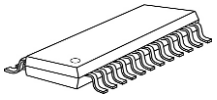
16-Channel SPWM Constant Current LED Driver with Lower Ghosting Elimination

Features

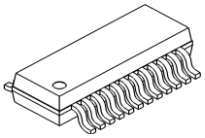
- 16 constant-current output channels
- 16-bit color depth PWM control
- Scrambled-PWM technology to improve refresh rate
- 6-bit programmable output current gain
- Constant output current range:
  1~ 45mA at 5.0V supply voltage
  1~30mA at 3.3V supply voltage
  1~30mA at 5V/3.3V supply voltage (GM package)
- Output current accuracy:
  Between channels: <±2.5% (max.), and
  Between ICs: <±3% (max.)
- Integrated lower ghosting effect elimination
- Staggered delay of output, preventing from current surge
- Maximum data clock frequency: 30MHz
- Maximum gray scale clock frequency: 33MHz
  Refresh rate doubled by innovative rising/falling edge trigger GCLK
- Schmitt trigger input
- 3.0V-5.5V supply voltage
- Package MSL Level : 3

Shrink SOP



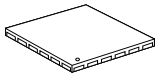
GP: SSOP24L-150-0.64

Thin Shrink SOP



GM: mSSOP24L-100-0.5

QFN



GFN: QFN24L-4x4-0.5

Product Description

MBI5043 is designed for LED video applications using internal Pulse Width Modulation (PWM) control with selectable 16-bit color depth which features a 16-bit shift register which converts serial input data into each pixel gray scale of output port. The output current can be preset through an external resistor. Moreover, the preset current of MBI5043 can be further programmed to 64 gain steps for LED global brightness adjustment.

With Scrambled-PWM (S-PWM) technology, MBI5043 enhances Pulse Width Modulation by scrambling the “on” time into several “on” periods. The enhancement equivalently increases the visual refresh rate. When building a 16-bit color depth video, S-PWM reduces the flickers and improves the fidelity. MBI5043 offloads the signal timing generation of the host controller which just needs to feed data into drivers. MBI5043 drives the corresponding LEDs to the brightness specified by image data. With MBI5043, all output channels can be built with 16-bit color depth (65,536 gray scales). Each LED’s brightness can be calibrated enough from minimum to maximum brightness with compensated gamma correction or LED deviation information inside the 16-bit image data. For time-multiplexing LED displays, MBI5043 featured pre-charge to eliminate the lower-ghosting effect induced by parasitic capacitance of the board.

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