

General Description

The ECL2119 Series is a fixed frequency, constant current step-up DC/DC converter ideal for driving OLED. Output voltage of up to 22V can be derived, and from a li-ion battery supply ,the output voltage can be 12V drive OLED. A 2 ohm resistance of NMOS is integrated in the circuit , withstand voltage can support 22V, with a small SOT23-5 package saves PCB space and BOM cost.

Features

◆Input voltage range	2.7V—5.5V
◆Output voltage range	up to 22V
◆Oscillation frequency	1.0MHz±20%
◆Efficiency	88%
◆Control	PWM control
◆Stand-by Current	ISTB=1.0uA(MAX)
◆Load capacitor	10uF,ceramic
◆LX limit Current	600mA

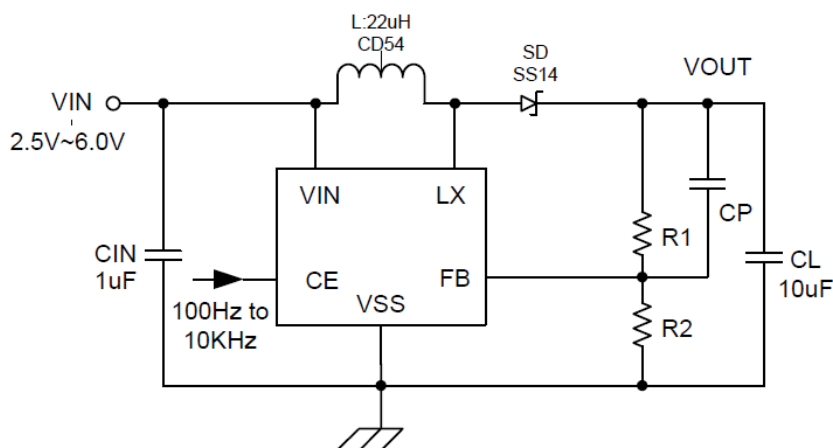
Applications

- ◆Mobil phones, PHS
- ◆PDAs
- ◆Digital still cameras

Package

- ◆SOT23-5L

Typical Application Circuit



$$\frac{V_{OUT}}{V_{FB}} = \frac{R1+R2}{R2}$$

Note: R1 and R2 can be adjusted by the voltage of VOUT and FB Pin; (when vout is equal to 12V, recommended resistor R1 = 875K, R2 = 100K, CP=100pF)

Ordering Information

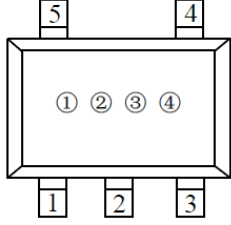
ECL2119 X XX X

Denotes Oscillation Frequency :
B : 1.0MHZ

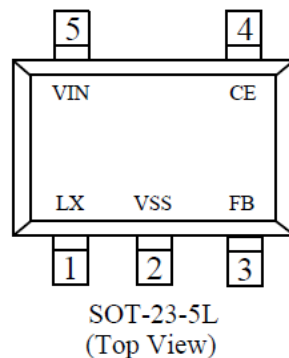
Embossed Tape :
R : Standard Feed
S : Reverse Feed

