



High Precision Non-isolated dimmable LED Driver

GENERAL DESCRIPTION

OB3605Ax is a high current precision, non-isolated power switch for LED lighting. It works under transition mode.

It significantly simplifies the LED lighting system design by eliminating the auxiliary winding inductance and works under low current. A 500V power switch is also integrated into the device. The LED current can be adjusted externally by the sense resistor Rcs at CS pin and high precision constant current regulation is realized. It integrates an external dimming pin which inputs PWM signal and can dim by changing the duty cycle of the PWM signal.

OB3605Ax offers comprehensive protection coverage with auto-recovery features including LED string open protection, LED string short circuit protection, cycle-by-cycle current limiting, built-in leading edge blanking, VDD under voltage lockout (UVLO), Thermal foldback, etc.

OB3605Ax is offered in DIP7 /SOP7package.

FEATURES

- External PWM dimming
- High precision Constant Current Regulation at Universal AC input
- Sense and supply without auxiliary winding inductance
- Low System Cost and High Efficiency
- Low operation current
- Programmable CC Regulation
- Transition Mode operation
- Built-in Primary winding inductance compensation
- Programmable LED string open circuit protection
- LED string short circuit protection
- Cycle-by-Cycle Current Limiting
- Built-in Leading Edge Blanking (LEB)
- VDD Under Voltage Lockout with Hysteresis
- Thermal foldback

APPLICATIONS

■ LED lighting

TYPICAL APPLICATION



GENERAL INFORMATION

Pin Configuration

DIP7 **GND** DRAIN DRAIN VDD 2 6 DIM CS OVP 5 SOP7 **VDD GND** DIM 2

Ordering Information

OVP

CS

Part Number	Description
OB3605ARASP-J	7 Pin DIP, Halogen-free in Tube
OB3605APJP-J	7 Pin SOP, Halogen-free in Tube
OB3605APJPA-J	7 Pin SOP, Halogen-free in T&R
Note: All Devices are	offered in Halogen-free Package if not

DRAIN

DRAIN

otherwise noted.

Package Dissipation Rating

Package	RθJA (℃/W)
DIP7	75
SOP7	95

Absolute Maximum Ratings

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Parameter	Value	
VDD Voltage	-0.3 to 15V	
DRAIN Voltage	-0.3 to 500V	
CS Input Voltage	-0.3 to 7V	
DIM Input Voltage	-0.3 to 7V	
OVP Input Voltage	-0.3 to 7V	
Min/Max Operating Junction	-40 to 155 ℃	
Temperature T _J	-40 to 155 C	
Operating Ambient	-40 to 85 ℃	
Temperature T _A	-40 to 65 C	
Min/Max Storage	-55 to 155 ℃	
Temperature T _{stq}	-33 10 135 C	
Lead Temperature	260 %	
(Soldering, 10secs)	260 ℃	

Note: Stresses beyond those listed under "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 under "recommended operating conditions" is not implied. Exposure to absolute maximum-rated conditions for extended periods may affect device reliability.

Recommended Operating Condition

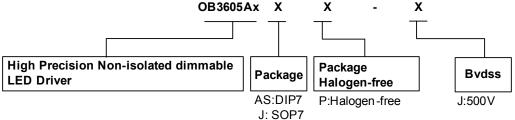
Symbol	Parameter	Range
VDD	VDD Supply Voltage	8 to 13V
F _{PWM}	PWM frequency	1KHz to 50KHz

Output Power Table

Product		175Vac~264Vac ±20% Input
OB3605ARASP-J	28W (I _{LED} <350mA)	51.8W (I _{LED} <300mA)
OB3605APJP-J	14W(I _{LED} <300mA)	30W (I _{LED} <250mA)

Note: Maximum practical continuous power in an open frame design with sufficient drain pattern as a heat sink, at 50 $\!\!\!^{\circ}\!\!\!^{\circ}\!\!\!^{\circ}$ ambient and 60°C temperature rise. Higher output power is possible with extra added heat sink, air circulation and decrease output current to reduce thermal resistance.

Marking Information







Y: Year Code

WW: Week Code (01-52)

ZZZ:Lot Code

AS: DIP7

P:Halogen-free Package

A:Character code

s: Internal Code(Optional)



Y: Year Code

WW: Week Code (01-52)

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Terminal Assignments

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Pin Num	Pin Name	I/O	Description
1	GND	Р	Ground
2	VDD	Р	Power supply Input
3	DIM	- 1	Dimming control Input
4	OVP	Ю	Over voltage Protection configuration terminal
5	CS	- 1	Current Sensing terminal
6,7	DRAIN	Ю	MOSFET Drain Terminal

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1	VDD	Р	Power supply Input
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3	OVP	Ю	Over voltage Protection configuration terminal
4	CS	I	Current sensing terminal
5,6	DRAIN	Ю	MOSFET Drain Terminal
7	GND	Р	Ground

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