



16-Channel High Accuracy Constant Current LED Driver

MY-Semi

With 16bits Multiplex-PDM Control for Dynamic Scanning Systems

General Description

The MY9268, 16-channel constant current LED driver with 16bits grayscale M-PDM (Multiplex Pulse Density Modulation) control, supports dynamic 1/2, 1/4, 1/8 scanning applications. The distinctive M-PDM technology enhances the refresh rate of dynamic scanning systems without increasing the frequency of grayscale clock in order to prevent from EMI interference. And the technique of automatic black frame insertion could abate efficiently the influence of blurs caused by the scanning switch.

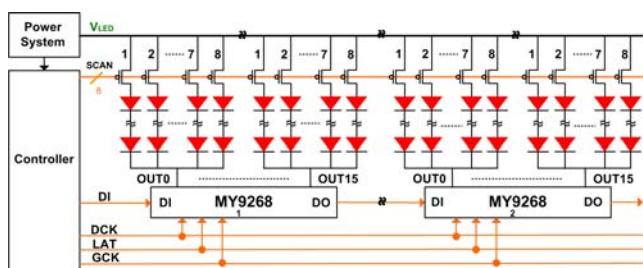
The device operates over a 3V to 5.5V input voltage range and provides 16 open-drain constant current sinking outputs that are rated to 16V and delivers up to 55mA of high accuracy current to each string of LED. The current at each output is programmable by means of an external current-sensing resistor and could be adjusted by 8bits linear global current control. By this advanced M-PDM approach, the frame refresh rate could be improved up to 10000Hz in dynamic 1/8 scanning systems and 20000Hz in dynamic 1/4 scanning systems when the grayscale clock is 10MHz. The MY9268's on-board pass elements minimize the need for external components, while at the same time, providing $\pm 1.5\%$ LED current accuracy. Additional features include a $\pm 0.1\%$ regulated output current capability and 50ns fast output transient response.

The MY9268 is available in a 24-pin SOP/SSOP/TSSOP /QFN package and specified over the -40°C to $+85^{\circ}\text{C}$ ambient temperature range.

Applications

- Indoor and Outdoor LED Video Displays
- Variable Message Sign (VMS)
- Dot Matrix Module
- LCD Display Backlighting

Typical Operating Circuits



Features

- ◆ 3.3V ~ 5V Operating supply voltage
- ◆ 3~55mA/5V Constant current output range
- ◆ 3~35mA/3.3V Constant current output range
- ◆ 16V Rated output channels for long LED strings
- ◆ $\pm 1.5\%$ (typ.) LED Current accuracy between channels
- ◆ $\pm 3\%$ (typ.) LED Current accuracy between chips
- ◆ $\pm 0.1\%$ Output current regulation capability
- ◆ Build-in 4K bits SRAM
- ◆ For dynamic 1/2, 1/4, 1/8 scanning systems
- ◆ 16bits grayscale resolution with Multiplex Pulse Density Modulation [patent pending]
- ◆ Supports diverse applications of 8bits~16bits grayscale resolution
- ◆ Refresh rate up to 20000Hz in 1/4 scanning systems
Refresh rate up to 10000Hz in 1/8 scanning systems
(The vanishing off-line time is not considered)
- ◆ EMI reduction grayscale clock
- ◆ Automatic black frame insertion
- ◆ Ghost image abatement
- ◆ 8bits linear global current control
- ◆ 30MHz Clock frequency for data transfer
- ◆ 50ns fast current transient response
- ◆ Current setting by one external resistor
- ◆ Schmitt trigger input
- ◆ Power on reset
- ◆ -40°C to $+85^{\circ}\text{C}$ Ambient temperature range

Order information

Part	Package Information	
MY9268SA	SOP24-236mil-1.0mm	2000 pcs/Reel
MY9268SS	SSOP24-150mil-0.635mm	2500 pcs/Reel
MY9268TE	TSSOP24-173mil-0.65mm (Exposed Pad)	2500 pcs/Reel
MY9268QF	QFN24-4mmx4mm-0.5mm	3000 pcs/Reel

Pin Configuration

