MY9931

3 Channels Constant Current LED Driver With Cascade DMX512 Protocol and Differential Interface

MY-Semi

General Description

The MY9931, 3 channels constant current LED driver with 14bits grayscale APDM (Adaptive Pulse Density Modulation) control, supports standard DMX512 protocol and fully differential interface suited for long distance cascade applications. The distinctive DMX512 decoding approach could decode precisely a standard DMX512 signal. The differential interface provides wide common-mode range to support long distance transmission without common-ground power systems.
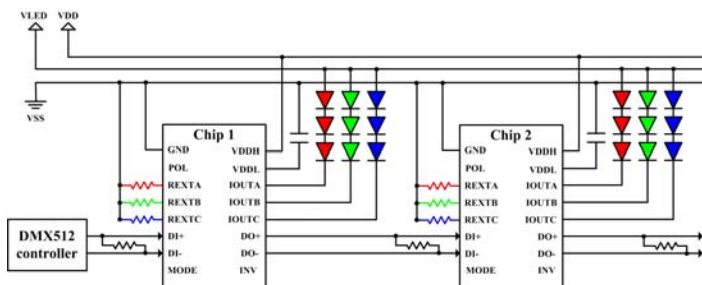
The device operates over 7V to 40V input voltage range and provides 3 open-drain constant current sinking outputs that are rated to 40V and delivers up to 60mA of high accuracy current to each string of LED. The current at each output is programmable by means of three external current setting resistors. The MY9931 provides the gamma correction, gamma value is 2.2, to transform 8bits DMX data to 14bits APDM data in order to enhance brightness contract. The 14bits adaptive pulse density modulation makes sure that the frame refresh rate is higher than 2KHz. And an accurate oscillator is built in for free running APDM grayscale control and DMX512 decoder.

The POL function makes MY9931 as a PWM generator to support driving high power LEDs. MY9931 is available in SOP16 packages and specified over the -40°C to +85°C ambient temperature range.
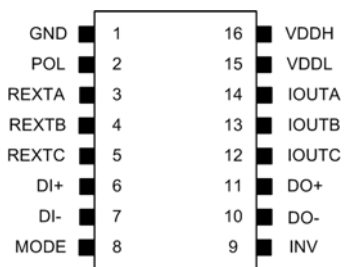
Features

✦ R.G.B applications
✦ 7V to 40V Operating supply voltage
✦ 60mA Maximum constant current output (Per channel)
✦ Current setting by 3 external resistors
✦ 40V Rated output channels for long LED strings
✦ ±1.5% (typ.) LED Current accuracy between channels
✦ ±3% (typ.) LED Current accuracy between chips
✦ Auto-addressing cascade architecture
✦ Standard DMX512 protocol decoder (USITT DMX512-A)
✦ Distinctive differential output corresponding with DMX512 format for long distance cascade
✦ Wide common-mode range for differential input signals
✦ Non-polarity connection for differential data input
✦ 14bits grayscale resolution with Adaptive Pulse Density Modulation
✦ Gamma, 2.2, to transform 8bits DMX to 14bits APDM data
✦ Frame refresh rate > 2000Hz as a LED driver
  Frame refresh rate > 120Hz as a PWM generator
✦ Traditional non-scramble constant current waveform for high power LED applications (PWM generator only)
✦ Built-in oscillator for grayscale control and DMX512 decoder
✦ -40°C to +85°C Ambient temperature range

Applications

❑ Standard DMX512 protocol system
❑ Full Color Mesh Display
❑ Architectural and Decorative Lighting

Order information

PART	PIN PACKAGE	
MY9931SD	SOP16-150mil-1.27mm	2500 pcs/Reel

Typical Operating Circuits

Pin Configuration

MY9931SD
SOP16-150mil-1.27mm