Package Type :
B2 : SOT23-5L

Marking Information

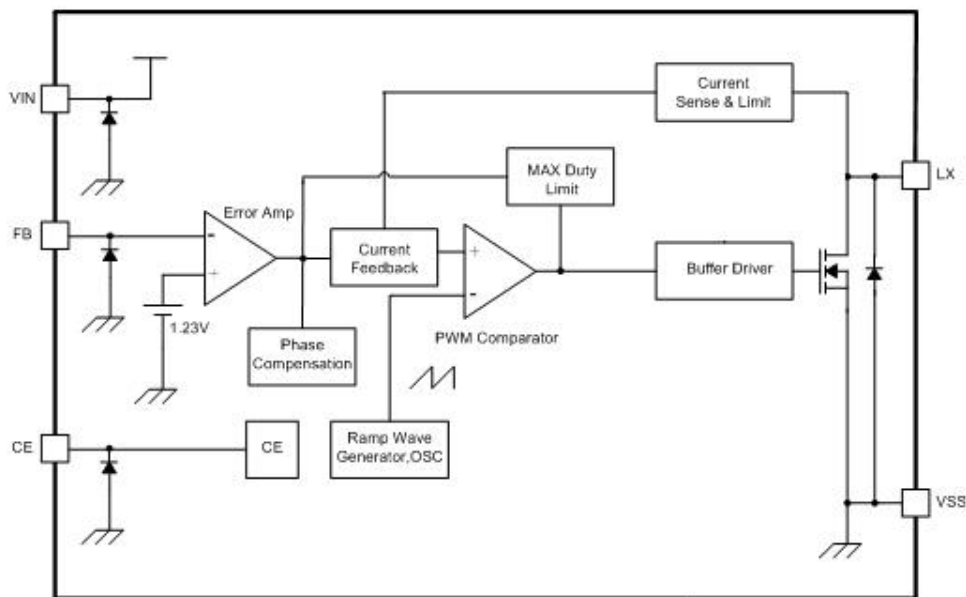
Part No	Package	Mark	Information
ECL2119BB2X	SOT23-5L	 SOT-23-5L (Top View)	① ECL2119=Z ② The output voltage of FB pin (V) : C=1.23 ③ Package Type : 3 ④ Assembly lot No : 0-9 , A-Z; 0-9 , A-Z mirror writing , repeated (G , I , J , O , Q , W exception)

Pin Configuration



Pin Number	Pin Name	Function
1	LX	Switch
2	VSS	Ground
3	FB	Voltage Feedback
4	CE	Chip Enable
5	VIN	Power Input

Function Block Diagram



Absolute Maximum Ratings

Item	Symbol		Absolute maximum ratings	Unit
VIN Pin Voltage	VIN		$V_{SS}-0.3 \sim V_{SS}+7$	V
LX Pin Voltage	VLX		$V_{SS}-0.3 \sim V_{SS}+22$	
FB Pin Voltage	VFB		$V_{SS}-0.3 \sim V_{SS}+7$	V
CE Pin Voltage	VCE		$V_{SS}-0.3 \sim V_{SS}+7$	V
LX Pin Current	ILX		600	mA
Power Dissipation	PD	SOT23-5	250	mW
Operating Temperature range	Topr		-40 ~ +85	°C
Storage Temperature range	Tstg		-55 ~ +125	



