

**Features**

- Wide 4.5V to 40V Input Voltage Range
- 5V and adjustable versions
- Output Adjustable from 1.23V to 37V
- Maximum Duty Cycle 100%
- Minimum Drop Out 1.5V
- Fixed 150KHz Switching Frequency
- 3A Constant Output Current Capability
- Internal Optimize Power Transistor
- High efficiency
- Excellent line and load regulation
- TTL shutdown capability
- ON/OFF pin with hysteresis function
- Built in thermal shutdown function
- Built in current limit function
- Built in second current limit function
- Available in TO-252 package

**Applications**

- LCD Monitor and LCD TV
- Digital Photo Frame
- Set-up Box
- ADSL Modem
- Telecom / Networking Equipment

**General Description**

The XL1507 is a 150 KHz fixed frequency PWM buck (step-down) DC/DC converter, capable of driving a 3A load with high efficiency, low ripple and excellent line and load regulation. Requiring a minimum number of external components, the regulator is simple to use and include internal frequency compensation and a fixed-frequency oscillator.

The PWM control circuit is able to adjust the duty ratio linearly from 0 to 100%. An enable function, an over current protection function is built inside. When second current limit function happens, the operation frequency will be reduced from 150KHz to 50KHz. An internal compensation block is built in to minimize external component count.



Figure1. Package Type of XL1507 (TO252-5L)

#### Pin Configurations (TO252-5L)

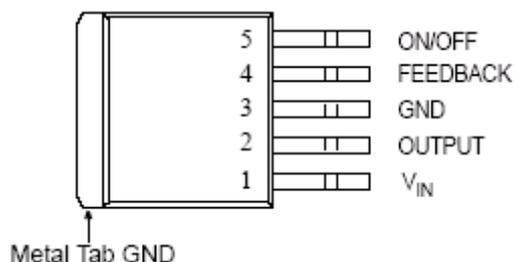


Figure2. Pin Configuration of XL1507 (Top View)

Table 1 Pin Description

Pin Number	Pin Name	Description
1	VIN	Supply Voltage Input Pin. XL1507 operates from a 4.5V to 40V DC voltage. Bypass Vin to GND with a suitably large capacitor to eliminate noise on the input.
2	OUTPUT	Power Switch Output Pin (SW). Output is the switch node that supplies power to the output.
3	GND	Ground Pin. Care must be taken in layout. This pin should be placed outside of the Schottky Diode to output capacitor ground path to prevent switching current spikes from inducing voltage noise into XL1507.
4	FEEDBACK	Feedback Pin (FB). Through an external resistor divider network, Feedback senses the output voltage and regulates it. The feedback threshold voltage is 1.23V.
5	ON/OFF	Enable Pin. Drive ON/OFF pin low to turn on the device, drive it high to turn it off. Floating is default low.

