

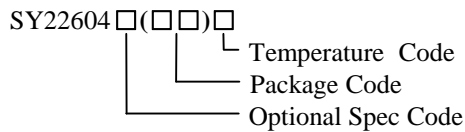
General Description

The SY22604 is an adaptive linear current regulator to eliminate low frequency current ripple targeting at LED lighting applications.

It is applied as a current filter to the output of a LED driver, especially single stage LED driver. It adopts adaptive control scheme and no additional electrical design is needed.

Reliable open/short LED protection and over thermal protection are all provided.

Ordering Information



Ordering Number	Package type	Note
SY22604KAC	TO220-3	----

Features

- Current Filter for Single Stage LED Driver to Eliminate Current Ripple
- Proprietary Scheme for Low Power Loss $\leq 2.5\%$
- Adaptive for Wide Output Speculation:
Output Voltage Range from 20V to 60V
Output Current Range from 0.5A to 1.5A
- Open LED Protection and Short LED Protection
- Reliable Short LED and Open LED Protection
- RoHS Compliant and Halogen Free
- Compact Package: TO220-3

Applications

- LED Lighting

Typical Applications

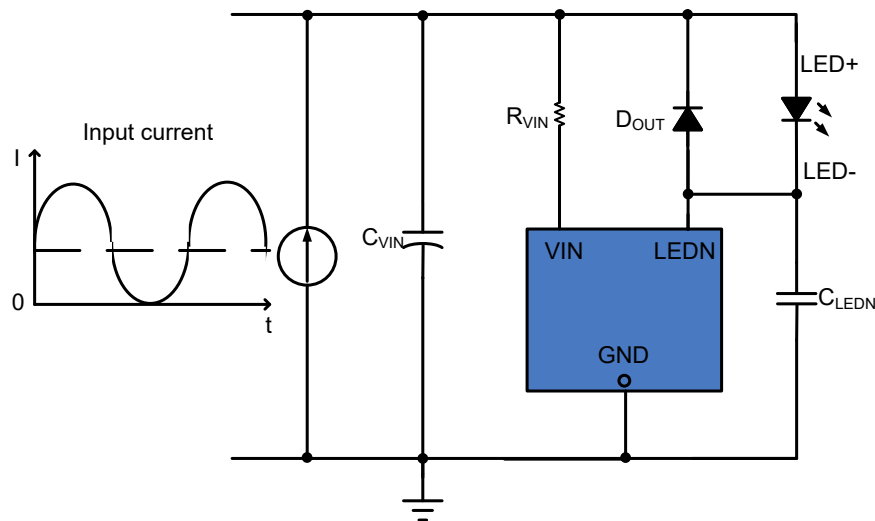
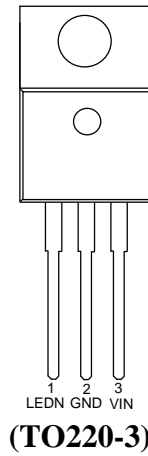


Figure 1. Schematic Diagram

Pinout (top view)



Top Mark: AZGxyz (device code: AZG, x=year code, y=week code, z= lot number code)

Pin Name	Pin Description
LEDN	Cathode of LED string.
VIN	Power Supply
GND	Ground pin

Block Diagram

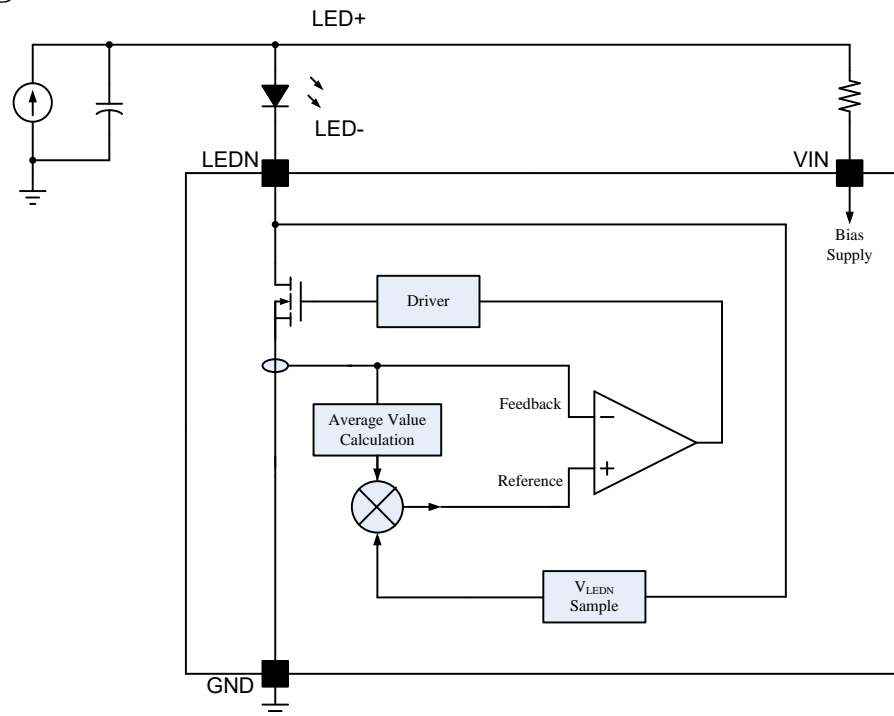


Fig. 2. Block diagram

Absolute Maximum Ratings (Note 1)

