



# 8-Channel All-Ways-On™ Constant Current LED Driver

## Features

- Maximum 70V sustaining voltage
- 8 constant current output channels
- Adjustable 15~80mA output current per channel through an external resistor
- Constant output current invariant to load voltage change
- Excellent output current accuracy:  
between channels: <math>\lt; \pm 3\% \text{ (max.)}</math>  
between chips: <math>\lt; \pm 6\% \text{ (max.)}</math>
- Integrated voltage regulator for 8~40V supply voltage
- Dimming control: 1:100@5KHz
- LED open-/short-circuit detection function and error flag ( $\overline{\text{ERR}}$ )
- Over voltage detection
- Thermal shutdown and thermal flag ( $\overline{\text{TH}}$ )
- Serial and parallel voltage feedback for DC/DC converter
- RoHS compliant packages with thermal pad



| Current Accuracy          |                           | Conditions                             |
|---------------------------|---------------------------|--|
| Between Channels          | Between ICs               |  |
| <math>\lt; \pm 3\%</math> | <math>\lt; \pm 6\%</math> | $I_{\text{OUT}} = 15 \sim 80\text{mA}$ |

## Product Description

MBI1838 is an instant On/Off LED driver for LED backlight applications and exploits PrecisionDrive™ technology to enhance its output characteristics. At MBI1838 output stage, 8 regulated current ports are designed to provide uniform and constant current sinks for driving LEDs within a large range of  $V_F$  variations, and in order to eliminate the heat generated by  $V_F$  variations, a feedback function is integrated in MBI1838 to control the LED power source.

MBI1838 provides 8-channel constant current ports to match LEDs with equal current. Users may adjust the output current from 15mA to 80mA through an external resistor,  $R_{ext}$ , which gives users flexibility in controlling the light intensity of LEDs. In addition, users can precisely adjust LED brightness from 0% to 100% via output enable pin (OE) with pulse width modulation signal.

MBI1838 can detect the error status of LED open-circuit, short-circuit, and the over temperature during the operation, and the pins,  $\overline{ERR}$  and  $\overline{TH}$  report these fault conditions. When LED open-circuit or short-circuit faults happen, only the faulted channel will be shut down to avoid affecting other normal channels. MBI1838 will disable all the output channels until the junction temperature is lower than the hysteresis, if the over temperature status occurs.

Additionally, to ensure the system reliability, MBI1838 is built with thermal pad which enhances the heat dissipation.

## Applications

- LCD TV