GENERAL DESCRIPTION

OB2374 is an excellent primary side regulation controller with CC/CV operation for medium level power AC/DC charger and adapter applications. The device directly drives a power MOSFET and operates in CCM/QR mode to provide high efficiency along with several functions of built-in protections. It removes the need for secondary feedback circuitry to lower the total bill of material cost. Proprietary Constant Voltage (CV) and Constant Current (CC) control is integrated as shown in the figure below.

In CV control, the controller changes the mode of operation according to line voltage and load condition. At full loading, the controller operates in fixed frequency CCM in low line voltage and operates quasi-resonant (QR) mode in high line voltage. The primary side regulation power supplies up to high power without the efficiency limitation of DCM or audible noise.

In CC control, OB2374 samples the Vcs peak current and the demagnetization pulse to regulation the output constant current. The current and output power setting can be adjusted externally by the sense resistor Rs at CS pin.

OB2374 offers comprehensive protection coverage with auto-recovery feature including Cycle-by-Cycle current limiting, VDD OVP, OLP, SCP etc.

OB2374 consumes less than 75mW input power at no- load condition with high line voltage.

OB2374 is offered in SOT23-6 package.

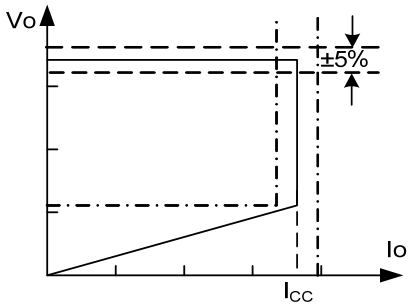


Figure.1. Typical CC/CV Curve

FEATURES

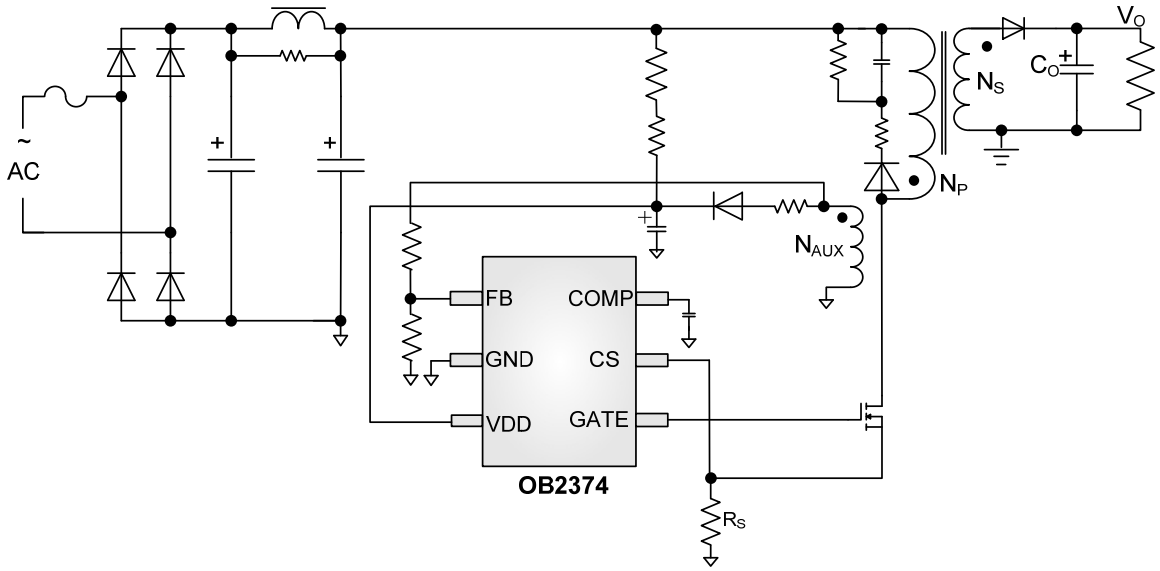
- Primary-side sensing and regulation operates in CCM/QR mode without TL431 and opto-coupler
- High precision constant voltage and current regulation at universal AC input
- Fixed frequency (65kHz) CCM mode operation with low line voltage at full load
- Quasi-resonant operation for high efficiency in high line voltage
- Good dynamic response
- Programmable CV and CC regulation
- Built-in primary winding inductance compensation
- Programmable cable drop compensation
- Built-in control loop compensation
- External over temperature protection with latch shutdown (OTP)
- Audio noise free operation
- Built-in leading edge blanking (LEB)
- Ultra low start-up current and low operating current
- Comprehensive protection coverage with auto-recovery
  - VDD over voltage protection (OVP)
  - VDD under voltage lockout with hysteresis (UVLO)
  - Cycle-by-cycle current limiting
  - Feedback open loop protection (OLP)
  - Output short circuit protection (SCP)

