



16-Channel High Accuracy Constant Current LED Driver

MY-Semi With Error Diagnostics & Power Saving & Global Current Control

General Description

The MY9163, 16-channel constant current LED driver operates over a 3.0V ~ 5.5V input voltage range, supports error diagnostics, power saving function and current gain control. The device provides 16 open-drain constant current sinking outputs that are rated to 17V and delivers up to 90mA 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 can be adjusted by 256 steps. The MY9163 features a fast 30MHz DCK input, allowing large amount data transfer and a wide LED dimming (on/off) range to be implemented. The MY9163 offers a 4-wire serial interface, a 16-bit shift register, and a 16-bit transparent latch. The serial interface allows a microcontroller to configure the output channels using four inputs (DI, DCK, LAT, and ENB) and a data output (DO). DO allows multiple drivers to be cascaded and operated together.

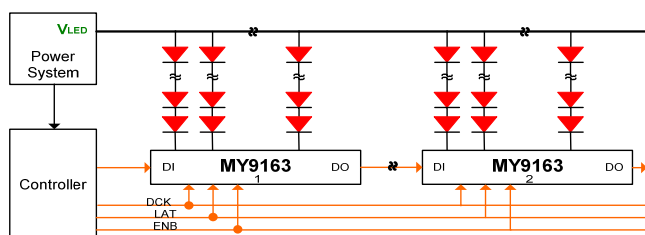
The MY9163 provides compulsory error detection. Under compulsory error detection, the display image will not be affected since the interval and current are small. Differing from error mode selections; the specified diagnostic can be performed. The error will be stored back to the shift register and could be read out from the DO pin. Moreover, the threshold voltage for LED short detection can be selected to comply with different LED string configuration.

The MY9163 is available in a 24-pin SOP / SSOP / TSSOP / QFN package (pin definition compatible with MY9161) and specified over the -40°C to +85°C ambient temperature range.

Applications

- Traffic Signals/Signs
- Variable Message Sign (VMS)
- Public Transportation (Train, Bus, Underground)
- Indoor and Outdoor Video Display
- LCD Display Backlighting

Typical Operating Circuits



Features

- ◆ 3.0V ~ 5.5V Operating supply voltage
- ◆ 3~90mA/5V Constant current output range
- ◆ 3~70mA/3.3V Constant current output range
- ◆ 17V Rated output channels for long LED strings
- ◆ ±1.5% (typ.) LED Current accuracy between channels
- ◆ ±3% (typ.) LED Current accuracy between chips
- ◆ ±0.1% Output current regulation capability
- ◆ Compulsory error detection includes LED Open, LED Short, Output port leakage, Output short to GND, Output short to Power
- ◆ Real time error detection includes LED Open, LED Short
- ◆ Compulsory error detection with 0.1mA
- ◆ Fast error detection: 80ns (min.)
- ◆ Short detection threshold voltage selection (2 / 3 / 4 / 4.5 Volt)
- ◆ Power saving mode: sleep mode and 0-data mode
- ◆ Sleep mode to lower down the supply current to 0.1uA
- ◆ 0-data mode to lower down the supply current to 0.1uA
- ◆ Over-temperature warning
- ◆ 8bits global current control: ranges from 17% to 200%
- ◆ 30ns fast current transient response
- ◆ Output current setting by one external resistor
- ◆ Schmitt trigger input
- ◆ Power on reset
- ◆ Stagger output delay for EMI reduction
- ◆ -40°C to +85°C Ambient temperature range

Order information

PART	PACKAGE INFORMATION	
MY9163SA	SOP24-236mil-1.0mm	2000 pcs/Reel
MY9163SB	SOP24-300mil-1.27mm	1000 pcs/Reel
MY9163SS	SSOP24-150mil-0.635mm	2500 pcs/Reel
MY9163TE	TSSOP24-173mil-0.65mm (Exposed Pad)	2500 pcs/Reel
MY9163QF	QFN24-4mmx4mm-0.5mm	3000 pcs/Reel
MY9163QT	QFN24-4mmx4mm-0.5mm	3000 pcs/Reel

Package Configuration

