IT1503

PWM-Embedded 3x4-Channel Constant- Current Sink Driver for LED Strips

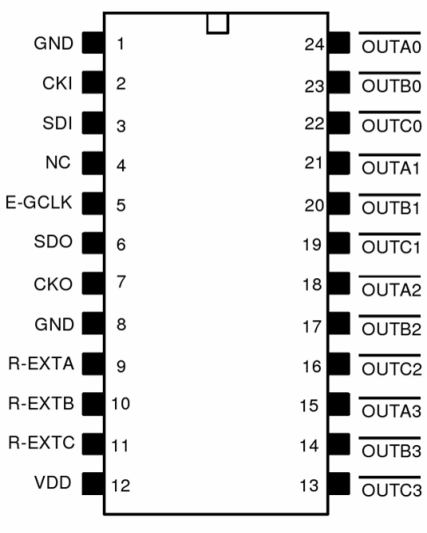
Features

- Constant current range: 3~45mA
- Supply voltage: 3V~5.5V
- Voltage at output channels: 17V (max.)
- 3 clusters of output current; each cluster's current is set by an external resistor
- Embedded 16-bit PWM generator
  - Grey scale clock can be generated by the internal oscillator or from the external clock
- Two optional modes for image quality and transmission bandwidth selection
  - 10-bit grey scale mode (with optional 6-bit dot correction)
  - 16-bit grey scale mode (with optional 8-bit dot correction)
- Flexible PWM reset modes
  - Auto- synchronization mode
  - Manual-compliant mode
- Reliable data transmission interface
  - Daisy-chain flow
  - Built-in buffer for long distance driving
  - Two-wire signals for interface
  - Output clock phase inversed
- Error detection control
  - Compulsory individual LED open/short-circuit detection:
    full panel, data independent
    silent error detection in 700ns
  - Configurable short-circuit detection threshold voltage
- RoHS-compliant packages

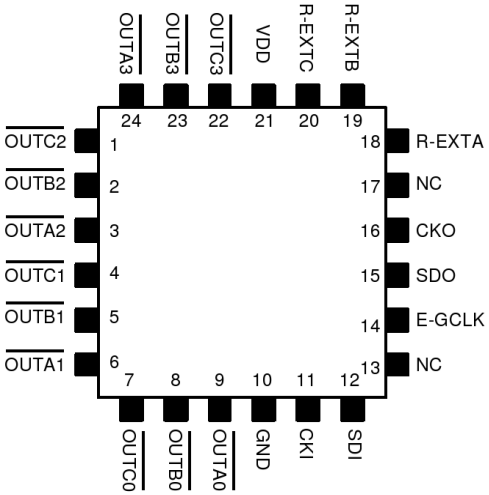
Application

- Mesh LED display
- LED strips
- Architectural LED lighting

Pin Configurations



IT1503SP



IT1503QF

Terminal Description

Pin		Pin Name	Description
SP	QF		
1	10	GND	Ground pin
2	11	CKI	Input pin for clock input
3	12	SDI	Input pin for serial data input
4	13	NC	No connection
5	14	E-GCLK	Input pin for external grey scale clock; Internal pulled-down; keep unconnected when using built-in oscillator.
6	15	SDO	Output pin for serial data output
7	16	CKO	Output pin for clock output
8	17	GND	Ground pin
9,10,11	18,19,20	R-EXT A,B,C	Terminals for setting output current by connecting an external resistor
12	21	VDD	3.3V/5V supply pin
13,14,15	22,23,24	$\overline{OUTC3, B3, A3}$	Constant-current output terminals
16,17,18	1,2,3	$\overline{OUTC2, B2, A2}$	Constant-current output terminals
19,20,21	4,5,6	$\overline{OUTC1, B1, A1}$	Constant-current output terminals
22,23,24	7,8,9	$\overline{OUTC0, B0, A0}$	Constant-current output terminals

*The desired thermal conductivity will be improved on condition that a heat-conducting copper foil on PCB is soldered with thermal pad for QFN package.