APPLICATIONS

Medium level Power AC/DC offline SMPS for

- Cell phone charger
- Tablet PC
- AC/DC adapter
- Set-top box power supplies

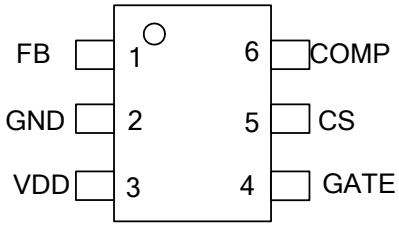
TYPICAL APPLICATION



GENERAL INFORMATION

Pin Configuration

The pin map is shown as below for SOT23-6.



Ordering Information

Part Number	Description
OB2374MP	SOT23-6, Pb-free in T&R

Package Dissipation Rating

Package	RθJA (℃/W)
SOT23-6	200

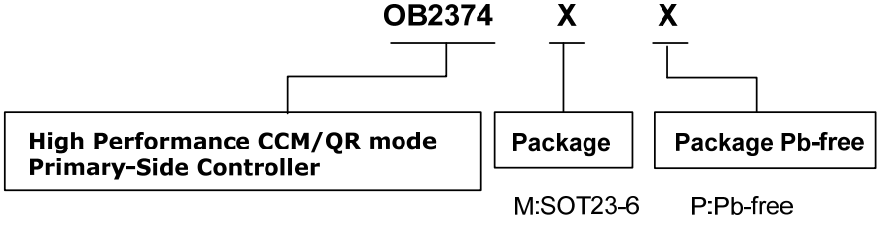
Recommended Operating Condition

Symbol	Parameter	Range
VDD	VDD Supply Voltage	9 to 22V

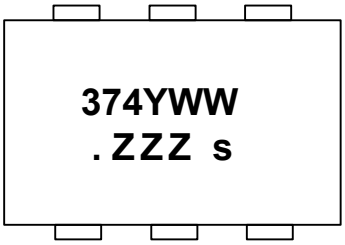
Absolute Maximum Ratings

Parameter	Value
VDD Voltage	-0.3 to 30V
FB Input Voltage	-0.3 to 7V
COMPInput Voltage	-0.3 to 7V
CS Input Voltage	-0.3 to 7V
GATE Input Voltage	-0.3 to 24V
Min/Max Operating Junction Temperature T_J	-40 to 150 ℃
Operating Ambient Temperature T_A	-20 to 85 ℃
Min/Max Storage Temperature T_{stg}	-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.



Marking Information



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

TERMINAL ASSIGNMENTS

Pin Num	Pin Name	I/O	Description
1	FB	I	The voltage feedback from auxiliary winding. Connected to resistor divider from auxiliary winding reflecting output voltage.
2	GND	P	Ground
3	VDD	P	Power Supply
4	GATE	O	Gate driver of power MOSFET.
5	CS	I	Current sense input. Connect a sense resistor from this pin to ground.
6	COMP	I/O	Connected through Cap to ground for CC loop compensation.

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