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.

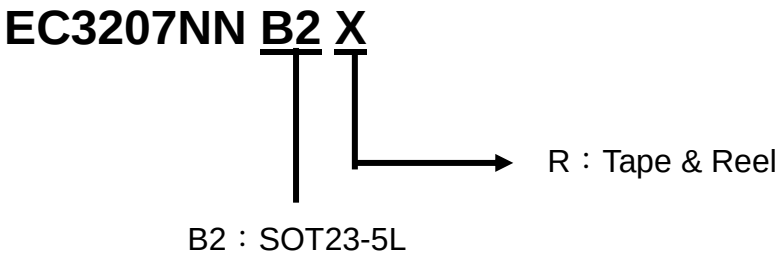
Feature

- 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

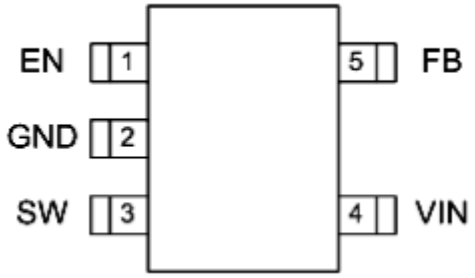
Application

- 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)

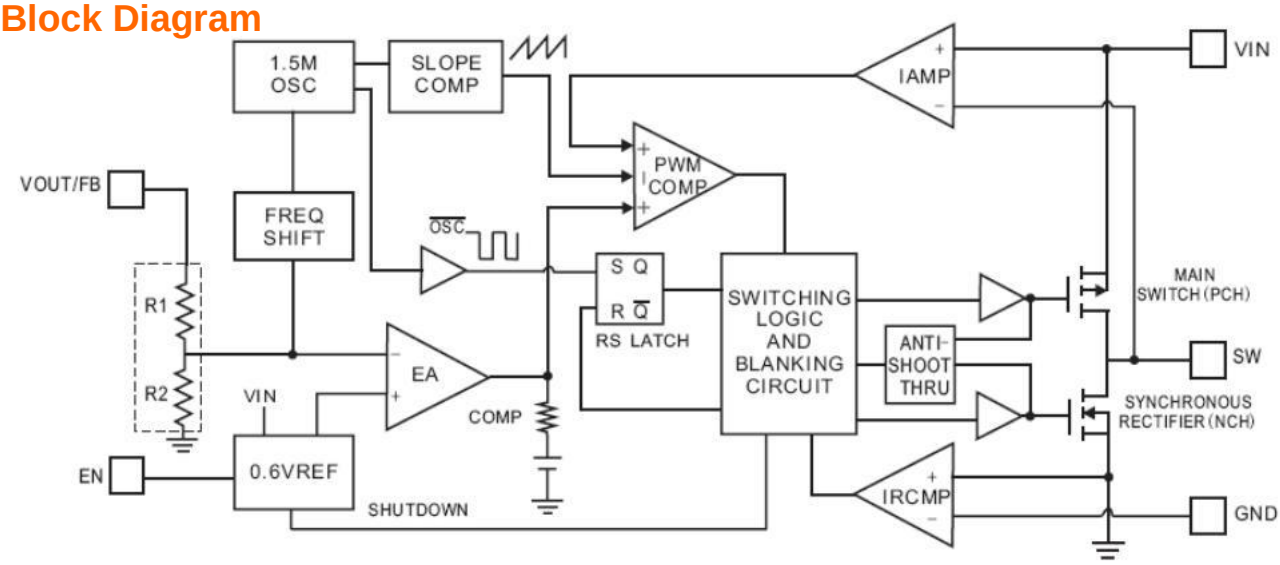
Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	-0.3~+6.5	V
EN, FB, SW Pin Voltage	V_{OUT}	-0.3~+V_{IN}	V
Thermal Resistance (Junction to Ambient)	θ_{JA}	250	°C/W
Thermal Resistance (Junction to Case)	θ_{JC}	90	˚C/W
Operating Junction Temperature	VOUT	-40~+85	˚C
Storage Temperature	Ts	-65 to +150	°C

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℃, V_{IN}=3.6V unless otherwise noted)

