DESCRIPTION

PT6904 is a constant-current LED driver IC utilized constant frequency, controls buck, boost or buck-boost switch converter. In each control mode, PT6904 adopts the inductance current continuous conduction, peak current control mode and the feedback of the output current. It's controlled by the internal transconductance operational amplifier and external adjustable slope compensation, it is able to gain the high precision output current in closed loop.

The typical functions of PT6904 such as UVLO (Under Voltage Lockout), input current limit, open LED protection, output short circuit protection, output current precision control, linear dimming, PWM dimming, etc. In addition, multiple the sync pin of PT6904s or input the same clock signal, these ICs will operate on the same frequency.

Input voltage of PT6904 is 9V to 36V, the oscillator frequency is 25KHz~350KHz that setting by the external resistors, and the output PWM signal drive external power NMOS. PWM dimming input can accept an external control signal with a duty cycle 0~100% and a frequency between 100Hz to a few KHz.

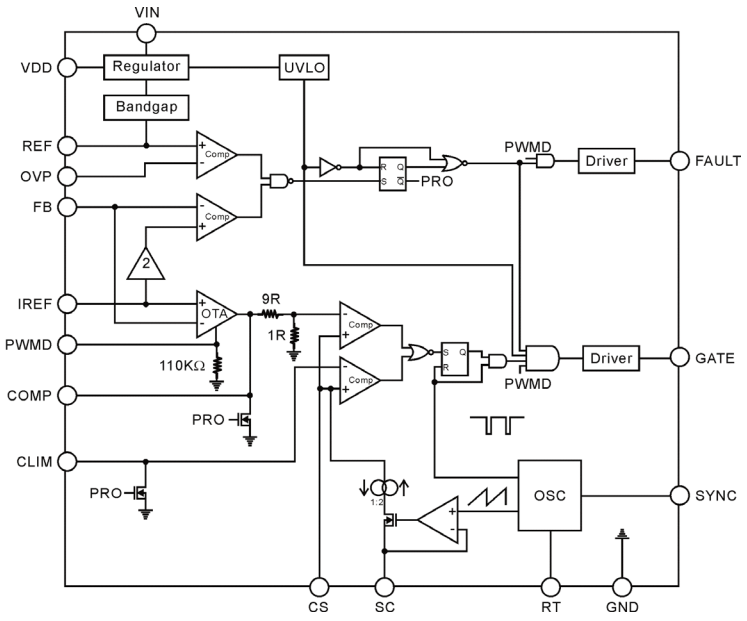
FEATURES

- >90% efficiency
- Operating voltage: 9V~36V
- Constant-current driver
- Switch control mode: Buck, Boost, Buck-Boost
- Stable operation frequency
- Slope compensation
- Output current closed loop control
- Input current limit, output over voltage protection, output short-circuit protection
- Linear dimming & PWM dimming
- Synchronization
- Soft start