PWM Control Step-up DC/DC Converter

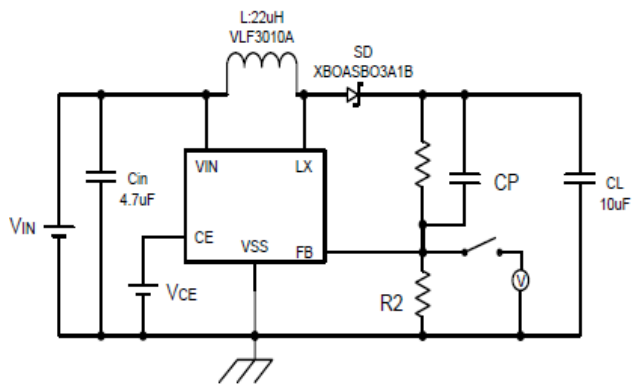
ECL2119

Electrical Characteristics Ta=25°C, unless otherwise noted

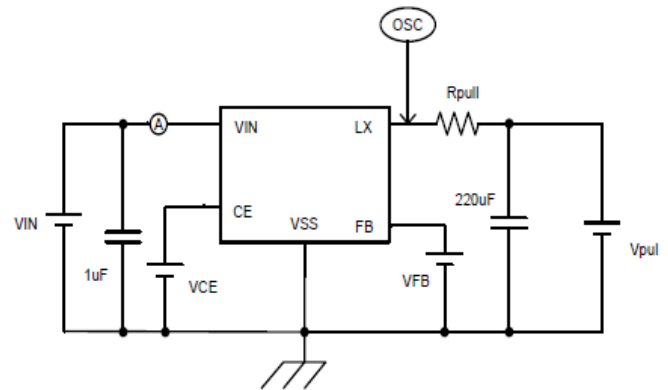
Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Circuits
FB Control Voltage	VFB	-	1.205	1.23	1.255	V	1
Output Voltage range	VOUT	-	VIN	-	22		
Lx Operating Voltage range	VLX		-	-	22		
Operating Voltage range	VIN		2.5	-	6		
Stand-by Current	ISTB	VCE=0V、VLX=5V	—		1	uA	3
Supply Current 1	IDD1		500	1200	1500	uA	2
Supply Current 2	IDD2	VIN=VLX、VFB=2V	—	90			3
Oscillation Frequency	FOSC		0.8	1.0	1.2	MHz	2
Maximum Duty Cycle	MAXDTY	VCONT=0.4V		75		%	2
Efficiency	EFFI	VIN=3.6V;RLED=20Ω	—	88	—	%	1
Current Limit	ILIM	VIN=3.6		600		mA	4
LX On Resistance		VIN=3.6V、VLX=0.4V		2.0		Ω	2
LX Leak Current	ILXL			0	1	uA	3
CE 'H' Voltage	VCEH		1.1			V	2
CE 'L' Voltage	VCEL				0.6	V	2
CE 'H' Current	ICEH	VIN=VLX、VFB=0.4V			0.1	uA	3
CE 'L' Current	ICEL	VCE=0V、VLX=5V			-0.1	uA	3
FB 'H' Current	ICEH	VIN=VLX、VFB=0.4V			0.1	uA	3
FB 'L' Current	ICEL	VCE=0V、VLX=5V			-0.1	uA	3

