

# IS31FL3746A

## 24-RGB MATRIX LED DRIVER

Advance Information  
July 2018

### GENERAL DESCRIPTION

The IS31FL3746A is a general purpose  $18 \times n$  ( $n=1 \sim 4$ ) LED Matrix programmed via 1MHz I2C compatible interface. Each LED can be dimmed individually with 8-bit PWM data and 8-bit DC scaling (Color Calibration) data which allowing 256 steps of linear PWM dimming and 256 steps of DC current adjustable level.

Additionally each LED open and short state can be detected, IS31FL3746A store the open or short information in Open-Short Registers. The Open-Short Registers allowing MCU to read out via I2C compatible interface. Inform MCU whether there are LEDs open or short and the locations of open or short LEDs.

The IS31FL3746A operates from 2.7V to 5.5V and features a very low shutdown and operational current.

IS31FL3746A is available in QFN-32 (4mm×4mm) package. It operates from 2.7V to 5.5V over the temperature range of  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

### FEATURES

- Supply voltage range: 2.7V to 5.5V
- 18 current sinks
- Support  $18 \times n$  ( $n=1 \sim 4$ ) LED matrix configurations
- Individual 256 PWM control steps
- Individual 256 DC current steps
- Global 256 current steps
- SDB rising edge reset I2C module
- 24kHz PWM frequency
- 1MHz I2C-compatible interface
- State lookup registers
- Individual open and short error detect function
- De-Ghost
- QFN-32 (4mm×4mm) package

### APPLICATIONS

- Mobile phones and other hand-held devices for LED display
- Gaming device (Mouse, Mouse MAT etc.)
- IOT device (AI speaker etc.)

