GENERAL DESCRIPTION

OB5628A is a high current precision, non-isolated power switch with HV startup for LED lighting application. It works under transition mode.

It simplifies the LED lighting system design by eliminating the auxiliary winding inductance and HV startup resistor. A 500V power switch is integrated in OB5628A. LED current can be adjusted by the external sense resistor connected between CS pin and ground.

OB5628A offers comprehensive protection coverage with auto-recovery features including cycle-by-cycle current limiting, built-in leading edge blanking, over temperature protection (OTP), etc.

OB5628A is offered in SOP7/SOT23-5/SOT33-4 package.

FEATURES

- HV startup
- Sense and supply without auxiliary winding inductance
- Low System Cost and High Efficiency
- Low operation current
- Transition mode operation
- Cycle-by-Cycle Current Limiting
- Built-in Leading Edge Blanking (LEB)
- Over temperature protection (OTP)

APPLICATIONS

- LED lighting

TYPICALICAL APPLICATION

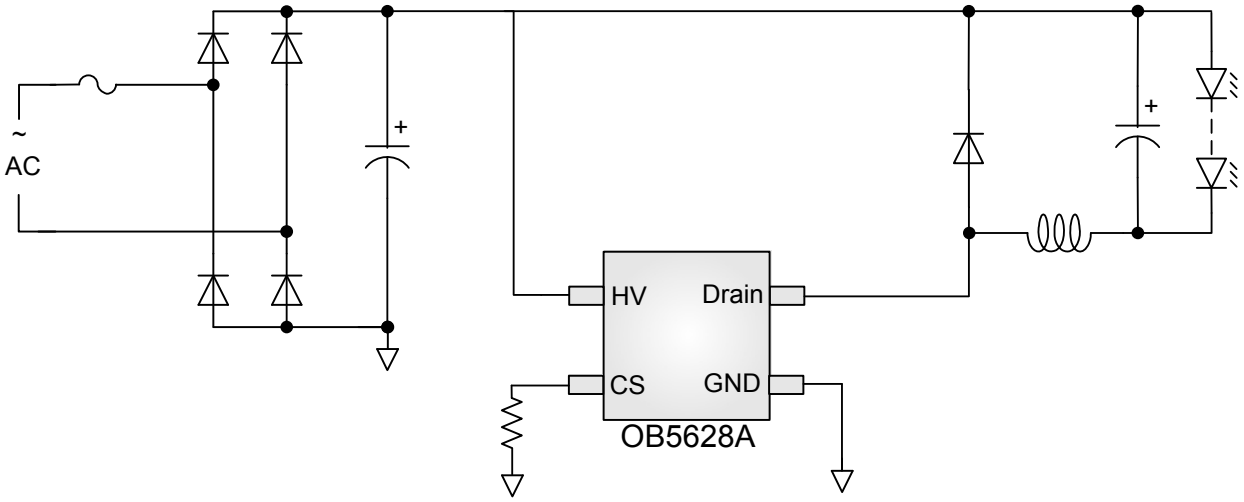
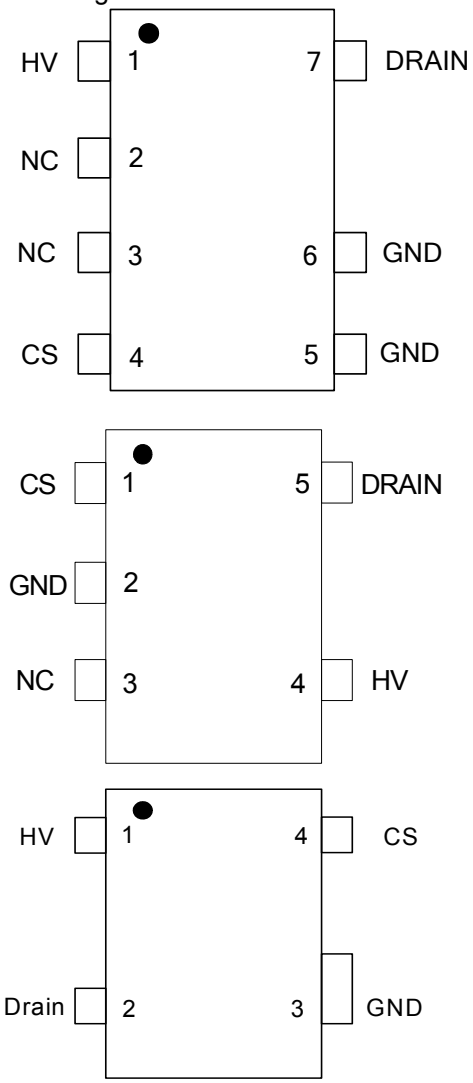


