

# DIO8221

## Controller for Adaptive 100/120Hz Current Ripple Removing Circuit

## Features

- Controller for adaptive 100/120Hz current ripple remover
- Built-in zener diode for input voltage clamping
- VG output voltage high to 10V
- Programmable amplitude of LED current ripple
- Programmable maximum cathode voltage of LED
- Programmable maximum LED current
- Short protection
- Over temperature protection
- SOT23-6 Package

## Applications

- **LED lighting**

## Descriptions

**DIO8221 is a controller for driving external NMOSFET to remove the 100/120Hz LED current ripple on AC/DC power by a capacitor between VC and GND.**

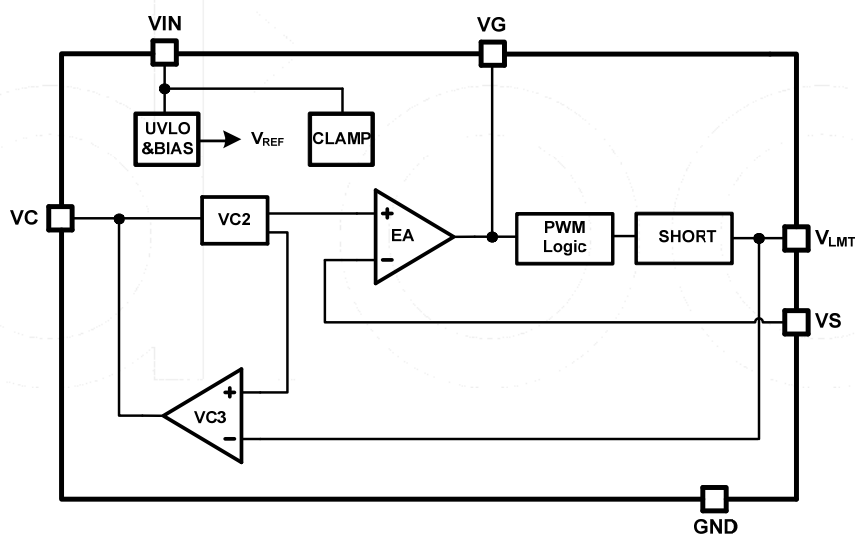
The adaptive technology of DIO8221 ensures minimum power dissipation on NMOSFET while removing LED current ripple.

**DIO8221 clamps the input voltage on VIN pin by 37V. DIO8221 allows user to setup maximum LED current, which keeps NMOSFET damaged when LED short or hot-plug.**

By sensing the drain voltage of NMOSFET via a resistor between the drain and  $V_{LMT}$  pin, DIO8221 allows user to setup the maximum cathode voltage of LED string, which could help limit the power dissipation on chip.

**DIO8221 provides two kinds of protection function: it shuts down NMOSFET when LED is shorted and recovers after 40ms. And it provides over thermal protection.**

## Block Diagram



## Ordering Information

Order Part Number	Top Marking		T <sub>A</sub>	Package	
DIO8221CST6	YW21	Green	-40 to +150°C	SOT23-6	Tape & Reel, 3000