Test Circuits

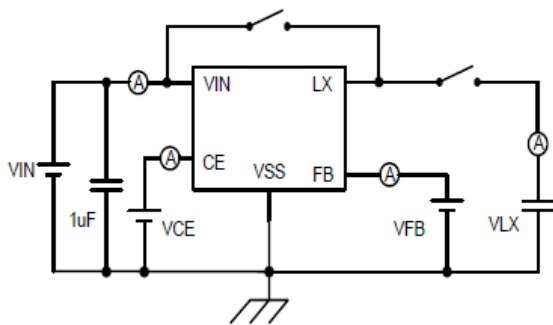
Circuit 1



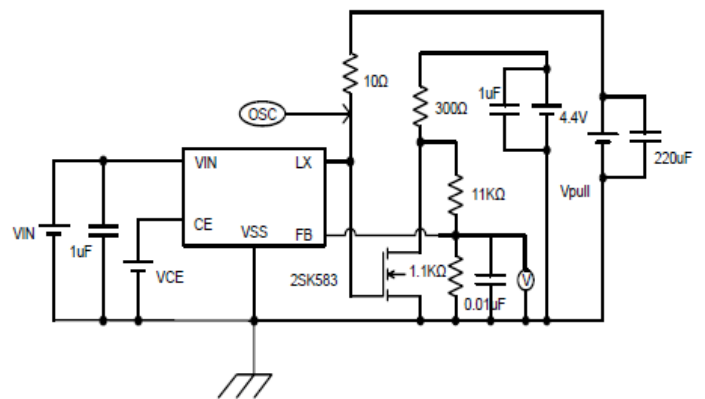
Circuit 2



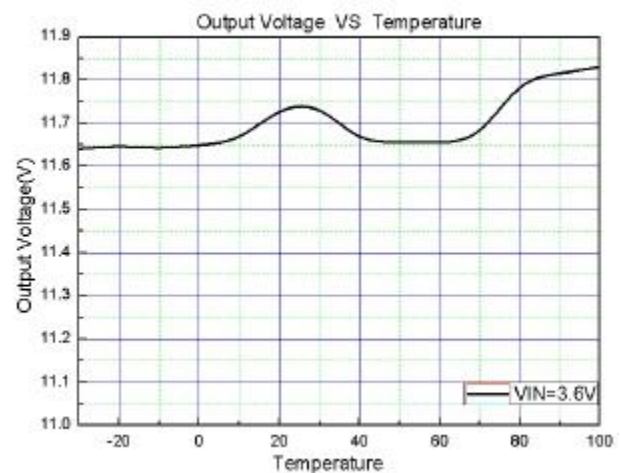
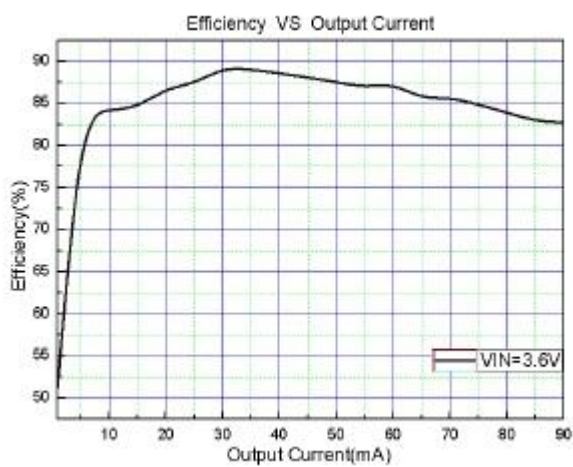
Circuit 3



Circuit 4

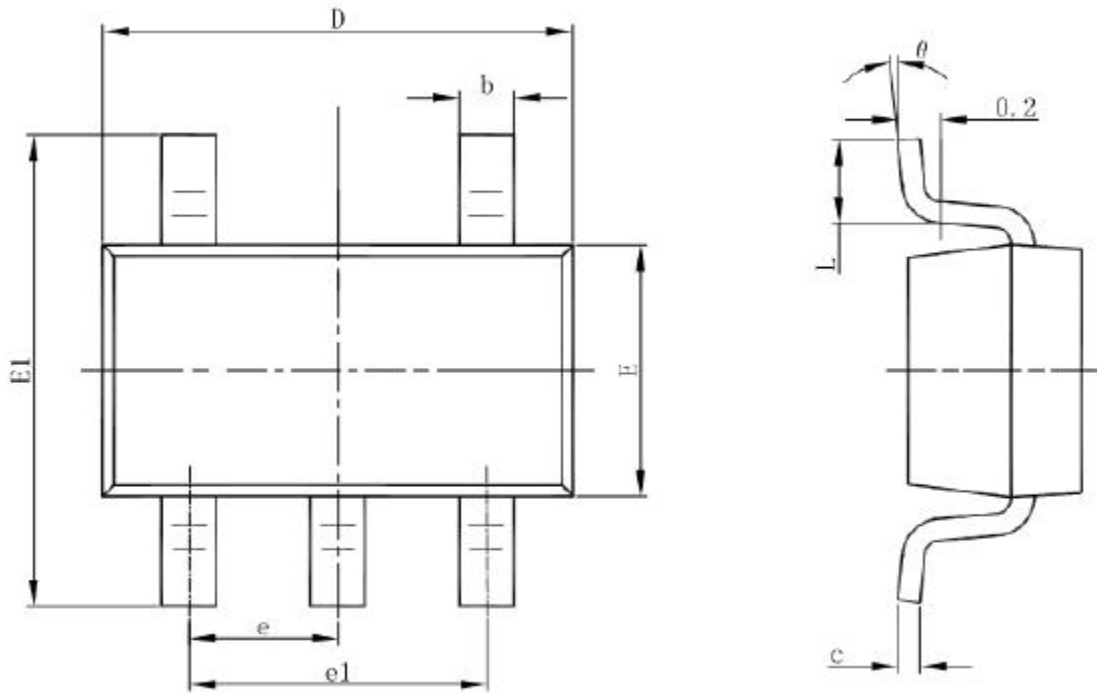


Typical Performance Characteristics



Package Information

SOP23-5L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°