

GENERAL DESCRIPTION

OB2365A is a highly integrated current mode PWM control IC optimized for high performance, low standby power and cost effective offline flyback converter applications.

At normal load condition, it operates in QR mode in high line input voltage. To minimize switching loss, the maximum switching frequency in QR mode is internally limited to 77 KHz. When the loading goes low, it operates in PFM mode with valley switching for high power conversion efficiency. When the load is very small, the IC operates in 'Extended Burst Mode' to minimize the standby power loss. Additionally, in the low line input voltage, the IC operates in fixed frequency (65KHz) CCM mode at the heavy loading. As a result, high conversion efficiency can be achieved in the whole loading range.

VCC low startup current and low operating current contribute to a reliable power on startup and low standby design with OB2365A.

OB2365A offers comprehensive protection coverage with auto-recovery including Cycle-by-Cycle current limiting (OCP), over load protection (OLP), VCC under voltage lockout (UVLO), external over temperature protection (OTP), and over voltage protection (OVP). Excellent EMI performance is achieved with On-Bright proprietary frequency shuffling technique.

The tone energy at below 23KHz is minimized in the design and audio noise is eliminated during operation.

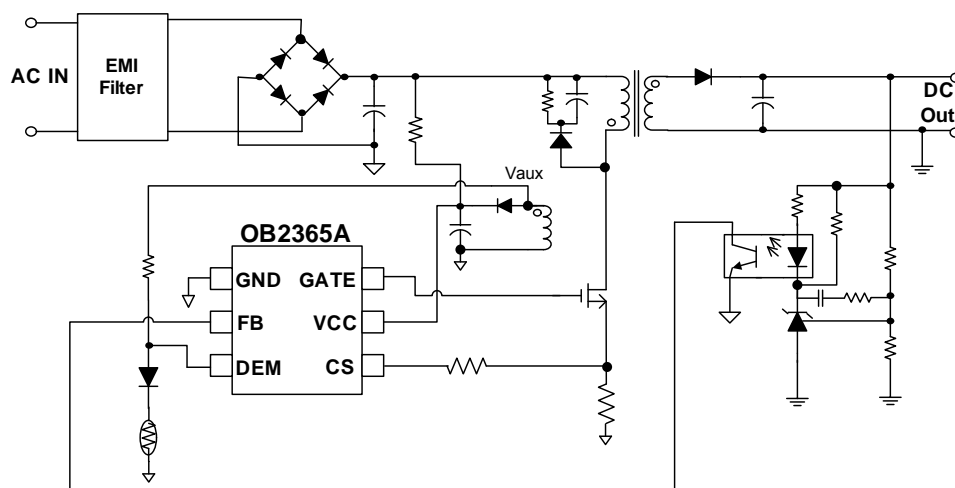
OB2365A is offered in SOT23-6 package.

APPLICATIONS

Offline AC/DC flyback converter for

- General power supply
- Power Adapter

TYPICAL APPLICATION

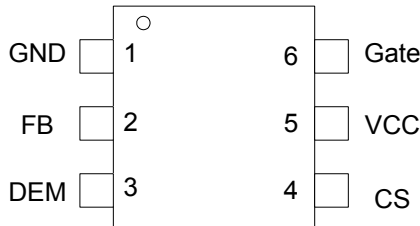


FEATURES

- Power on soft start reducing MOSFET Vds stress
- Multi-Mode Operation
 - 77KHz maximum clamping frequency in QR mode @ Full Load in high line voltage
 - 65KHz minimum clamping frequency in CCM mode @ Heavy Load in low line voltage
 - Valley switching operation @ Green mode
 - Burst Mode @ Light Load & No Load
- Frequency shuffling for EMI
- Extended burst mode control for improved efficiency and low standby power design
- Audio noise free operation
- Comprehensive protection coverage
 - VCC Under Voltage Lockout with hysteresis (UVLO)
 - VCC Over Voltage Protection (VCC OVP)
 - Cycle-by-cycle over current threshold setting for constant output power limiting over universal input voltage range
 - Over Load Protection (OLP) with auto-recovery
 - External (if NTC resistor is connected at DEM pin) or internal Over Temperature Protection (OTP) with auto-recovery
 - Output Over Voltage Protection (Output OVP) with auto-recovery, and the OVP triggered voltage can be adjusted by the resistor connected between auxiliary winding and DEM pin
 - Output diode short protection with auto-recovery

GENERAL INFORMATION

Pin Configuration



Ordering Information

Part Number	Description
OB2365AMP	SOT23-6, Halogen-free in T&R

Package Dissipation Rating

Package	R θ JA(°C/W)	R θ JC(°C/W)
SOT23-6	200	60

Recommended operating condition

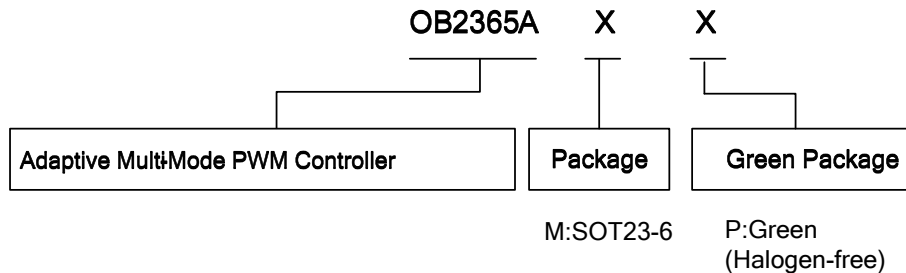
Symbol	Parameter	Range
VCC	VCC Supply Voltage	12 to 26V

Absolute Maximum Ratings

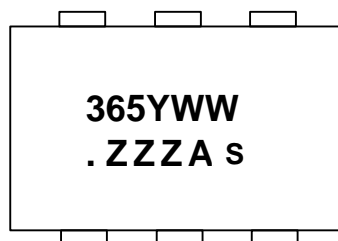
Parameter	Value
VCC DC Supply Voltage	29.5V
FB Input Voltage	-0.3 to 7V
CS Input Voltage	-0.3 to 7V
DEM Input Voltage	-0.3 to 7V
Min/Max Operating Junction Temperature T _J	-40 to 150 °C
Operating Ambient Temperature T _A	-40 to 85 °C
Min/Max Storage Temperature T _{stg}	-55 to 150 °C
Lead Temperature (Soldering, 10secs)	260 °C

Note1: 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.

Note 2: The negative voltage spike amplitude is relaxed to -1V under the condition that spike duty cycle is in less than 5%, or its equivalent average current is in less than 1mA.



Marking Information



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