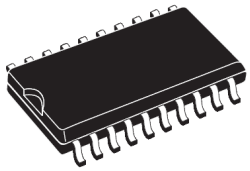
L6585D

PFC and Ballast Control IC

TARGET SPECIFICATION

Features

- Pre-heating and ignition phases independently programmable
- Programmable and precise End-of-life protection compliant with all ballast configurations
- Half-bridge over-current control
- Ignition voltage control
- Automatic Re-lamp
- 1.25µs dead time
- 3% Oscillator precision
- Transition mode PFC with over-current protection
- PFC over-voltage protection and feedback disconnection
- Under-voltage lock-out

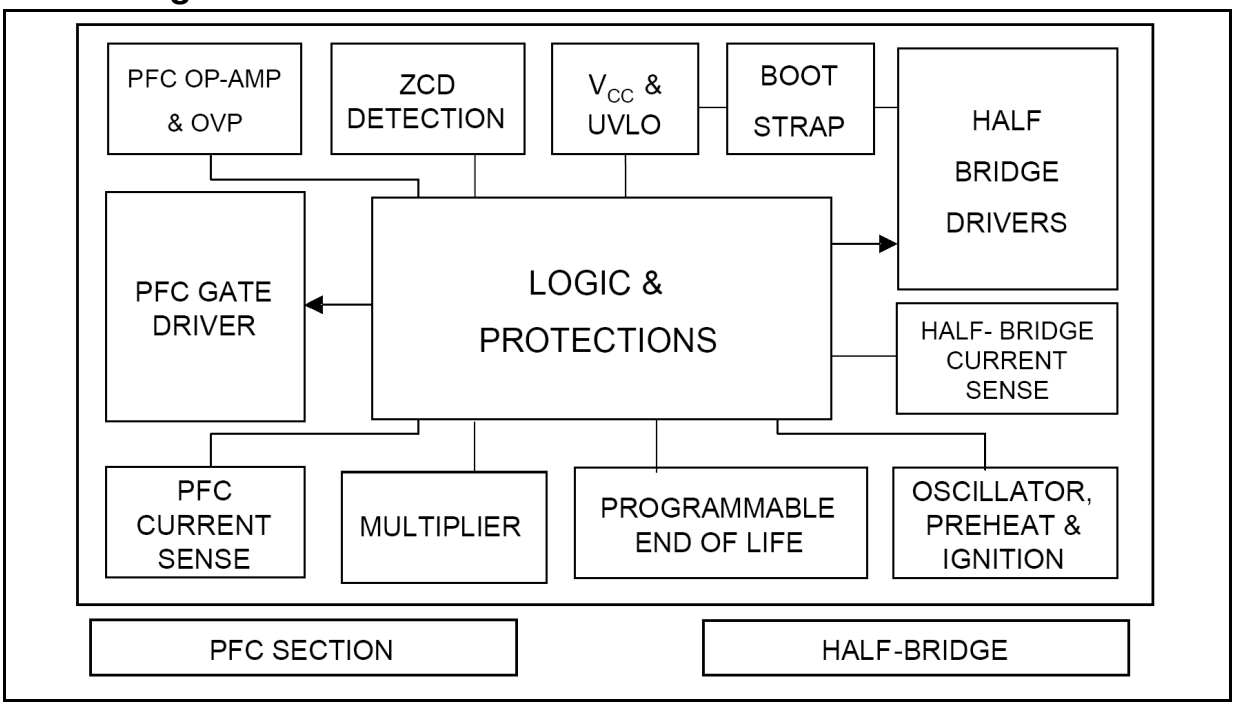


SO-20

Applications

- Electronic ballast

Block diagram



This is preliminary information on a new product foreseen to be developed. Details are subject to change without notice.

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1 Technical Overview

The L6585 is a ballast control IC with integrated Power Factor Corrector (PFC), designed in High-voltage BCD Off-line technology. This one-chip solution replaces a half bridge controller, a PFC controller, the relevant drivers and the logic necessary to build an electronic ballast.

The pre-heating and ignition durations are independently settable as well as the half-bridge switching frequencies for each operating phase (pre-heating, ignition and normal mode) to serve many different lamp types. Another outstanding feature is the capability of limiting the voltage applied to the lamp to a constant value during the ignition phase.

The PFC section operates in Transition Mode. The highly linear multiplier includes a special circuit, able to reduce AC input current distortion, that allows wide-range-mains operation with an extremely low THD, even over a large load range.

