GENERAL DESCRIPTION

OB6561PX is an active transition-mode (TM) power factor correction (PFC) controller for AC-DC switching mode power supply applications.

OB6561PX features a one quadrant multiplier with THD optimizer for near unity power factor, zero current detector (ZCD) to ensure TM operation, a current sensing comparator with built-in leading-edge blanking, and a totem pole output ideally suited for driving a power MOSFET.

OB6561PX offers great protection coverage including system over-voltage protection (OVP) to eliminate runaway output voltage due to load removal, VCC under voltage lockout (UVLO), cycle-by-cycle current limiting, multiplier output clamping that limit maximum peak switch current, and gate drive output clamping for external power MOSFET protection.

With added system open loop protection feature, OB6561PX shuts down system when the feedback loop is open.

FEATURES

- Transition Mode (TM) Operation
- One quadrant multiplier with THD optimizer
- Low Start-up Current and Operating Current
- Cycle-by-Cycle Current Limiting
- Internal RC Filter
- Under Voltage Lockout with Hysteresis
- Very Precise Adjustable Output Overvoltage Protection
- Disable Function
- Totem Pole Output with High State Clamping
- System Open Loop Protection
- Audio Noise Free
- 9.5V to 28V wide range of VCC voltage

APPLICATIONS

- Electronic Ballast
- AC-DC SMPS

TYPICAL APPLICATION

GENERAL INFORMATION

Terminal Assignment
In SOP8 or DIP8 Package.

```
        ┌───────○───────┐
INV ──┤ 1           8 ├── VCC
        │               │
COMP ─┤ 2           7 ├── GD
        │               │
MULT ─┤ 3           6 ├── GND
        │               │
CS ───┤ 4           5 ├── ZCD
        └───────────────┘
```
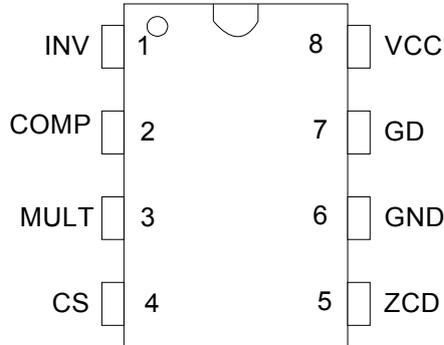
Ordering Information

Part Number	Description
OB6561PXAP	8 Pin DIP, Pb free in Tube
OB6561PXCP	8 Pin SOP, Pb free in Tube
OB6561PXCPA	8 Pin SOP, Pb free in T&R

Package Dissipation Rating

Package	RθJA (℃/W)
DIP8	90
SOP8	150

Absolute Maximum Ratings

Symbol	Parameter	Value
VCC	DC Supply voltage	30 V
I_ZCD	Zero Current Detector Max. Current	50mA(source) -10mA(sink)
CS INV COMP MULT	Analog inputs & outputs	-0.3 to 7V
Tj	Min/Max Operating Junction Temperature	-40 to 150 ℃
Tstg	Min/Max Storage Temperature	-55 to 150 ℃
Lead Temperature	(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.

OB6561PX X   X   X

High Performance PFC Controller	Package	Package Pb free	Packing
	A:DIP8 C:SOP8	Blank:Normal P:lead-free	Blank:Tube A: Tape/Reel
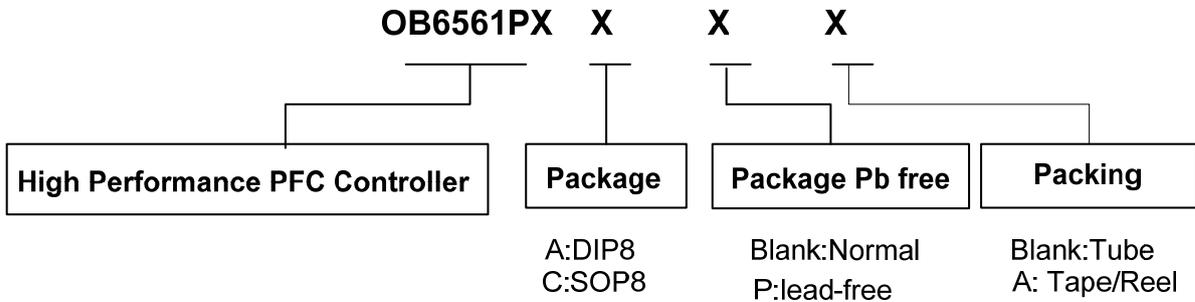
Marking Information