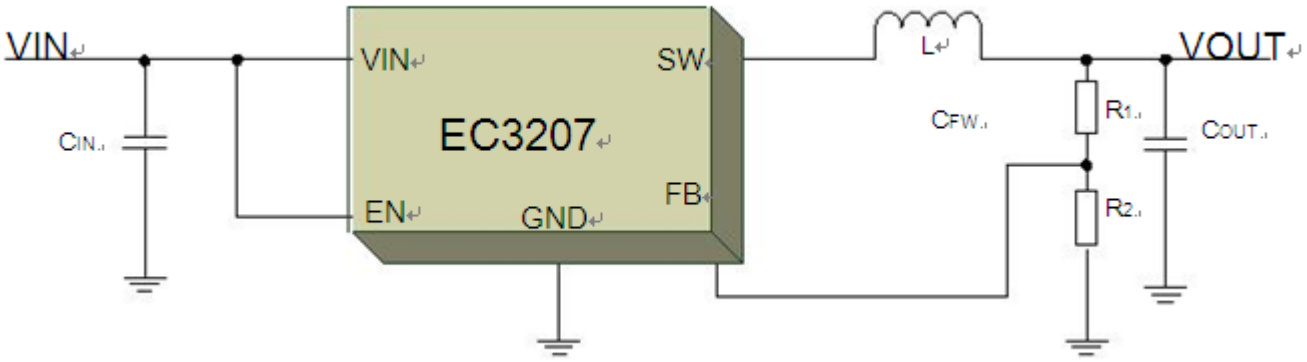
Parameter	Symbol	Test Condition		Min	Typ	Max	Units
Input Voltage Range	VIN	-40~85℃		2.5		6.0	V
Feedback Voltage	VFB	T_A=25℃		0.588	0.6	0.612	V
		T_A=-40℃~+85℃		0.585	0.6	0.615	V
EN Threshold High	V_{EH}	-40℃~+85℃		1.5			V
EN Threshold Low	V_{EL}	-40℃~+85℃				0.4	V
Peak Inductor Current	I_{PK}	V_{FB}=0.5V			1.4		A
EN Input Current	I_{EN}				±0.01	1	uA
Reference Voltage Line Regulation	△V_{FB}	V_{IN}=2.7V ~ 5.5V			0.04		%/V
Quiescent Current Hysterisis	I_Q	V_{FB}=0.6V or Vout=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	$R_{DS(ON)}$	ISW = 200mA	P-MOSFET		0.22		Ω
			N-MOSFET		0.3		
SW Leakage Current	ISW	V_{OUT}=5.5V, V_{SW}=0 or 5.5V, EN=0V			10		uA

Block Diagram



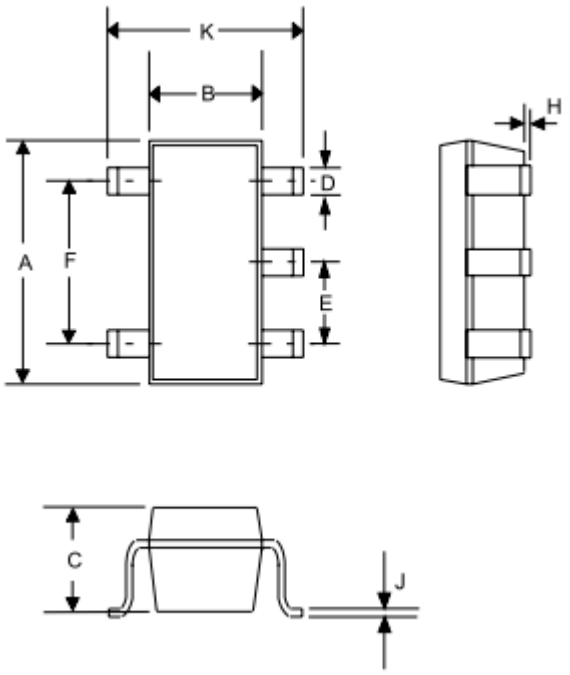
Typical application circuit

Adjustable Output Voltage



V_{IN}=2.5V ~6.0V
V_{OUT}= 1.8V
R1=240KΩ
R2=120KΩ
C_{IN}=10μF
C_{OUT}=10μF
L=2.2 μH

Outline Drawing SOT-23-5L



DIMENSIONS				
DIM	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