

DIO8800E

Single Stage Buck PFC Regulator for LED Lighting

Features

- Internal 600V Power MOSFET
- Valley turn-on of the MOSFET to achieve low switching losses
- 0.3V current sense reference voltage leads to a lower sense resistance thus a lower conduction loss
- Low start up current: 15 μ A typical
- Reliable short LED and Open LED protection
- Power factor >0.9
- Compact package: SOIC-8

Descriptions

The DIO8800E consists of an integrated single stage Buck & PFC Regulator and 600V power MOSFET, specifically designed for a high performance non-isolated converter with minimal external components targeting at LED lighting applications.

The DIO8800E drives the Buck converter in the quasi-resonant mode to achieve higher efficiency and keeps the Buck converter inconstant on time operation to achieve high power factor.

Applications

- Tube lamp & PAR lamp
- Down light & Bulb lamp

This chip adopts special design to achieve reliable protection for safety requirement.

Block Diagram

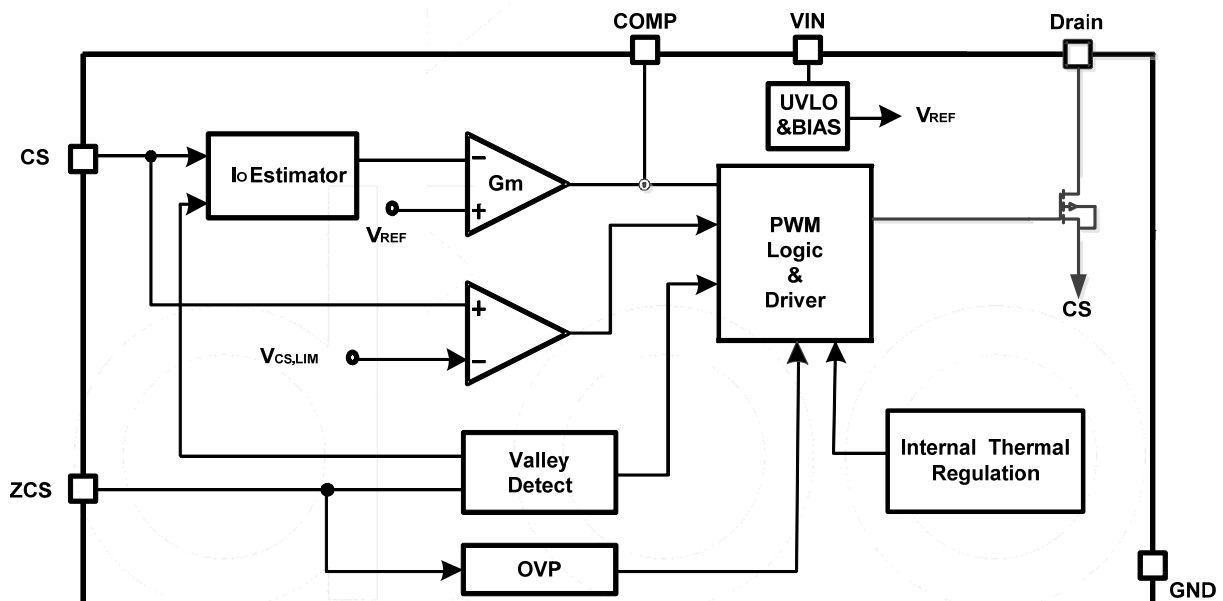


Figure1 Block Diagram

Ordering Information

Order Part Number	Top Marking		T _A	Package	
DIO8800ECS8	DIO8800E	Green	-40 to +85°C	SOIC-8	Tape & Reel, 2500

Pin Assignments

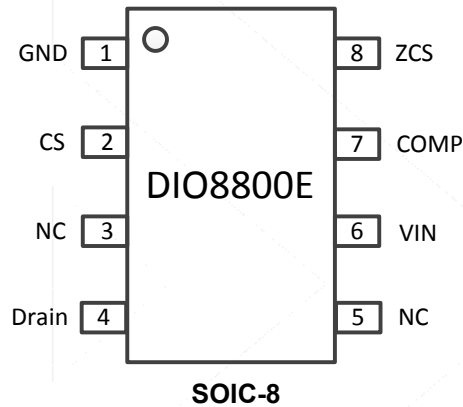


Figure 2 Pin Assignment (Top View)

