

PWM/PFM Automatic Controlled DC-DC Converters—Backlight Driver

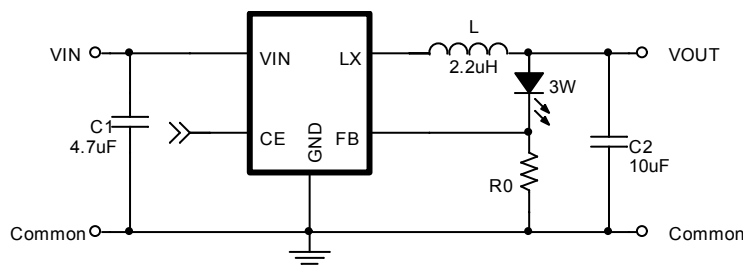
General Description

XT2401 series is a group of high efficiency synchronous-rectification type buck regulator using a constant frequency, current mode architecture. Automatic PWM/PFM mode operation increases efficiency and decreases output voltage ripple at light loads, further extending battery life. Switching frequency is internally set at 1.4MHz, allowing the use of small surface mount inductors and capacitors. 100% duty cycle provides low dropout operation.

Features

- High Efficiency: 92%
- Output Current: 800mA
- Shutdown Current: <1uA

Typical Application Circuit



Note: $I_{LED} = 0.1V/R0$

Ordering Information

XT2401 ①②③

Designator	Symbol	Description
①	A	$V_{FB}=0.1V$
②	N	Package Types: SOT-23-5L
③	R	Embossed Tape :Standard Feed
	S	Embossed Tape :Reverse Feed

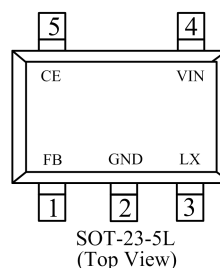
- Oscillation Frequency: 1.4MHz

Applications

- LED driver

Package

- SOT-23-5L

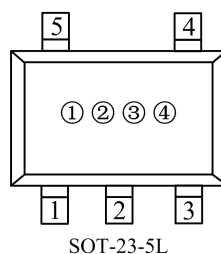


■ Functional Pin Description

SOT-23-5L(B)	Pin Name	Function
5	CE	Chip Enable Pin
2	GND	Common Ground
3	LX	Switching Output
4	VIN	Power Input
1	FB	Feedback Voltage Pin

■ Marking Rule

● SOT-23-5L



① Represents the product name

Symbol	Product Name
3	LN2401◆◆◆

② Represents the the feedback voltage

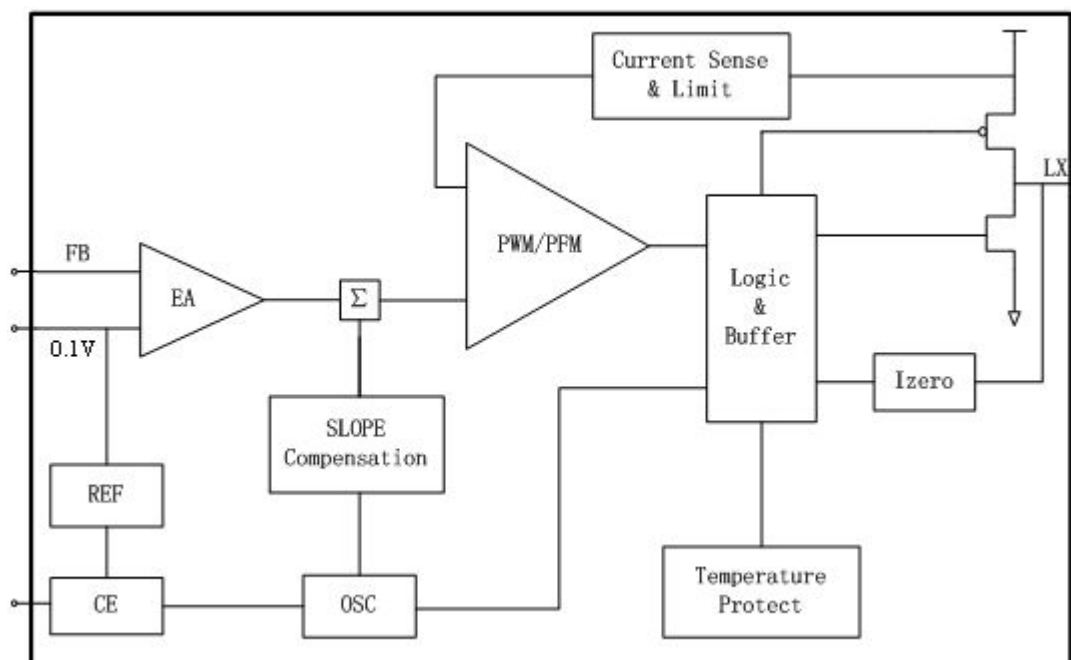
Designator	Symbol	Description
②	A	FB=0.1V

③ Represents the product package type

Designator	Symbol	Description
④	N	Package Types: SOT-23-5L

④ Represents the assembly lot No.

