



Descriptions

The EC3207 is a high-efficiency, DC-to-DC Step-down switching regulators, capable of delivering up to 1.4A of output current. The device operates from an input voltage range of 2.5V to 6.0V and provides an output voltage from 0.6V to VIN, making the EC3207 ideal for low voltage power conversions. Running at a fixed frequency of 1.5MHz allows the use of small external components, such as ceramic input and output caps, as well as small inductors, while still providing low output ripples. This low noise output along with its excellent efficiency achieved by the internal synchronous rectifier, making EC3207 an ideal green replacement for large power consuming linear regulators. Internal soft-start control circuitry reduces inrush current. Short-circuit and thermal overload protection improves design reliability.

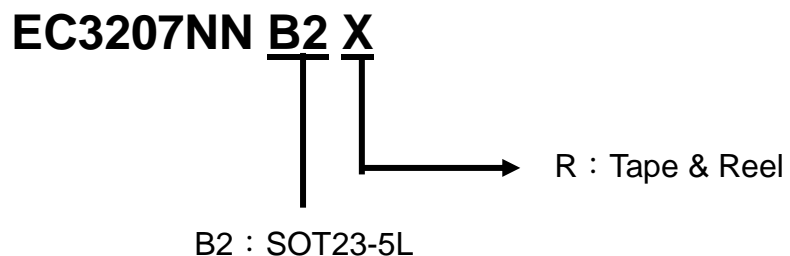
Feature

- Duty-cycle 0 to 100%
- 1.4A Output current
- High Efficiency Up To 96%
- 2.5V to 6.0V Input Voltage Range
- Fixed 1.5MHz Frequency
- Logic Control Shutdown IQ<1μA
- Thermal Shutdown
- Output Adjustable from 0.6V to Input Voltage

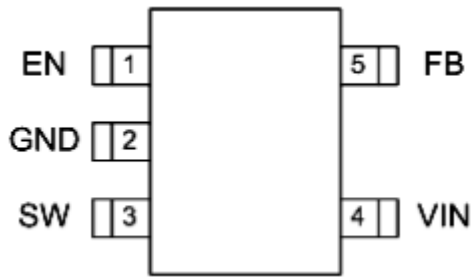
Application

- Digital Framer
- PDA and Pocket PC
- Cellular Phone and Smart Phone
- Wireless Devices
- Battery Powered Widgets
- Portable Media Players
- Electronic Scales

Ordering Information



Pin Configuration



Absolute Maximum Ratings (TA = 25°C Unless otherwise noted)

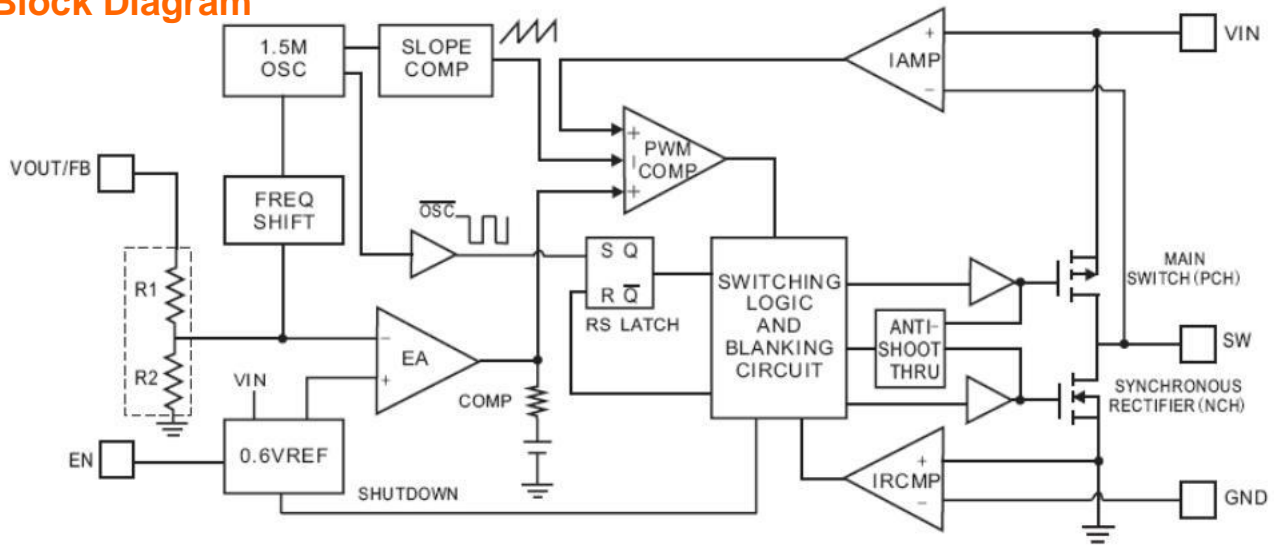
Parameter	Symbol	Value	Units
Input Voltage	V _{IN}	-0.3~+6.5	V
EN, FB, SW Pin Voltage	V _{OUT}	-0.3~+V _{IN}	V
Thermal Resistance (Junction to Ambient)	θ _{JA}	250	°C/W
Thermal Resistance (Junction to Case)	θ _{JC}	90	°C/W
Operating Junction Temperature	V _{OUT}	-40~+85	°C
Storage Temperature	T _S	-65 to +150	°C

Note: Exceeding these ratings could cause damage to the device. All voltages are with respect to Ground. Currents are positive into, negative out of the specified terminal.