### TYPICAL APPLICATION CIRCUIT

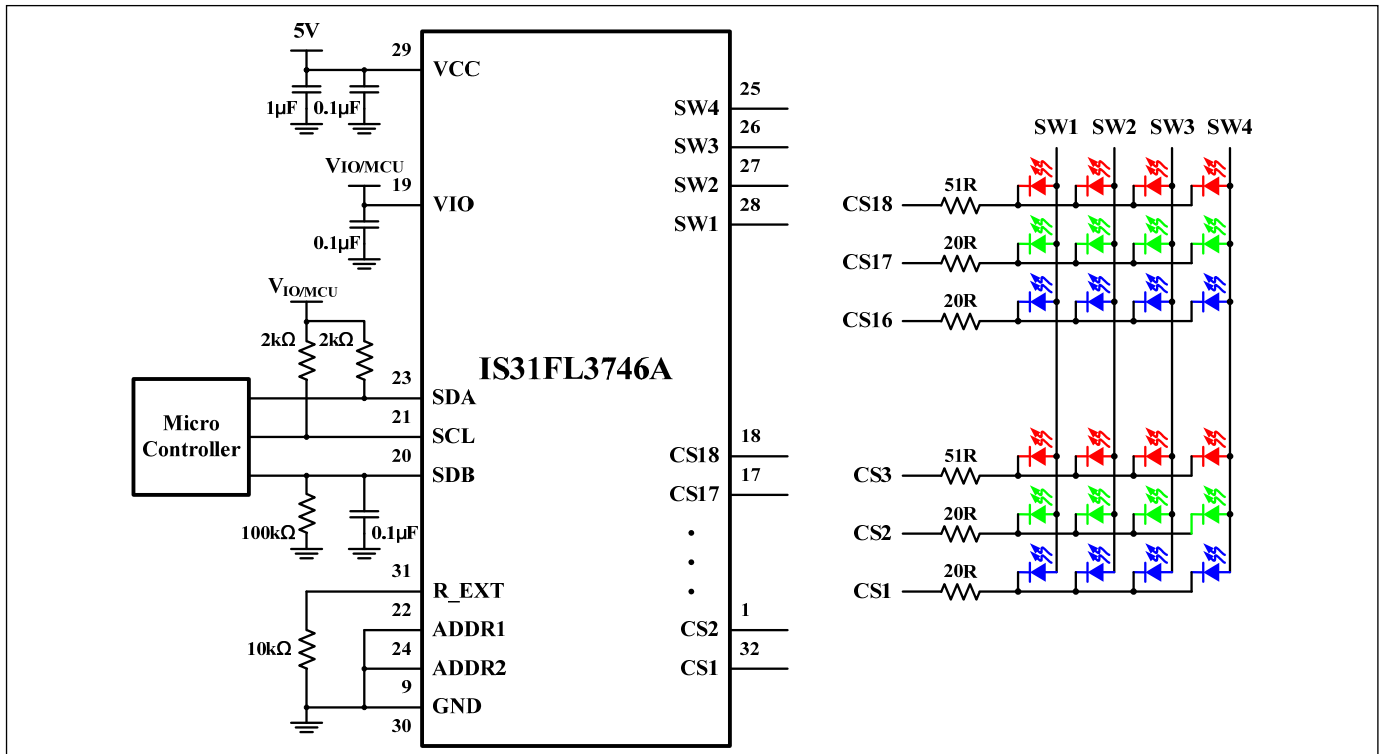
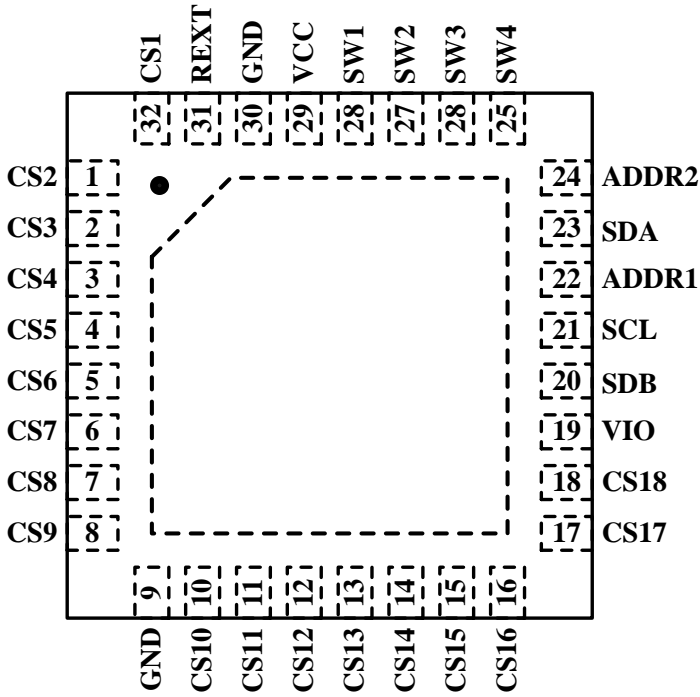


Figure 1 Typical Application Circuit:  $18 \times 4$ , 24 RGBs

# IS31FL3746A

## PIN CONFIGURATION

Package	Pin Configuration (Top View)
QFN-32	

## PIN DESCRIPTION

No.	Pin	Description
28~25	SW1~SW4	Power SW.
18~10,8~1,32	CS18~CS1	Current sink pin for LED matrix.
9,30	GND	Ground.
19	VIO	Input logic reference voltage, can't be floated.
20	SDB	Shutdown pin.
21	SCL	I2C compatible serial clock.
22	ADDR1	I2C address select.
23	SDA	I2C compatible serial data.
24	ADDR2	I2C address select.
29	VCC	Power for current source SW and analog.
31	R_EXT	Set the maximum IOUT current.
	Thermal Pad	Connect to GND.



# IS31FL3746A

## ORDERING INFORMATION

Industrial Range: -40°C to +125°C

Order Part No.	Package	QTY/Reel
IS31FL3746A-QFLS4-TR	QFN-32, Lead-free	2500

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