VIN -----	-0.3V~60V
LEDN -----	-0.3~60V
Power Dissipation, @ TA= 25°C TO220-3-----	5W
Package Thermal Resistance (Note 2)	
TO220-3, θ_{JA} -----	62.5°C/W
TO220-3, θ_{JC} (Note 3)-----	1°C/W
Junction Temperature Range -----	-40°C to 150°C
Lead Temperature (Soldering, 10 sec.) -----	260°C
Storage Temperature Range -----	-65°C to 150°C

Recommended Operating Conditions

VIN, LEDN -----	20V~60V
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Electrical Characteristics

($V_{IN} = 12V$, $T_A = 25^\circ C$ unless otherwise specified)

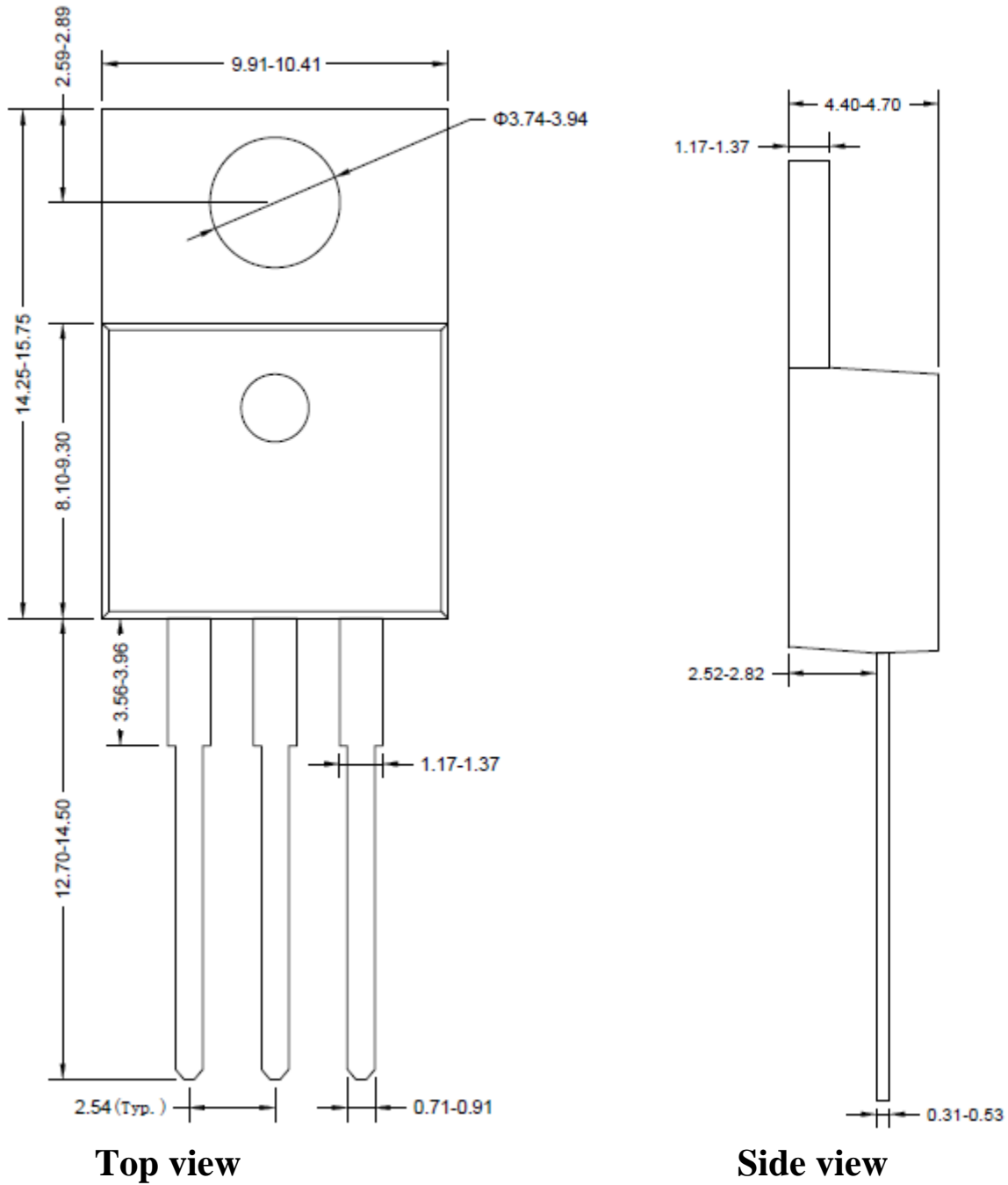
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Power Supply Section						
VIN turn-on threshold	V_{VIN_ON}		2.9	3.4	4.1	V
VIN turn-off threshold	V_{VIN_OFF}		2.7	3.2	3.9	V
VIN operating current	I_{VIN}		70	91	120	μA
LEDN section						
High Voltage Protection	V_{LEDN_HV}		4.3	4.85	5.3	V
Over Voltage Protection	V_{LEDN_OV}		12.3	14	15.7	V
Thermal Section						
Thermal Shutdown Temperature	T_{SD1}	$V_{LEDN} < V_{LEDN_OV}$		150		$^\circ C$
Thermal Shutdown Temperature	T_{SD2}	$V_{LEDN} > V_{LEDN_OV}$		100		$^\circ C$
Thermal Hysteresis	T_{HYS}			20		$^\circ C$

Note 1: Stresses beyond the “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Note 2: Θ_{JA} is measured according to JESD 51-2 and JESD51-7.

Note 3: Case refers the bottom of the chip, which would be connected to heatsink.

TO220-3 Package Outline



Notes: All dimension in millimeter and exclude mold flash & metal burr

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