Electrical Characteristic (TA = 25°C, V_{IN}=3.6V unless otherwise noted)

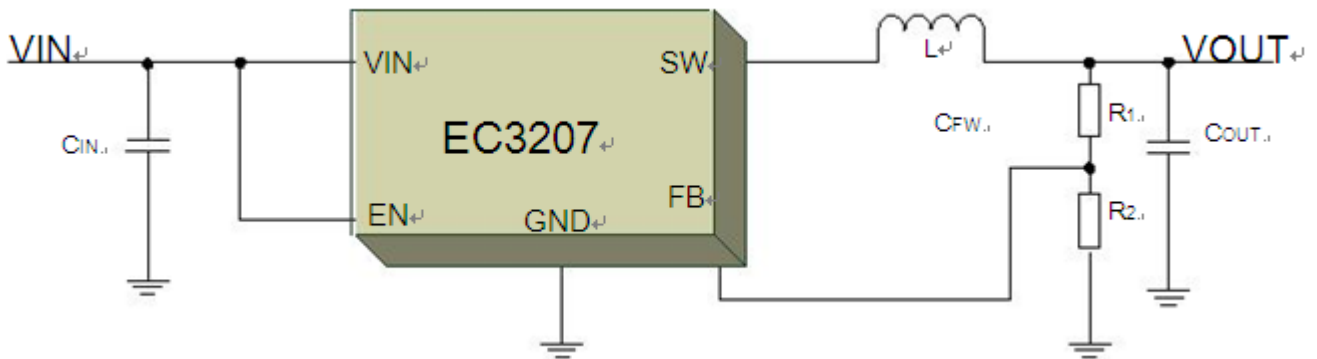
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Input Voltage Range	V _{IN}	-40~85°C	2.5		6.0	V
Feedback Voltage	V _{FB}	T _A =25°C	0.588	0.6	0.612	V
		T _A =-40°C~+85°C	0.585	0.6	0.615	V
EN Threshold High	V _{EH}	-40°C~+85°C	1.5			V
EN Threshold Low	V _{EL}	-40°C~+85°C			0.4	V
Peak Inductor Current	I _{PK}	V _{FB} =0.5V		1.4		A
EN Input Current	I _{EN}			±0.01	1	uA
Reference Voltage Line Regulation	ΔV _{FB}	V _{IN} =2.7V ~ 5.5V		0.04		%/V
Quiescent Current Hysteresis	I _Q	V _{FB} =0.6V or V _{out} =103%, I _{LOAD} =0A, V _{IN} =3.6V		30		uA
Shutdown Current	I _{SD}	V _{EN} =0V			1	uA
Oscillator Frequency	f _{OSC}	V _{FB} = 0.6V or V _{OUT} = 100%		1.5		MHz
Drain-Source On-State Resistance	R _{DS(ON)}	I _{SW} = 200mA	P-MOSFET	0.22		Ω
			N-MOSFET	0.3		
SW Leakage Current	I _{SW}	V _{OUT} =5.5V, V _{SW} =0 or 5.5V, EN=0V		10		uA

Block Diagram



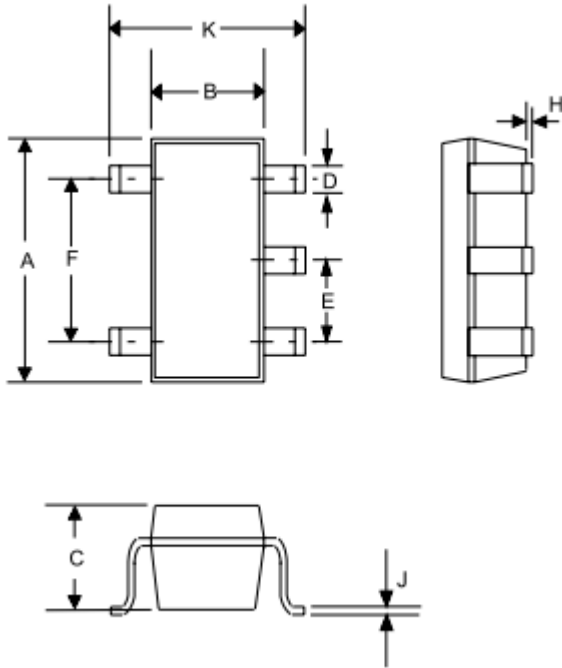
Typical application circuit

Adjustable Output Voltage



$V_{IN}=2.5V \sim 6.0V$
 $V_{OUT}= 1.8V$
 $R1=240K\Omega$
 $R2=120K\Omega$
 $C_{IN}=10\mu F$
 $C_{OUT}=10\mu F$
 $L=2.2 \mu H$

Outline Drawing SOT-23-5L



DIM	DIMENSIONS			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.110	0.120	2.80	3.05
B	0.059	0.070	1.50	1.75
C	0.036	0.051	0.90	1.30
D	0.014	0.020	0.35	0.50
E	-	0.037	-	0.95
F	-	0.075	-	1.90
H	-	0.006	-	0.15
J	0.0035	0.008	0.090	0.20
K	0.102	0.118	2.60	3.00