YWWZZZ
OB6561PCP
X
s

Y:Year Code
WW:Week Code(01-52)
ZZZ:Lot Code
C:SOP8 Package
P:Pb-free Package
X:Character Code
S:Internal Code(Optional)

YWWZZZ
OB6561PAP
X
s

Y:Year Code
WW:Week Code(01-52)
ZZZ:Lot Code
A:DIP8 Package
P:Pb-free Package
X:Character Code
S:Internal Code(Optional)

TERMINAL DESCRIPTIONS

| Pin Num	Pin Name	I/O	Description
1	INV	I	Inverting Input of Error Amplifier. Connected to Resistor Divider from System Output. This pin is also used for system open loop protection.
2	COMP	O	Output of Error Amplifier. A feedback compensation network is placed between COMP and the INV pin.
3	MULT	I	Input of Multiplier. Connected to Line Voltage after Bridge Diodes via A Resistor Divider to Provide Sinusoidal Reference Voltage to the Current Loop.
4	CS	I	Current Sense Input Pin. Connected to MOSFET Current Sensing Node.
5	ZCD	I	Zero Current Detection Input. When Activated, A New Switching Cycle Starts. If it is connected to GND, the device is disabled.
6	GND	P	Ground Pin
7	GD	O	Gate driver output. Drive Power MOSFET.
8	VCC	P	DC Supply Voltage.

PACKAGE MECHANICAL DATA
8-Pin Plastic DIP

DIP8 PACKAGE OUTLINE DIMENSIONS
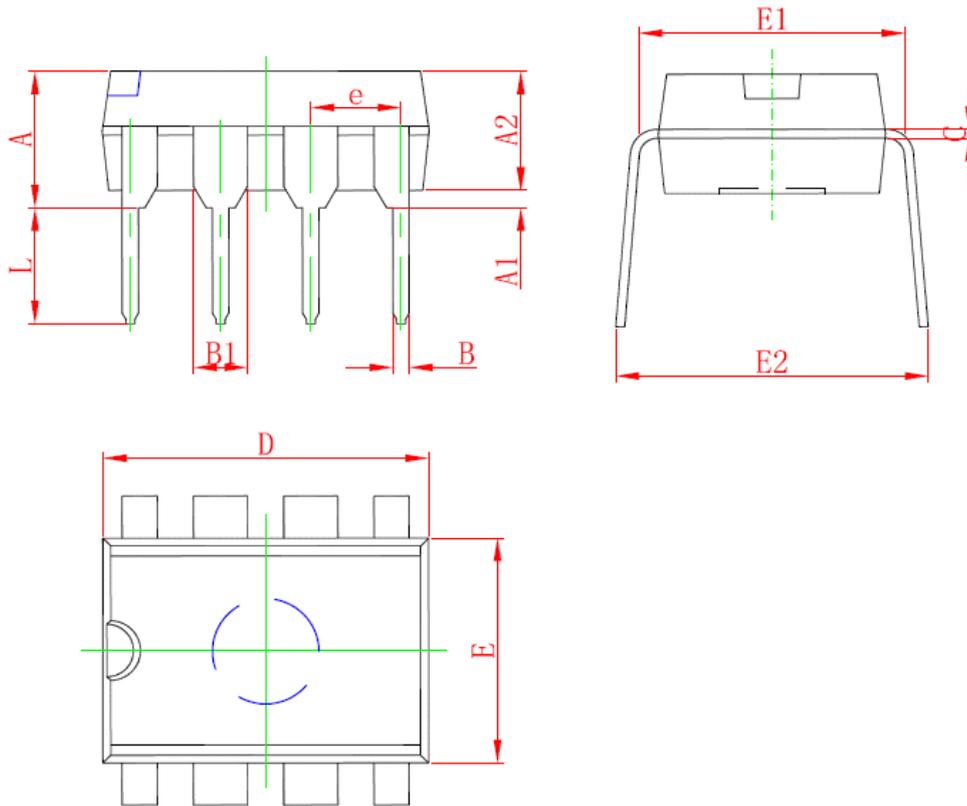
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.710	5.334	0.146	0.210
A1	0.381		0.015	
A2	2.921	4.953	0.115	0.195
B	0.350	0.650	0.014	0.026
B1	1.524 (BSC)		0.06 (BSC)	
C	0.200	0.360	0.008	0.014
D	9.000	10.160	0.354	0.400
E	6.096	7.112	0.240	0.280
E1	7.320	8.255	0.288	0.325
e	2.540 (BSC)		0.1 (BSC)	
L	2.921	3.810	0.115	0.150
E2	7.620	10.920	0.300	0.430

