CHIPONE

集创北方

ICN2053

(16-Channel PWM Constant Current LED Sink Driver)

Description

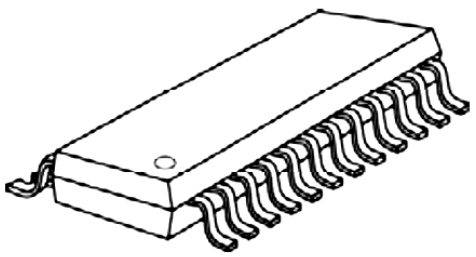
The ICN2053 is a 16-channel PWM constant current sink LED driver for 1:32 time multiplexing applications. The constant-current value of all 16 channels is set by a single external resistor.

ICN2053 converts serial input date into the gray scale of each pixel by a 16-bit shift register.ICN2053 detects individual LED open errors without extra components. ICN2053 also integrated pre-charge circuit for ghosting reduction.

The ICN2053 exploits precise current regulation technology, with both channel-to-channel error and chip-to-chip error less than ±2.0%.

Package

Shrink SOP



SSOP 24-150-0.635

ICN2053

Features

- 16 constant-current output channels
- Support time-multiplexing for 1~32 scans
- Output current setting range：
  0.5~25mA×16@V_{DD}=5V constant current output
  0.5~18mA×16@V_{DD}=4.2V constant current output
  0.5~10mA×16@V_{DD}=3.3V constant current output
- Current accuracy
  Between channel :< ±2.0 %(Max.)
  Between ICs :< ±2.0 % (Max.)
- 8 bit current gain：12.5%~200%
- Fast response of output current:
  $\overline{OE}$ (min):20ns@V_{DD}=5V
- Data transfer frequency: f_{MAX}=35MHz(Max)
- Power supply voltage: V_{DD}=3.3～5V
- Operating Temperature: –40°C to +85°C
- Output current equation

$$Iout = \frac{9.23}{R_{EXT}}$$

- Pre-charge for ghosting reduction
- LED open detection
- Enhanced Circuit for Caterpillar Cancelling
- Low-gray scale enhancement
- Integrating LED protection circuit