

DESCRIPTION

The RS2042 is a low startup current, low cost, current mode PWM controller with Green-Power & Burst-mode power-saving operation. The integrated functions such as the leading-edge blanking of the current sensing, internal slope compensation provide the users a high efficiency, low external component counts, and low cost solution for AC/DC power applications. The special Green-Power function provides off-time modulation to linearly decrease the switching frequency under light-load conditions. And under zero-load conditions, the power supply enters Burst-mode to further reduce power consumption by shutting off PWM output. When the output of power supply is short or over loaded, the FB voltage will increase, and if the FB voltage is higher than 5.2V for longer than 56msec the PWM output will be turned off. An external NTC resistor connected from pin RT to ground can be applied to over-temperature protection. Pulse by pulse current limit ensures a constant output current even under short circuit. PWM output will be disabled as long as V_{DD} exceeds a threshold. When internal latch circuit is used to latch-off the controller, the latch will be reset when the power supply V_{DD} is disabled.

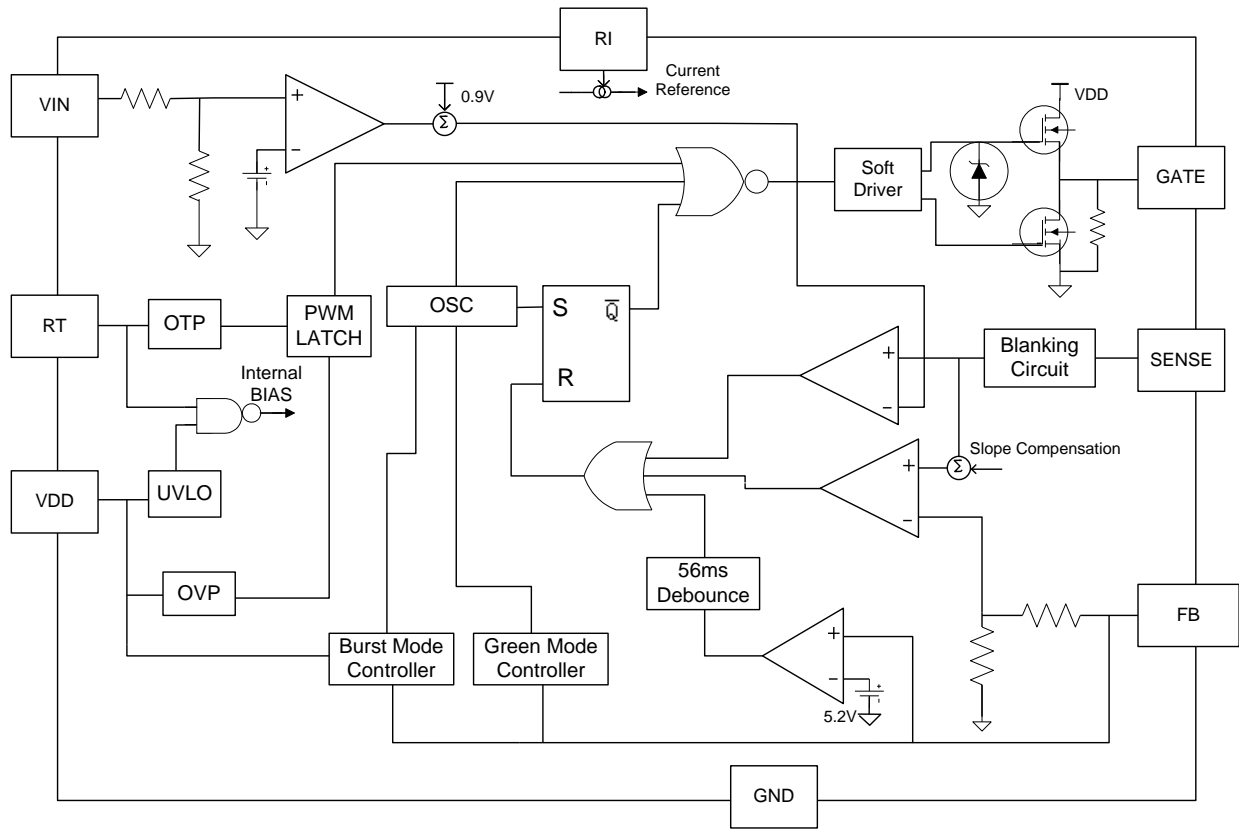
APPLICATIONS

- Power Adaptor
- Battery Charger Adapter
- Open Frame Switching Power Supply
- LCD Monitor

