

IS32FL3265A

18-LED DRIVER WITH PWM CONTROL

Preliminary Information
September 2019

GENERAL DESCRIPTION

IS32FL3265A is an LED driver with 18 high voltage (40V) constant current channels. Each channel can be pulse width modulated (PWM) by 8 bits for smooth LED brightness control. In addition, each channel has an 8-bit output current control register which allows fine tuning the current for rich RGB color mixing, e.g., a pure white color LED application. The maximum output current of each channel is designed to be 60mA, which can be adjusted by one 8-bit global control register. Proprietary algorithms are used in IS32FL3265A to minimize audible noise caused by the MLCC decoupling capacitor. All registers can be programmed via 1MHz I2C compatible interface.

IS32FL3265A can be turned off with minimum current consumption by either pulling the SDB pin low or by using the software shutdown feature.

IS32FL3265A is available in eTSSOP-28 packages. It operates from 2.7V to 5.5V over the temperature range of -40°C to +125°C.

APPLICATIONS

- Car display panel
- Ambient lighting
- Roof lighting
- Functional lighting

FEATURES

- 3V to 5.5V supply
- Output current capability and number of outputs: 60mA × 18 outputs, tolerance voltage 40V
- 1MHz IIC with automatic address increment
- Programmable H/L logic: 1.4V/0.4V, 2.4V/0.6V
- Accurate color rendition
 - 5-bit global current adjust
 - 8-bit dot correction
 - 8-bit PWM
- Selectable PWM method (200Hz or 25KHz)
- 256-Step group blinking with frequency programmable from 24Hz to 10.73 s and duty cycle from 0% to 99.6%
- Diagnostic and protection:
 - Thermal roll off programmable
 - Thermal shutdown
 - LED open detection
 - Fault report (open /thermal roll off /thermal shutdown)
- EMI Reduction Technology
 - Spread spectrum
 - Selectable 9 phase delay
- SDB rising edge reset I2C
- Operating temperature range, -40°C ~ +125°C
- Package: eTSSOP-28
- AEC-Q100 qualification in progress
- Current accuracy (All output on)
 - Bit to bit: < ±4%
 - Device to device: < ±6%

IS32FL3265A

TYPICAL APPLICATION CIRCUIT

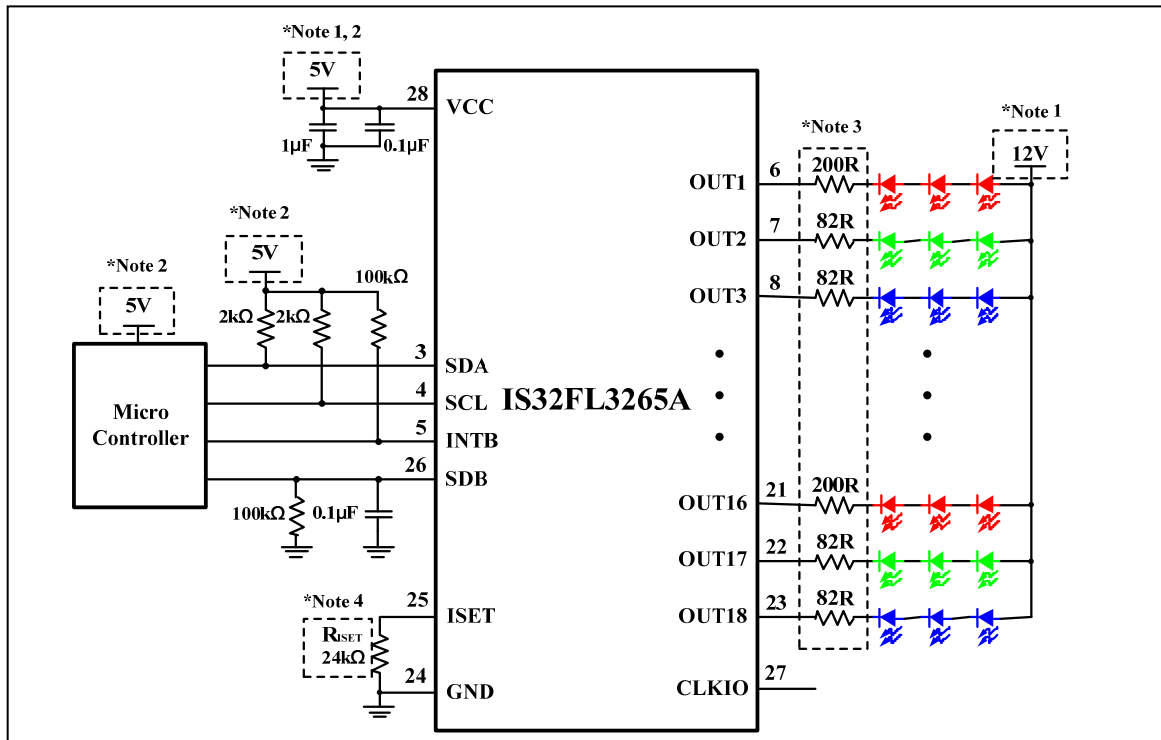


Figure 1 Typical Application Circuit

Note 1: VCC pin should be not higher than 5.5V, VLED+ can be higher than VCC.