Figure1: OB5628A Typical Application Schematic

GENERAL INFORMATION

Terminal Assignment

Pin Configuration



Ordering Information

Part Number	Description
OB5628AJP	SOP7, Halogen-free in Tube
OB5628AJPA	SOP7, Halogen-free in T&R
OB5628AMP	SOT23-5,Halogen-free in T&R
OB5628AMHP	SOT33-4 ， Halogen-free in T&R

Package Thermal Characteristics

Package	RθJA (℃/W)
SOP7	110
SOT23-5	200
SOT33-4	166

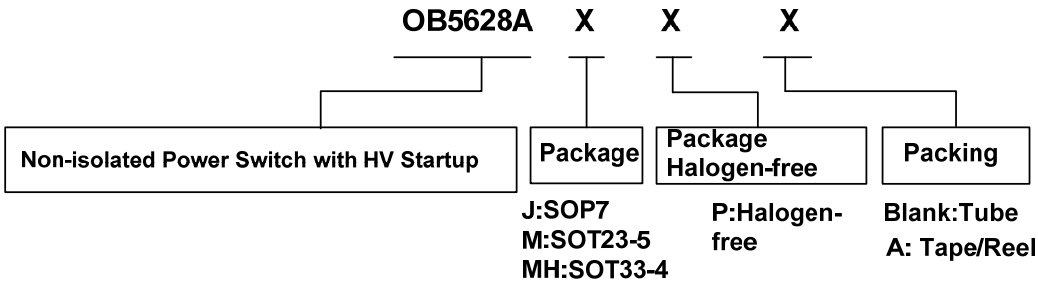
Absolute Maximum Ratings

Parameter	Value
DRAIN/HV Pin to GND	-0.3V to 550V
CS pin to GND	-0.3V to 8V
Operating Ambient Temp. T_A	-40℃--85℃
Operating Junction Temp. T_J	-40℃--150℃
Min/Max Storage Temp. T_{stg}	-55℃--150℃
Lead Temp. (10 Sec)	260℃

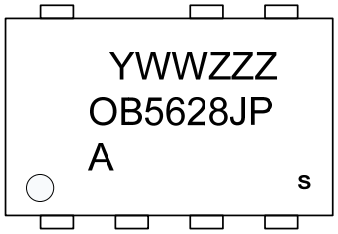
Note: Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute maximum-rated conditions for extended periods may affect device reliability.

Output Power Table

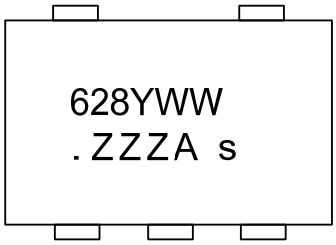
Product	Condition	175Vac~264Vac Input
OB5628AJP	Io≤140mA	Po≤16W
OB5628AMP	Io≤110mA	Po≤14W
OB5628AMHP	Io≤110mA	Po≤12.3W



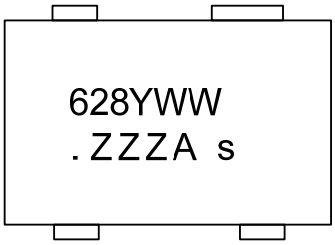
Marking Information



Y:Year Code
WW:Week Code(01-52)
ZZZ:Lot Code
J:SOP7 Package
P:Halogen-free Package
A:Character code
S:Internal Code(Optional)