## Pin Assignments

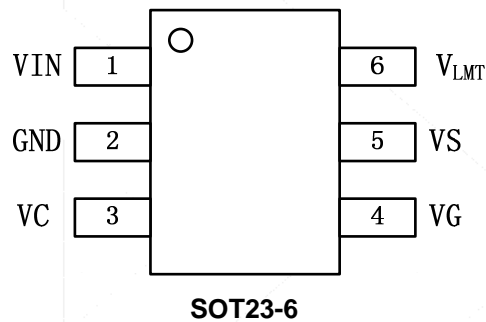
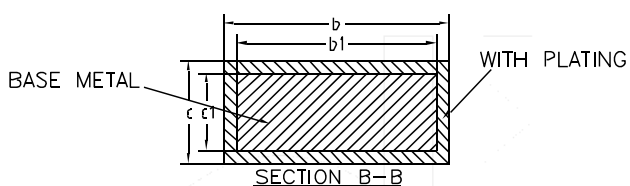
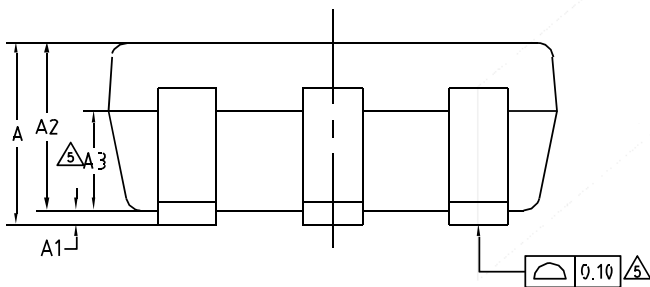
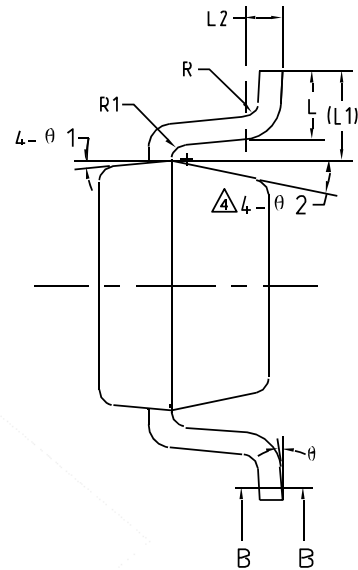
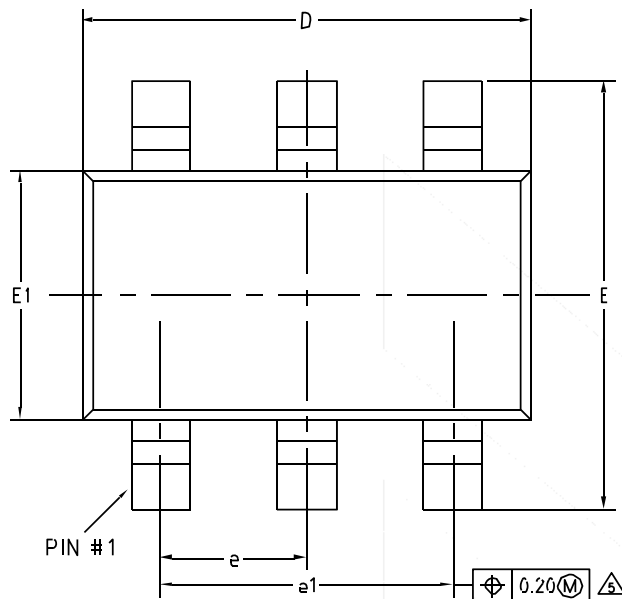


Figure 1 Pin Assignment (Top View)

## Pin Definitions

Pin Name	Description
VIN	Power Supply
GND	Power Ground
VC	LED Current Ripple Programming
VG	NMOSFET GATE driving voltage output
VS	LED Current sensing input
V <sub>LMT</sub>	LED Voltage limit and short protection Programming

**Physical Dimensions: SOT23-6**


COMMON DIMENSIONS (UNITS OF MEASURE=MILLIMETER)			
Symbol	MIN	NOM	MAX
A	-	-	1.25
A1	0	-	0.15
A2	1.00	1.10	1.20
A3	0.60	0.65	0.70
b	0.36	-	0.50
b1	0.36	0.38	0.45
c	0.14	-	0.20
c1	0.14	0.15	0.16
D	2.826	2.926	3.026
E	2.60	2.80	3.00
E1	1.526	1.626	1.726
e	0.90	0.95	1.00
e1	1.80	1.90	2.00
L	0.35	0.45	0.60
L1	0.59REF		
L2	0.25BSC		
R	0.10	-	-
R1	0.10	-	0.20
θ	0°	-	8°
θ1	3°	5°	7°
θ2	6°	-	14°



DIO8221

Controller for Adaptive 100/120Hz, Current Ripple Removing Circuit

## CONTACT US

Dioo is a professional design and sales corporation for high-quality and performance analog semiconductors. The company focuses on industry markets, such as, cell phone, handheld products, laptop, and medical equipment and so on. Dioo's product families include analog signal processing and amplifying, LED drivers and charger IC. Go to <http://www.dioo.com> for a complete list of Dioo product families.

For additional product information, or full datasheet, please contact with our Sales Department or Representatives.

