- Better than ±1% String to String Current Balance Accuracy
- Up to 92% Efficiency
- Wide Input Supply Range of 4.5V to 36V
- Adjustable LED Current up to 25mA
- Low 600mV Feedback Voltage
- Individual String Open-circuit, Short circuit Detection, Reporting and Protection
- Current sinks can withstand full 50V<sub>DC</sub> Output
- Adjustable Over-voltage Protection
- Driving >25mA LED's Using Multiple Driver Inputs
- Interface with ALS for Automatic Brightness Setting or NTC for Temperature Derating
- Dimming using PWM
- Sleep Mode

## Description:

The MSL1060 is a 6-string LED Driver incorporating a current mode boost regulator with 50V internal switch and requires only a small inductor, output capacitor, and rectifier. The wide 4.5V to 36V input voltage range makes it suitable for many applications. 1MHz switching frequency allows small components while maintaining high efficiency. Each LED string powers up to 12 series LEDs, allowing a maximum of 72 LEDs. The IC regulates LED current up to 25mA per string. The MSL1060 use a digital control loop that eliminates the need for external compensation components.

The MSL1060 provides a 500:1 dimming range. Dimming is achieved via an external PWM signal with frequency up to 10 kHz or by controlling the LED current using the IADJ pin. String current can also be controlled with an ambient light sensor (ALS) and/or a negative temperature coefficient (NTC) thermistor based temperature sensor to modulate the string output intensity. This allows consistent light output over widely varying environmental conditions ( -40°C to 85°C) extending LED lifetimes.

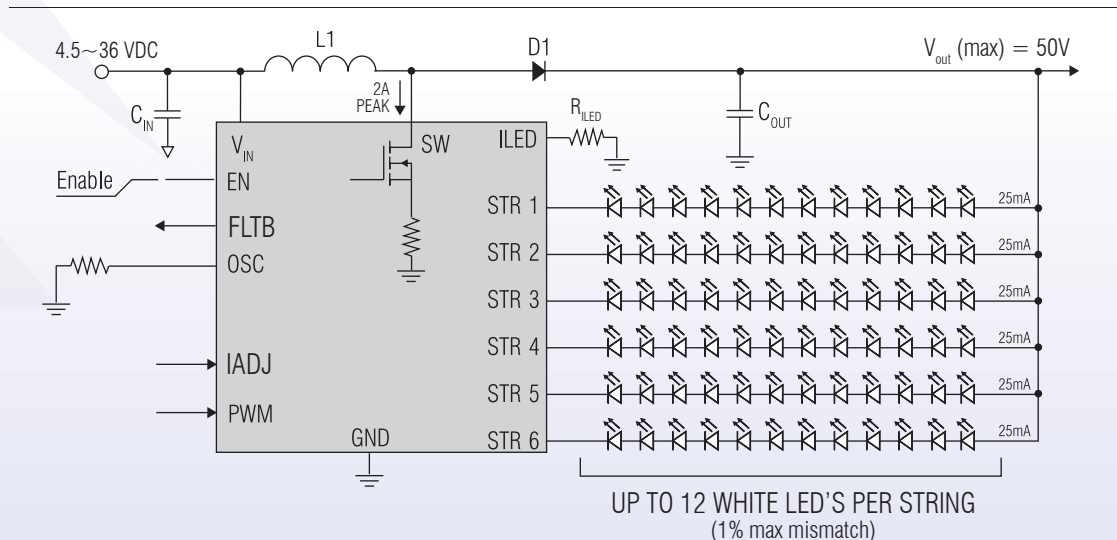
## Ordering Information:

PART #	Pin / Package	Description
MSL1060	5x5 mm2 TQFN-24	6-Ch, LED Driver

## Applications:

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

## Typical Circuit:

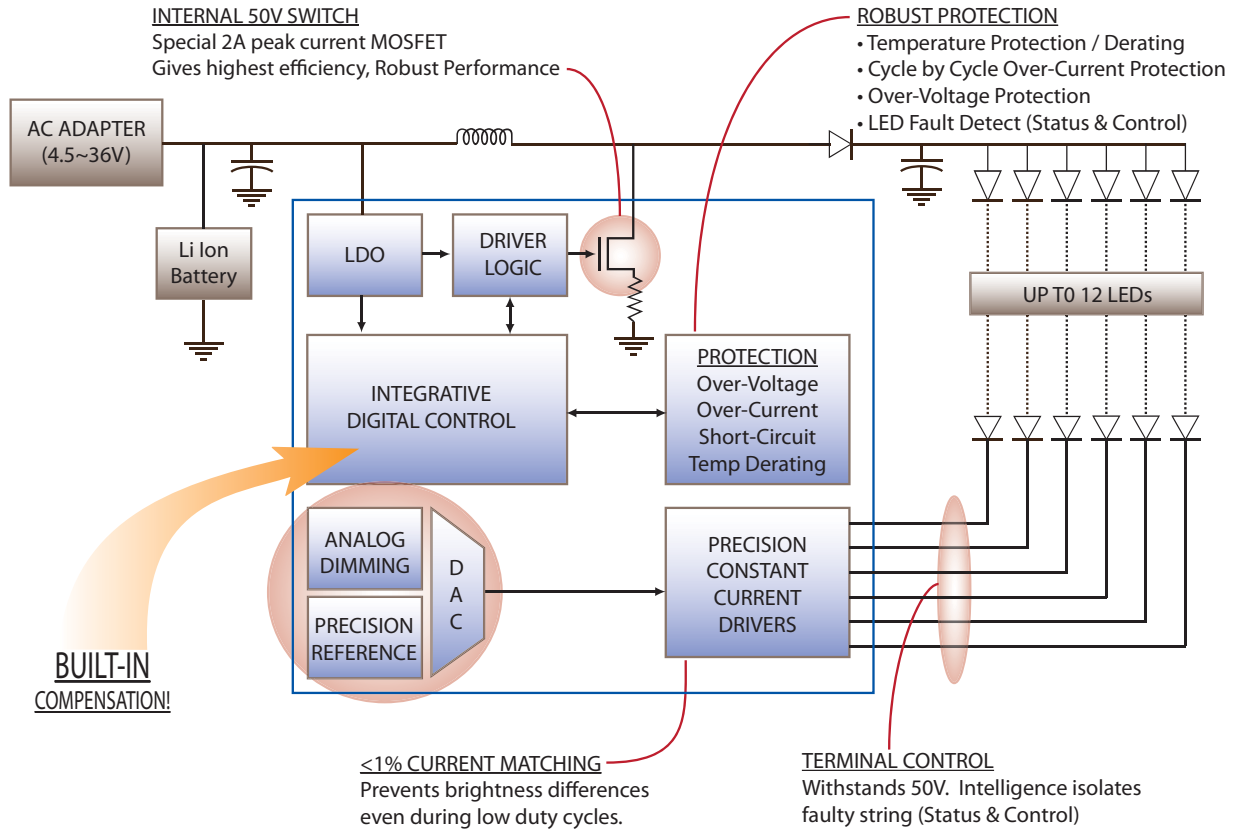




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## Block Diagram:



## TYPICAL OPERATING CHARACTERISTICS:

( $V_{IN}=12V$ ,  $V_{EN}=V_{IN}$  LEDs=10 series x 6 parallel,  $R_{ILED}=100k$ ,  $T_A = +25^{\circ}C$ )

Efficiency vs Duty Cycle