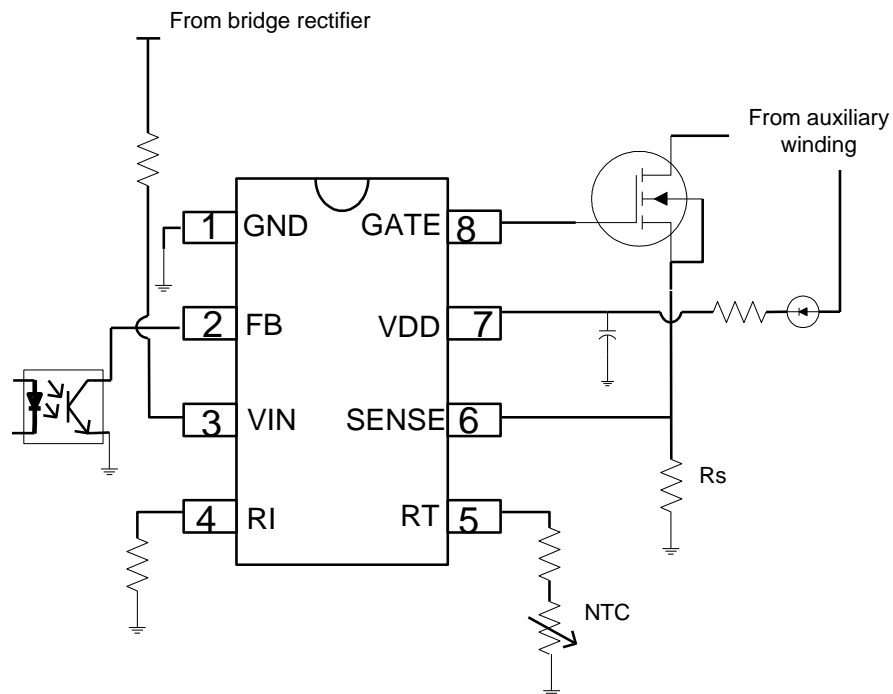
FEATURES

- Low Cost, Green-Power Burst-Mode PWM
- Very Low Start-up Current (about 7.5 μ A)
- Low Operating Current (about 3.0mA)
- Current Mode Operation
- Under Voltage Lockout (UVLO)
- V_{DD} Over Voltage Protection (OVP)
- Programmable over-temperature protection
- Internal Latch Circuit (OTP, OVP)
- Built-in soft start with 1ms
- Built-in Frequency Jiggling for better EMI Signature
- Soft Clamped gate output voltage 16.5V
- V_{DD} over voltage protect 25.5V
- Cycle-by-cycle current limiting
- Sense Fault Protection
- Output SCP (Short circuit Protection)
- Built-in Synchronized Slope Compensation
- Leading-edge blanking on Sense input
- Programmable PWM Frequency
- Over temperature protection
- High-Voltage CMOS Process with ESD
- DIP-8 & SOP-8 Pb-Free Package

BLOCK DIAGRAM



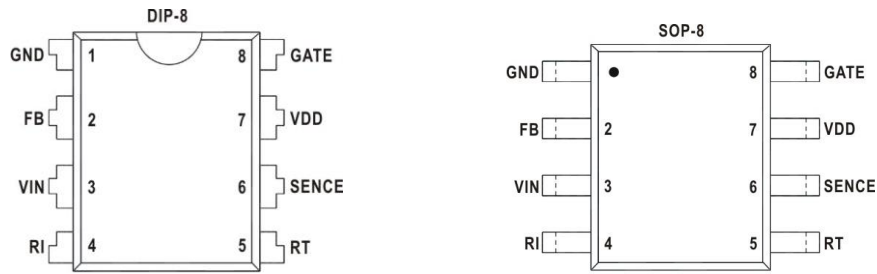
APPLICATION CIRCUIT



ORDER INFORMATION

DEVICE	DEVICE CODE
RS2042 Y Z	Y is package & Pin Assignments designator : S : SOP-8 P : DIP-8

PIN CONFIGURATION



PIN DESCRIPTION

Pin Name	Description	Pin No
GND	GND Pin	1
FB	Voltage feedback pin. The PWM duty cycle is determined by FB and Sense.	2
VIN	This pin is pulled high to the rectified line input through a large resistor for start-up. This pin is also used to detect line voltage to compensate for constant output power limit for universal AC input.	3
RI	By connecting a resistor to ground to set the switching frequency. Increasing the resistor will reduce the switching frequency.	4
RT	An NTC resistor is connected from this pin to ground for over-temperature protection.	5
SENCE	Current sense pin, The sensed voltage is used for current-mode control and pulse-by-pulse current limiting.	6
VDD	Power supply voltage pin.	7
GATE	Gate drive output to drive the external MOSFET. A soft driving waveform is implemented to improve EMI.	8

IMPORTANT NOTICE

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