8-Pin Plastic SOP

SOP8 PACKAGE OUTLINE DIMENSIONS
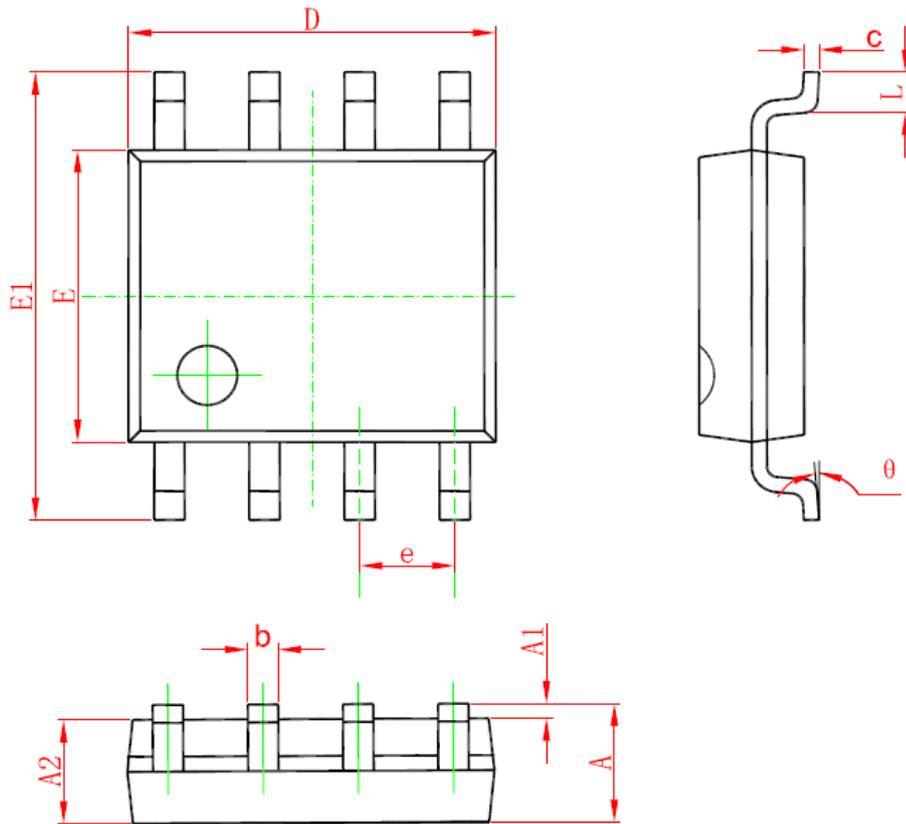
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.050	0.250	0.002	0.010
A2	1.250	1.650	0.049	0.065
b	0.310	0.510	0.012	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.150	0.185	0.203
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.05 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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