**3A 150KHz 40V Buck DC to DC Converter** **XL1507**

### Function Block

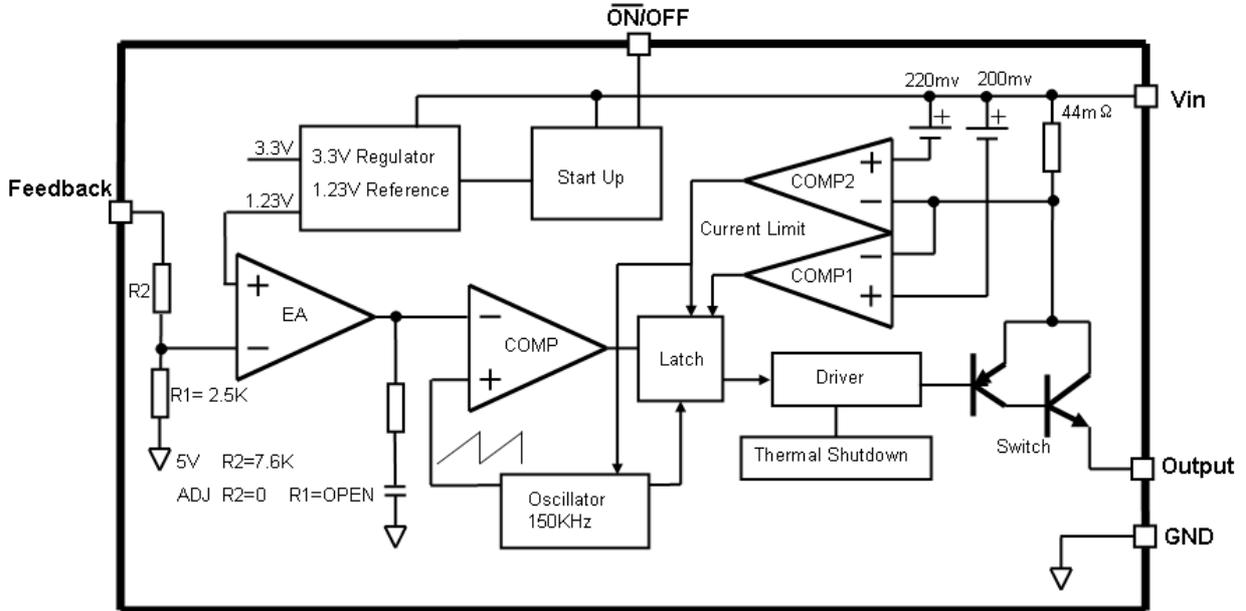


Figure3. Function Block Diagram of XL1507

### Typical Application Circuit

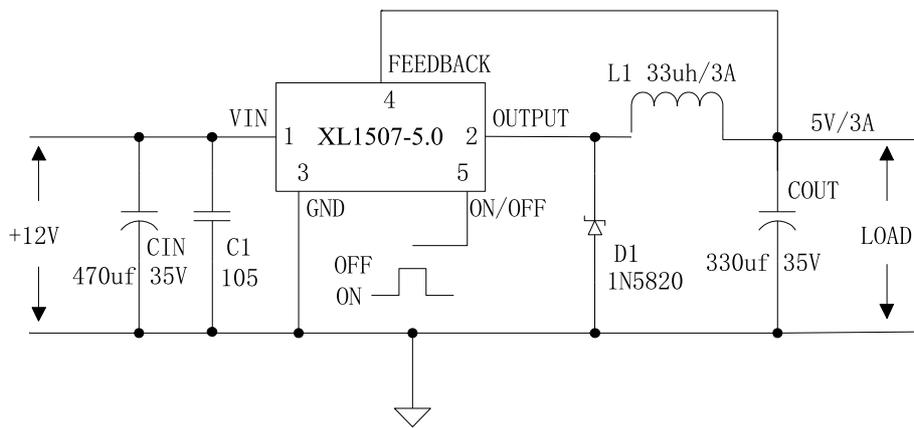
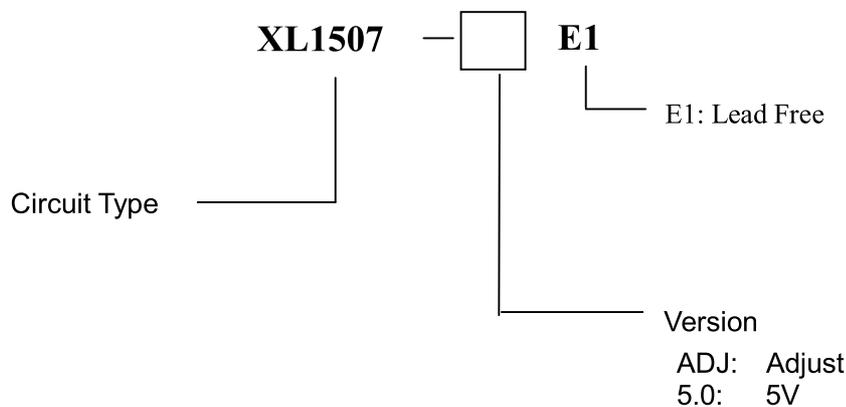


Figure4. XL1507 Typical Application Circuit 12V-5V/3A

## Ordering Information



Order Information	Marking ID	Package Type	Packing Type Supplied As
XL1507-ADJE1	XL1507-ADJE1	TO252-5L	2500 Units on Tape & Reel
XL1507-5.0E1	XL1507-5.0E1	TO252-5L	2500 Units on Tape & Reel

XLSEMI Pb-free products, as designated with “E1” suffix in the par number, are RoHS compliant.