

Buck converter can drive single Cree XRE and XPE LED from three Ni-NH batteries or single Li-ion battery for battery power application such as torch and portable. It can provide 3V to 4V output voltage and up to 1000mA output current. State of art controller reduce circuit components count as well as simplified circuit design.



## ► FEATURES

- High efficiency, up to 95%
- Buck/ boost design
- High current output
- SMD reduce product size
- Low input voltage operation
- Low start up voltage and high current

## ► BENEFITS

- Enable long battery Life
- Parallel/ serial LED connectoin
- Low components count
- High frequency for compact size

## ► APPLICATIONS

- Torch
- Single-LED driver module
- Flash light
- Bike lighting
- Portable projector

## ► SUPPLIERS



Supplier	TI	TI	NS	ON Semi	ON Semi	ON Semi	Diodes	LTC	LTC	Fairchild
Part No.	TPS6210X	TPS63000 buck & boost	LM3405A	NCP1529	NCP3065 (buck configuration)	NCP5030 (buck-boost)	ZXLD1322	LTC3453 buck & boost	LTC3454 buck & boost	FAN5307
Min. Input Voltage	2.5V	1.8V	3V	2.7V	3V	2.7V	2.5V	2.7V	2.7V	2.5V
Max. Input Voltage	9V	5.5V	22V	7V	40V	5.5V	15V	5.5V	5.5V	5.5V
Max. Output Current	500mA	up to 1200mA	1A	Up to 1A	Up to 1.5A	Up to 0.9A	Up to 700mA	500mA	1A	up to 300mA
Output Voltage	0.8V - 8V	1.2 to 5.5V	up to 20V	0.9V - 3.9V	3V to 40V	3V to 5.5V	3V or above	5.15V	5.15V	0.7V to Vin
Est Efficiency	up to 90%	up to 96%	85 - 90%	Up to 95%	up to 85%	up to 85%	>85%	up to 90%	up to 90%	up to 95%
Switching Frequency	2.5Mhz Max	1.25MHz	1.6MHz	1.7MHz	150KHz	700KHz	350KHz	1MHz	1MHz	1MHz
Feedback Voltage	800mV	500mV	205mV	0.6V	235mV	200mV	10.5mV	Fix output	Fix output	0.5V
Built-in MOSFET	Yes (PMOS - 0.5/ 0.8 NMOS - 0.3/ 0.6)	Yes (not specify R <sub>dson</sub> )	Yes (300m Ohm NMOS)	Yes (HS - 0.4 Ohm, LS - 0.3 Ohm)	Yes (Bipolar power transistor)	Yes (100m Ohm)	Yes (build in BJT)	Yes (PMOS 0.3 Ohm/ NMOS 0.25 Ohm)	Yes (PMOS 170m Ohm/ NMOS130m Ohm)	Yes (PMOS - 0.53/ NMOS - 0.43)
Component Count	10	5	10	7	8	8	10	5	5	6
Package	SO-8	QFN-10	SOT23	TSOP-5	SOIC8 or DFN-8	DFN-12	DFN1443	QFN-16	DFN-10	SOT23-5
1K Pcs. Ref. Price (USD) **	2.00	2.20	1.00	0.35	0.25	0.77	1.37	2.00	1.80	0.99
Remark	4 selectable frequency (TPS6210X)	Auto switch to buck/ boost, integrated MOSFET for Syn Rect	Drives up to 1A with more than 1 LED, OCP and thermal shutdown	Integrated syn rectifier	High switching current up to 1.5A	Buck/ boost achieved by syn rect H-bridge	Buck/ boost, integrated BJT	Buck boost achieved by syn H-bridge	Buck boost achieved by syn H-bridge	Integrated MOSFET for syn rect

\* Green highlight means best in class

\*\* 1K pcs order price is for reference only. Please consult Arrow sales representative for quotation.