

**MY-Semi****Preliminary****MY9933**

3 Channels Constant Current LED Driver With Single-line Addressing DMX512 Protocol and Differential Interface

General Description

The MY9933, 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 parallel 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 MY9933 provides the gamma correction, gamma value is 2.2, to transform 8bits DMX data to 14bits APDM data in order to enhance brightness contrast. 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 MY9933 as a PWM generator to support driving high power LEDs. MY9933 is available in SOP14 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
- ◆ $\pm 1.5\%$ (typ.) LED Current accuracy between channels
- ◆ $\pm 3\%$ (typ.) LED Current accuracy between chips
- ◆ Standard DMX512 protocol decoder (USITT DMX512-A)
- ◆ Distinctive single-line addressing approach [Patent]
- ◆ Wide common-mode range for differential input signals
- ◆ Gamma, 2.2, to transform 8bits DMX to 14bits APDM data
- ◆ 14bits grayscale resolution with Adaptive Pulse Density Modulation
- ◆ 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

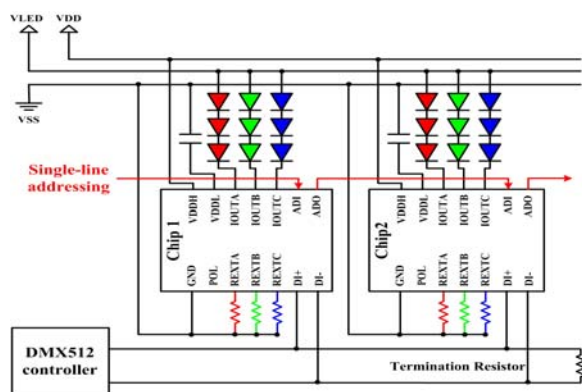
Applications

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

Order information

PART	PIN PACKAGE	
MY9933SC	SOP14-150mil-1.27mm	2500 pcs/Reel

Typical Operating Circuits



Pin Configuration