Pin Definitions

Pin Name	Description
CS	Current sense pin. Connect this pin to the source of the primary switch. Connect the sense resistor across the source of the primary switch and the GND pin. (current sense resistor Resistor: $R_S = \frac{1}{2} \times \frac{V_{ref}}{I_{out}}$) Also this pin used to detect transformer and secondary is short or not.
GND	Ground pin
COMP	Loop compensation pin. Connect a RC network across this pin and ground to stabilize the control loop.
ZCS	Inductor current zero-crossing detection pin. This pin receives the auxiliary winding voltage by a resistor divider and detects the inductor current zero crossing point. This pin also provides over voltage protection and line regulation modification function simultaneously. If the voltage on this pin is above $V_{ZCS,OV}$, the IC would enter overvoltage protection mode. Good line regulation can be achieved by adjusting the upper resistor of the divider.
VIN	Power supply pin. This pin also provides output over voltage protection along with ZCS pin.
Drain	Power MOSFET Drain Pin. The Drain pin is connected to the primary lead of the transformer.
NC	Not Connect.

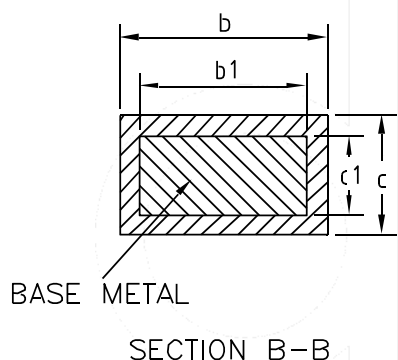
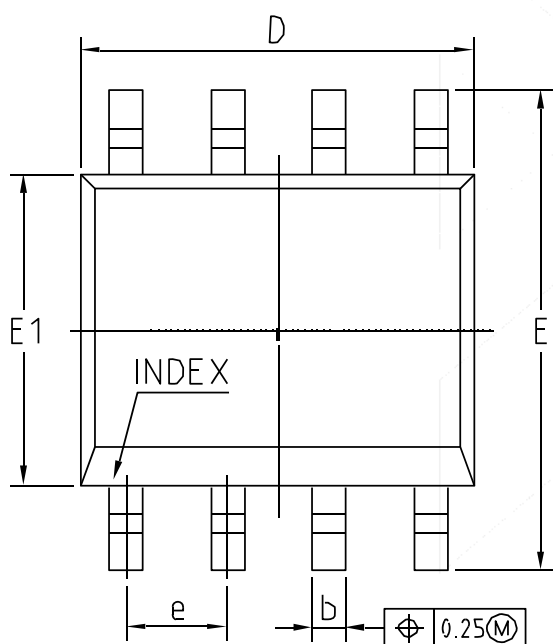
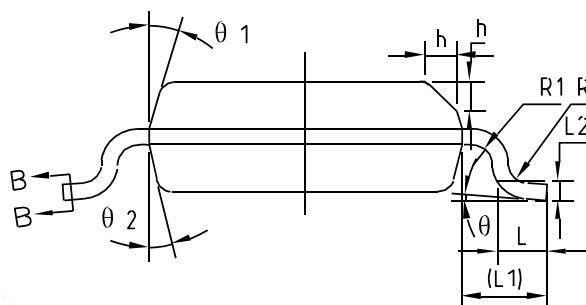
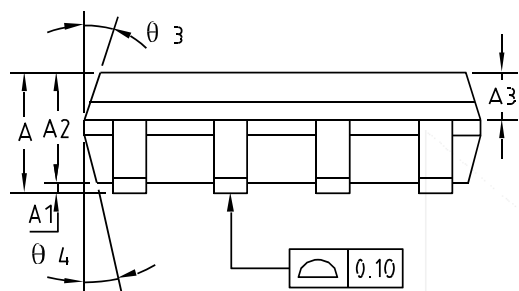


DIO8800E

Single Stage Buck PFC Regulator For LED Lighting



Physical Dimensions: SOIC-8



COMMON DIMENSIONS (UNITS OF MEASURE=MILLIMETER)			
Symbol	MIN	NOM	MAX
A	1.35	1.55	1.75
A1	0.10	0.15	0.25
A2	1.25	1.40	1.65
A3	0.50	0.60	0.70
b	0.38	-	0.51
b1	0.37	0.42	0.47
c	0.17	-	0.25
c1	0.17	0.20	0.23
D	4.80	4.90	5.00
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27BSC		
L	0.40	0.60	0.80
L1	1.04REF		
L2	0.25BSC		
R	0.07	-	-
R1	0.07	-	-
h	0.30	0.40	0.50
θ	0°	-	8°
θ1	15°	17°	19°
θ2	11°	13°	15°
θ3	15°	17°	19°
θ4	11°	13°	15°



DIO8800E

Single Stage Buck PFC Regulator For LED Lighting

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.



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

DIOO:

DIO8800ECS8