0-9, A-Z; 0-9, A-Z mirror writing, repeated (G, I, J, O, Q, W exception)



Parameter		Symbol	Ratings	Units
Input Supply Voltage		VIN	-0.3~6.5	V
Output Voltage		VOUT	-0.3~6.5	
		VLX	-0.3~VIN + 0.3	
CE Voltage		Vce	-0.3~VIN + 0.3	V
Peak LX Current		ILX	1200	mA
Power Dissipation	SOT-23-5L	Pd	250	mW
Operating Temperature Range		Topr	-40~+85	℃
Storage Temperature Range		Tstg	-55~+125	

■ Electrical Characteristics

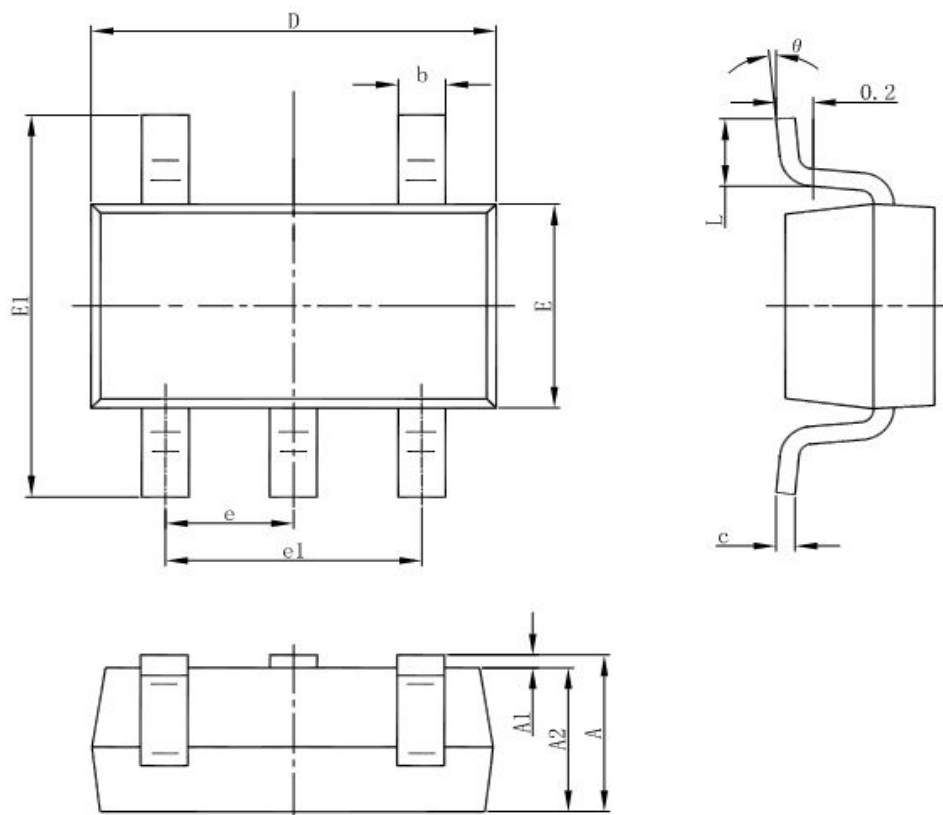
VIN=5V ,CIN=4.7uF ,COUT=10uF ,L=2.2uH

(Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	MIN	TYP	MAX	Units
Feedback Voltage	VFB	-	0.09	0.1	0.11	V
Input Voltage Range	VIN		2	-	6	
Line regulation	ΔV_{OUT}	IL=300mA		0.45		%
Efficiency	EFFI	IL=200mA	—	92	—	%
CE "Low" voltage	VCEL	-	0.9			V
CE "High" voltage	VCEH	-			1.1	V
Stand-by Current	ISTB	VCE=0V、VIN=5V	0	-	1	uA
Quiescent Current	IDD	VFB=0.1V*0.9	—	200	-	
Output Current Limit	ILIM	-	-	1200	-	mA
PFM switching point	IL			100		mA
Oscillation Frequency	FOSC		-	1.4	-	MHz
Maximum Duty Circle	MAXDTY	-	100	-	-	%

■ Package Information

● SOT-23-5L



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°