Y:Year Code
WW:Week Code(01-52)
ZZZ: Lot code
A:Character code
s: Internal code



Y:Year Code
WW:Week Code(01-52)
ZZZ: Lot code
A:Character code
s: Internal code

Terminal Assignment for OB5628AJP

No.	Name	I/O	Pin Function
1	HV	I	High voltage power supply input
2	NC		No connection
3	NC		No connection, need to be floating in PCB layout.
4	CS	I	Current sense pin
5	GND	P	Ground
6	GND	P	Ground
7	DRAIN	I	Drain of internal MOSFET

Terminal Assignment for OB5628AMP

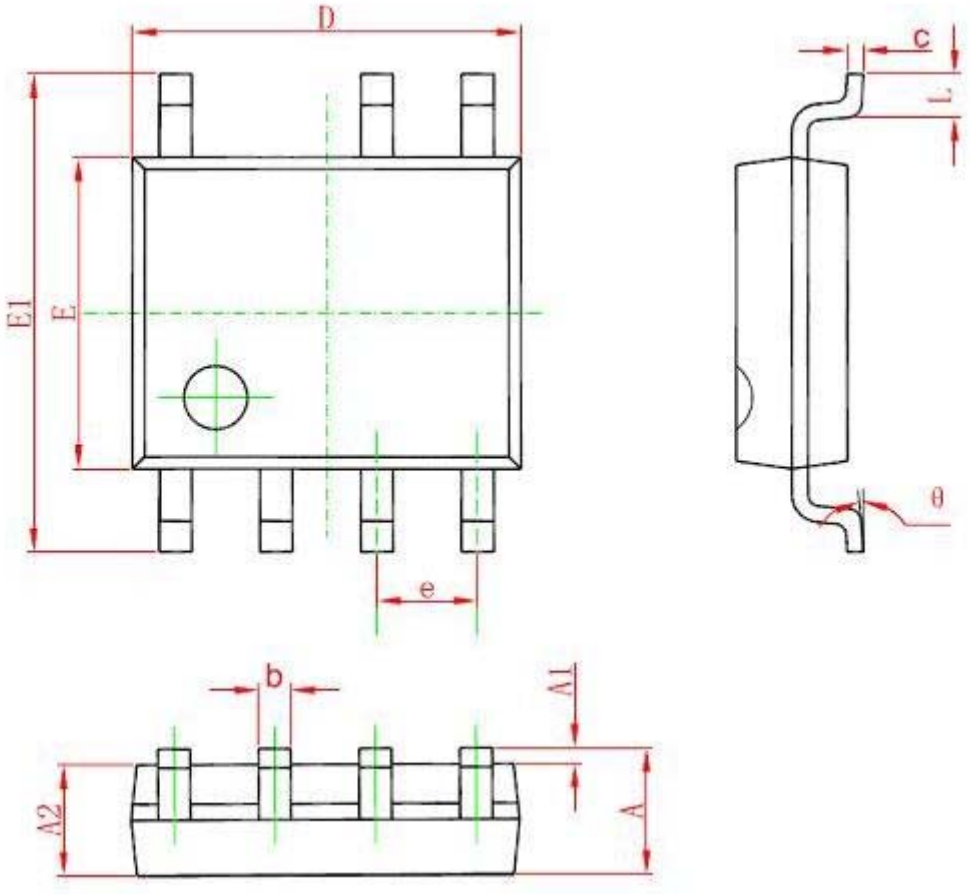
No.	Name	I/O	Pin Function
1	CS	I	Current sense pin
2	GND	P	Ground
3	NC		No connection
4	HV	I	High voltage power supply input
5	DRAIN	I	Drain of internal MOSFET

Terminal Assignment for OB5628AMHP

No.	Name	I/O	Pin Function
1	HV	I	High voltage power supply input
2	DRAIN	I	Drain of internal MOSFET
3	GND	P	Ground
4	CS	I	Current sense pin