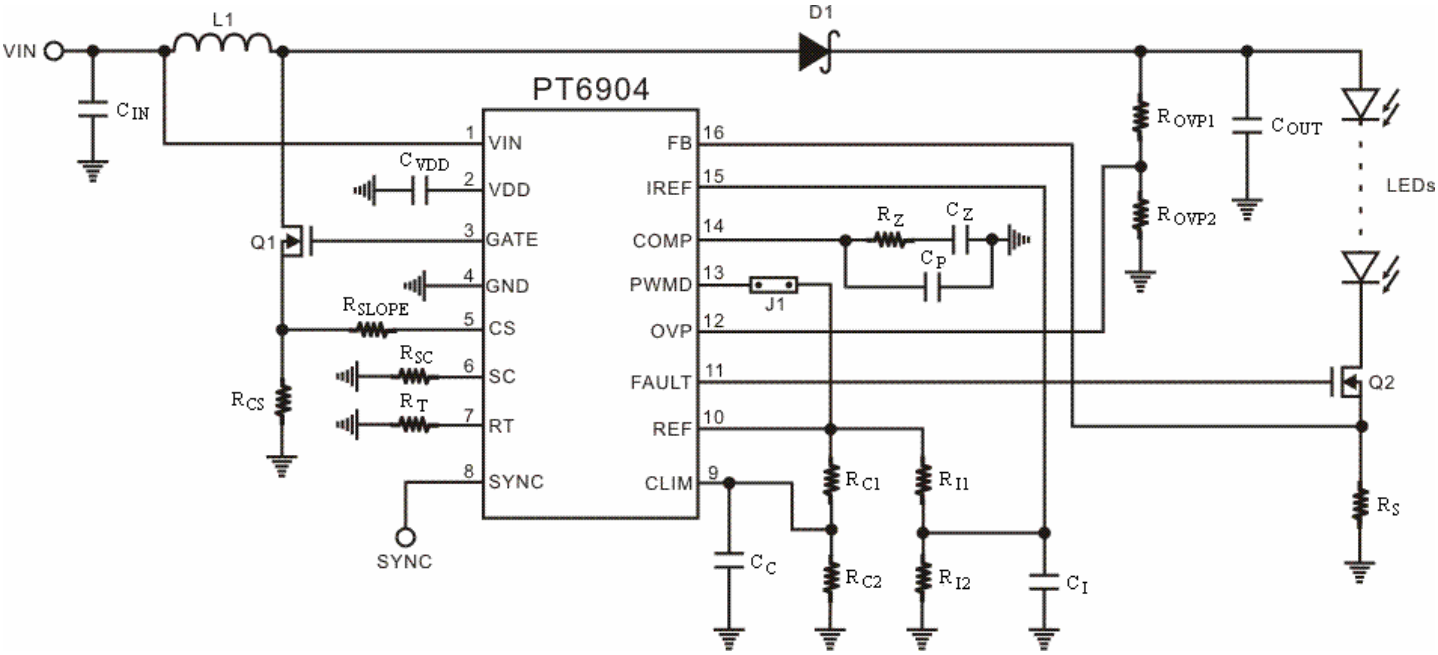
APPLICATIONS

- LED backlight
- Automotive LED lighting
- Other DC/DC LED drivers

BLOCK DIAGRAM



TYPICAL APPLICATION

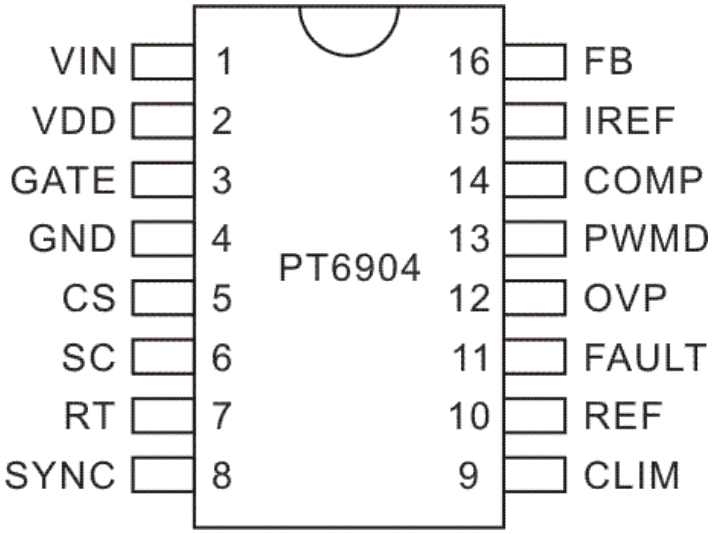


ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT6904-S	16 Pins, SOP, 150mil	PT6904-S

PIN CONFIGURATION

16 PINS, SOP



PIN DESCRIPTION

Pin Name	Description	Pin No.
VIN	Input voltage 9V~36V DC.	1
VDD	Internal regulated voltage.	2
GATE	Drives the gate of external N-channel MOSFET.	3
GND	Ground.	4
CS	Senses the external MOSFET current.	5
SC	Slope compensation for current sense.	6
RT	Oscillator frequency control.	7
SYNC	Synchronization control.	8
CLIM	Input current limit & Soft start.	9
REF	Reference voltage.	10
FAULT	Drives the gate of external N-channel MOSFET. It will be locked at low level when IC works in error condition.	11
OVP	Over voltage protection.	12
PWMD	Low frequency PWM dimming pin, also enable pin.	13
COMP	Output of OTA, stable closed loop control.	14
IREF	Sets the LED string current level.	15
FB	LED string current feedback & output short circuit protection.	16

IMPORTANT NOTICE

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