

60V/20mA Single Channel Constant Current LED Driver

General Description

PS4501 is a single channel LED driver with constant current regulator. PS4501 offers excellent temperature stability and output current accuracy ($\pm 3.5\%$) with wide input voltage from 4.5V to 40V and temperature range. PS4501 implements various fixed output current versions without external current setting resistors and thus creates a simple solution for constant current LED driver. Besides, for the thermal management in LED, PS4501 is featured a current ramp down function from 125°C to 145°C of junction temperature. Moreover, taking reliability into consideration, the maximum voltage rating on VDD, VP and VN is designed as 60V ability to handle high voltage pulse suddenly. Thoughtfully, PS4501 also supports both high-side and low-side driving for the LED strings. PS4501 is bare die and die size is 426um x 745um, which is available for COB (chip on board) LED lighting application, etc.

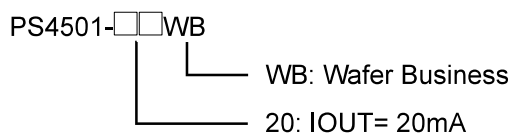
Features

- 20mA constant current LED regulator
- Wide input voltage range from 4.5V to 40V
- 60V breakdown voltage
- $\pm 3.5\%$ LED current accuracy
- Thermal protection: Current ramp down at **125°C**

Applications

- Constant current LED (CCLED)
- Constant current COB light engine

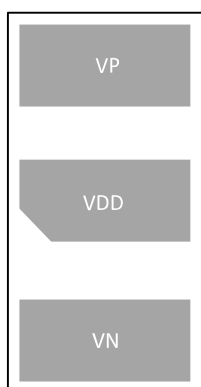
Ordering Information



Note: Green Product (RoHS compliant)
For meeting the world-wide customer requirements for environmentally friendly products and government regulations, the device is available as a green product. Green products are RoHS-Compliant (i.e. Pb-free finish on leads and suitable for Pb-free soldering according to IPC/JEDEC J-STD-020)

Wafer and Dice Information

(Top View)



- Wafer thickness: 29mil / 6 inches
- Die size: 426um x 745um
- Scribe line: 80um
- Substrate: P-Sub
- Substrate potential: Same as VN pin or floating
- Main material of solder/bond pad: Ag
- Pad structure: Circuit under pad

Pin Definitions and Functions

Pin	Name	I/O ⁽¹⁾	Description
1	VP	I	Output current regulated pin. Output current flows through this pin and regulated.
2	VDD	I	Supply voltage.
3	VN	--	Chip ground.

(1) I= Input, O= Output, --= Other

Functional Block Diagram