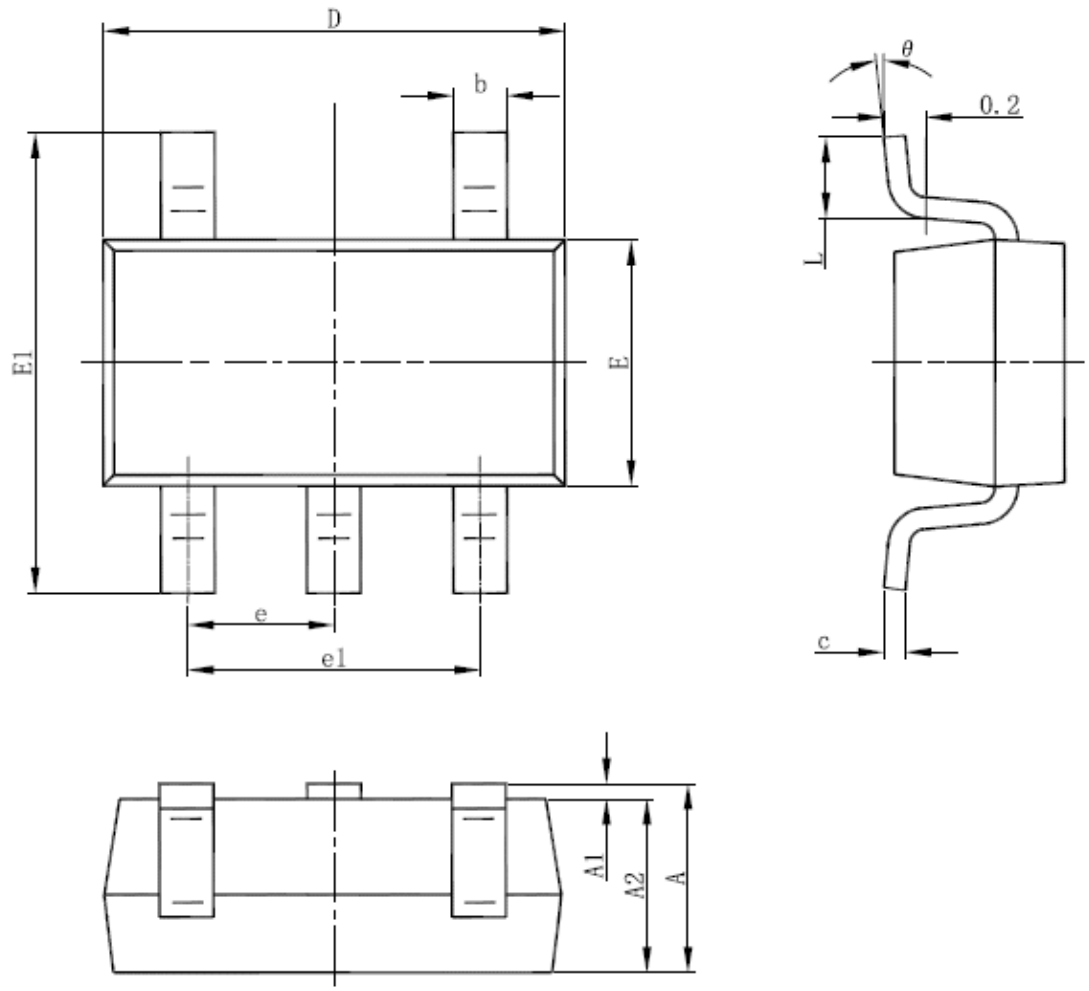
PACKAGE MECHANICAL DATA

SOP7



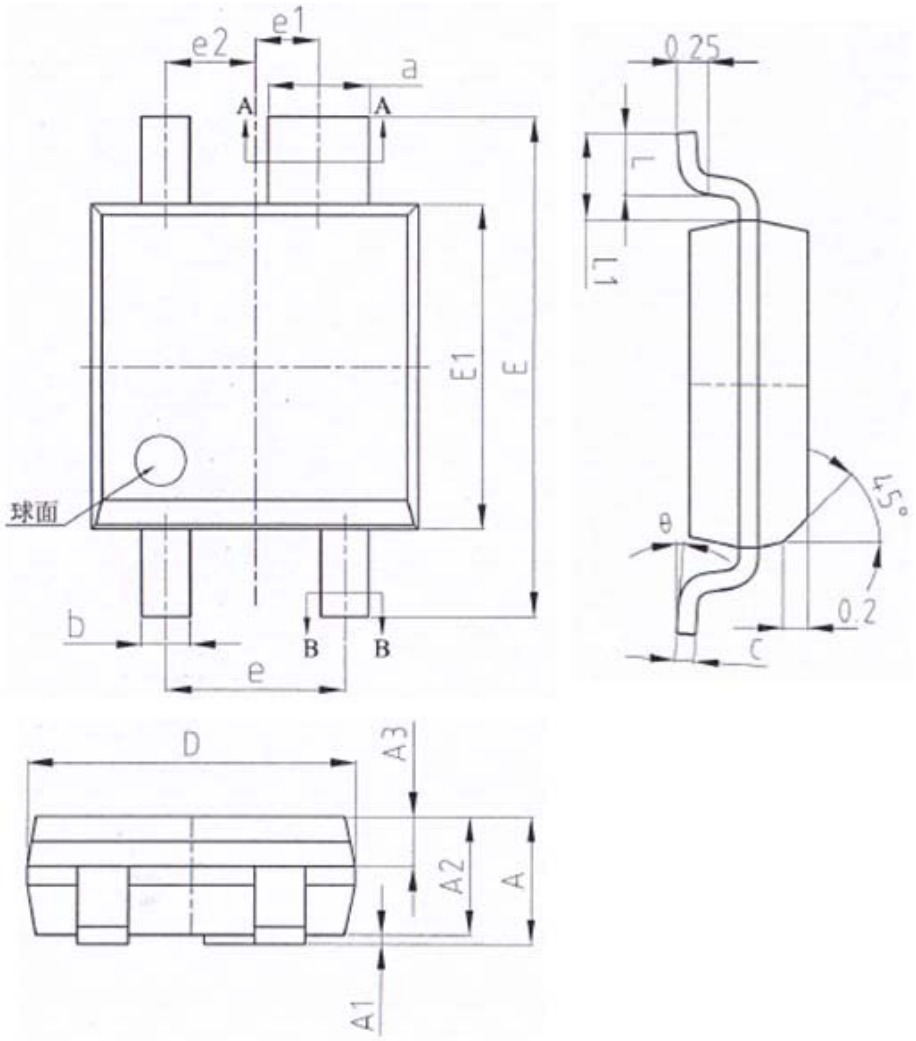
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.050	0.250	0.002	0.010
A2	1.250	1.650	0.049	0.065
b	0.310	0.510	0.012	0.020
c	0.100	0.250	0.004	0.010
D	4.700	5.150	0.185	0.203
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

SOT23-5



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.000	1.450	0.039	0.057
A1	0.000	0.150	0.000	0.006
A2	0.900	1.300	0.035	0.051
b	0.300	0.500	0.012	0.020
c	0.080	0.220	0.003	0.009
D	2.800	3.020	0.110	0.119
E	1.500	1.726	0.059	0.068
E1	2.600	3.000	0.102	0.118
e	0.950 (BSC)		0.037 (BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT33-4



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	-	1.15	-	0.045
A1	0.05	0.15	0.002	0.006
a	0.78	0.86	0.031	0.034
b	0.36	0.44	0.014	0.017
c	0.15	0.19	0.006	0.007
D	2.50	2.70	0.098	0.106
E1	2.50	2.70	0.098	0.106
E	3.80	4.20	0.150	0.165
e	1.42(BSC)		0.056(BSC)	
e1	0.50(BSC)		0.020(BSC)	
e2	0.71(BSC)		0.028(BSC)	
L	0.40	0.60	0.016	0.024
θ	0°	8°	0°	8°

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