Note 2: V_{IH} is the high level voltage for IS32FL3265A's SDA, SCL and INTB, which is usually same as VCC pin and VCC of Micro Controller, e.g. if VCC of Micro Controller is 3.3V, $V_{CC}(IS32FL3265A)=V_{IH}=3.3V$, if VCC of Micro Controller is 5V, $V_{CC}(IS32FL3265A)=V_{IH}=5V$, but $V_{CC}(IS32FL3265A)$ need to be not lower than 3V.

Note 3: These resistors are to help reduce the power of IS32FL3265A only, idea condition is to let OUTx pin voltage in about 0.5V~0.9V ($I_{OUT}=20mA$, higher than headroom voltage but not higher too much).

Note 4: The maximum global output current is set up to 60mA when $R_{ISET}=6.8k\Omega$. The maximum global output current can be set by external resistor, R_{ISET} . Please refer to the detail application information in R_{ISET} section.

Note 5: The IC should be placed far away from the antenna in order to prevent the EMI.

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TYPICAL APPLICATION CIRCUIT (CONTINUED)

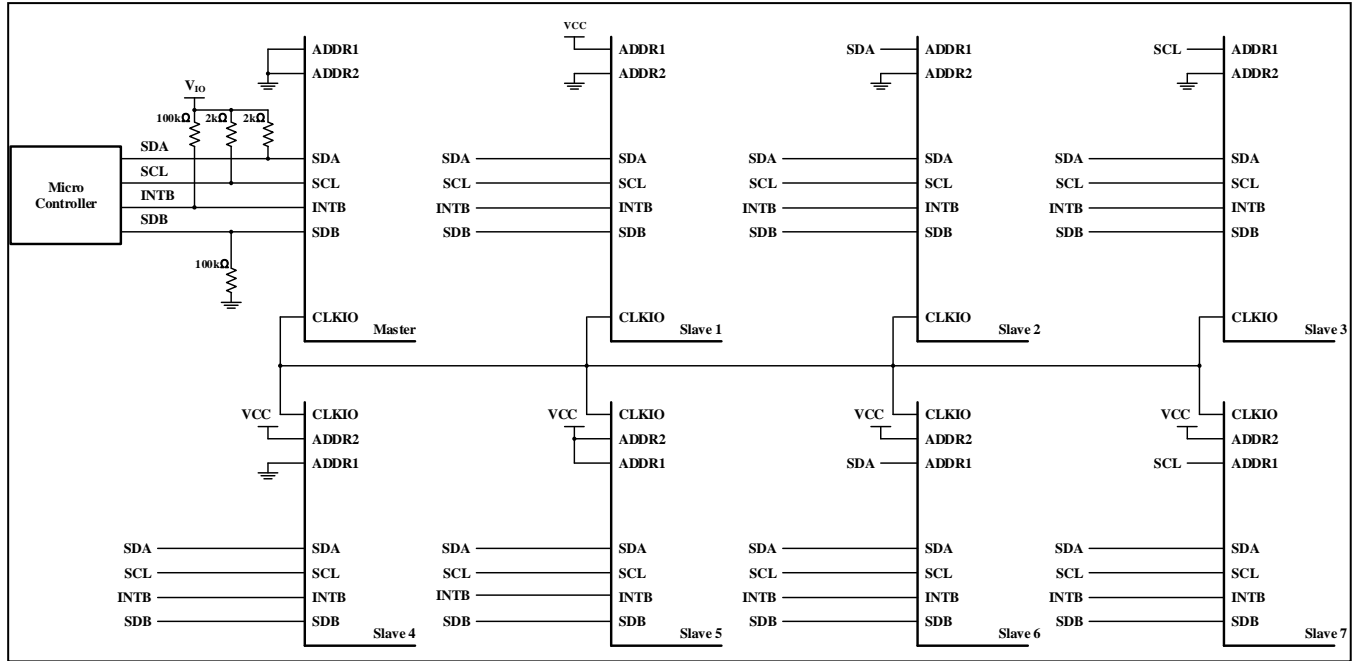


Figure 2 Typical Application Circuit (Eight Parts Synchronization-Work)

Note 6: One part is configured as master mode, all the other 7 parts configured as slave mode (slaves should be configured as slave before master set as master). Work as master mode or slave mode specified by Configuration Register. Master part output master clock, and all the other parts which work as slave input this master clock.