Some IC features, like the under voltage lock-out and the PFC over-voltage and feedback disconnection controls can assure lamp protection. Furthermore, a double threshold comparator on the half bridge current sense provides a sort of current control and avoids the MOSFETs working in the capacitive mode. A double threshold comparator on the PFC current sense prevents the inductor saturation.

Other features like the automatic re-lamp for lamp replacing, the failure to strike and the End-Of-Life control, simplify the lamp management. The programmability of the EOL windows comparator thresholds makes the L6585 the only lighting IC compliant with either "lamp-to-ground" or "block capacitor-to-ground" configurations.

The driver of the PFC is able to provide 120mA (source) and 250mA (sink) and the drivers of the half-bridge provide 170mA source and sink.

2 Pin Connections and Internal Schematic

Figure 1. Pin connection (through top view)

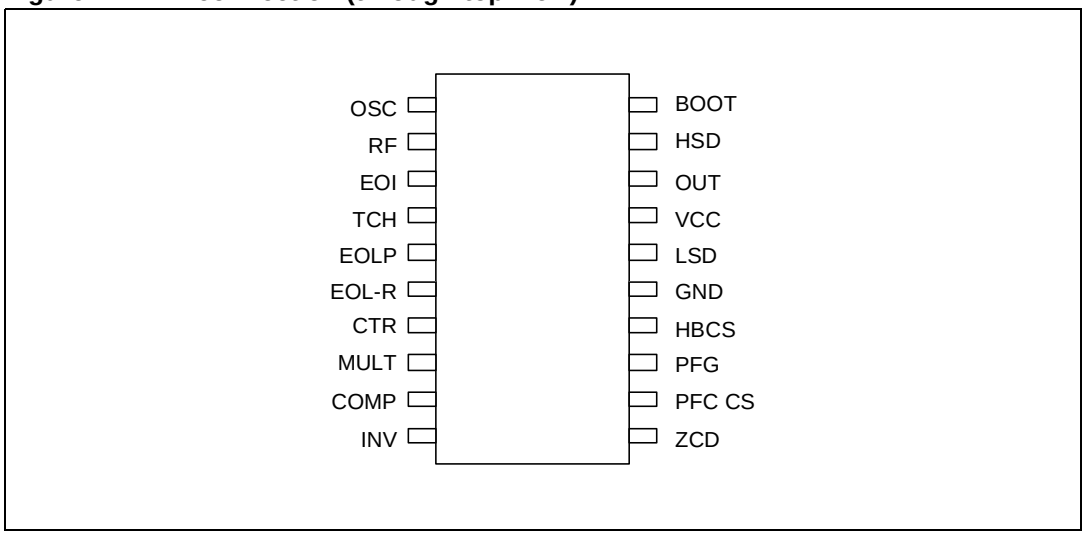
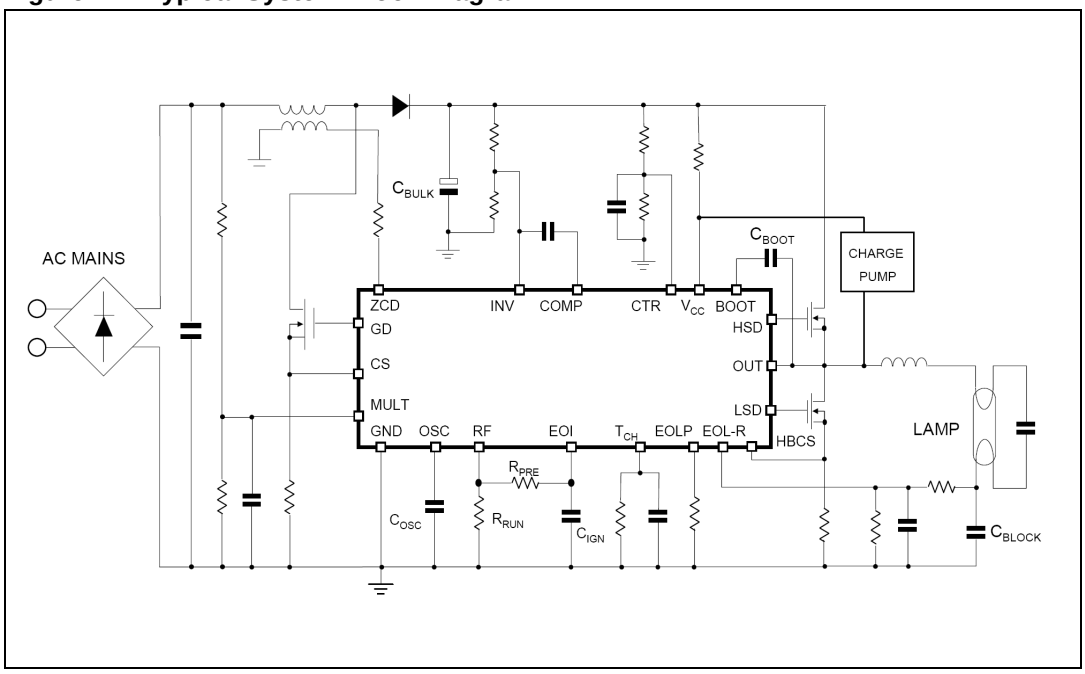


Figure 2. Typical System Block Diagram



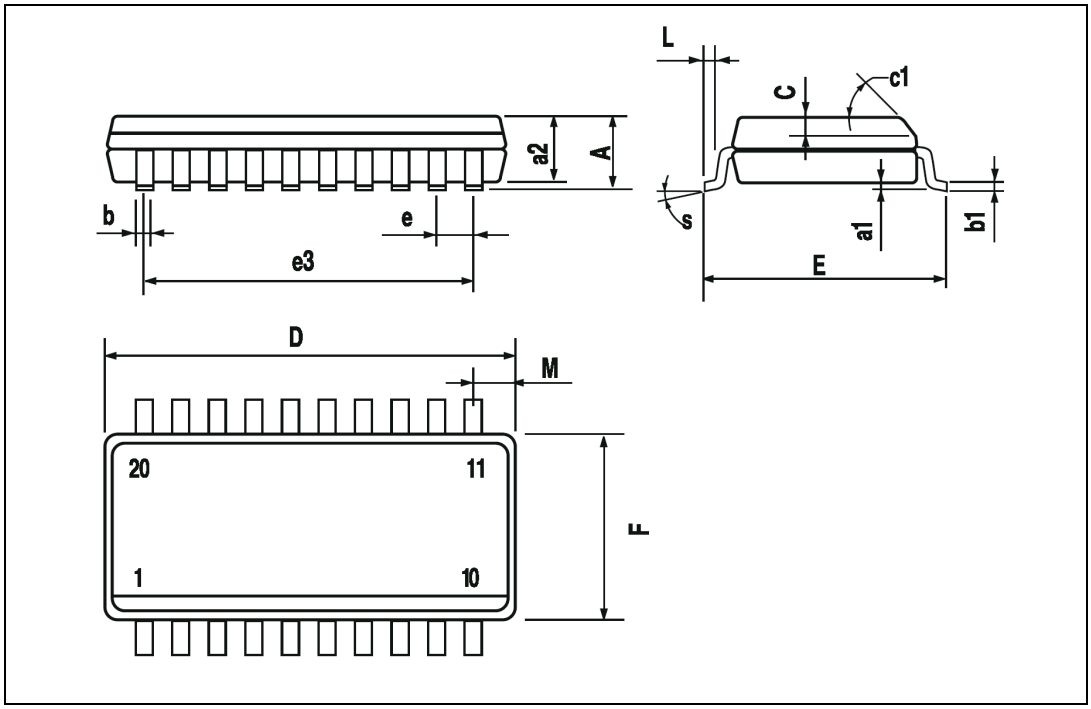
3 Mechanical Data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect. The category of second Level Interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

Table 1. SO-20 Mechanical Data

Dimensions						
Ref.	mm.			inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			2.65			0.104
a1	0.1		0.2	0.004		0.008
a2			2.45			0.096
b	0.35		0.49	0.014		0.019
b1	0.23		0.32	0.009		0.012
C		0.5			0.020	
c1	45° (typ.)					
D	12.60		13.00	0.496		0.512
E	10.00		10.65	0.393		0.419
e		1.27			0.050	
e3		11.43			0.450	
F	7.40		7.60	0.291		0.300
L	0.50		1.27	0.020		0.050
M			0.75			0.029
S	8° (max.)					

Figure 3. Package Dimensions



4 Order codes

Table 2. Order codes

Part Number	Package	Shipment
L6585D	SO-20	Tube
L6585DTR	SO-20	Tape and Reel

5 Revision history

Table 3. Document revision history

Date	Revision	Changes
12-Jan-2006	1	Initial release.

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