

# BlueChips Technology



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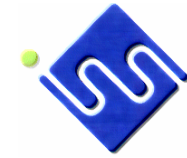
A Premier Design Solutions Company.....

## DC/DC Controller for 1W White LED BCT 3511S

Sep 2004

Solid State Lighting

# The Features: BCT 3511S



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Applications:	High Power White LED Torch, Head Lamp White LED Driver for Mobile Phone Handheld Electronics
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- ◆ Maximum output current: 350mA
- ◆ On chip DC/DC converter (switching capacitor with **NO coil**)
- ◆ Target low cost application where standard batteries are preferred (Input voltage range: from 1.8V to 3.6V)
- ◆ Two operation mode: Continuous or Flash:  
Enter flash mode without hardware switch (by power ON, OFF ->ON)
- ◆ SHDNB is used by  $\mu$ C to turn on/off the controller
- ◆ Internal thermal protection circuit
- ◆ Wide operation temperature: -20 to 70 deg C
- ◆ Available in SOP14 package

# System Advantages:

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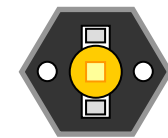
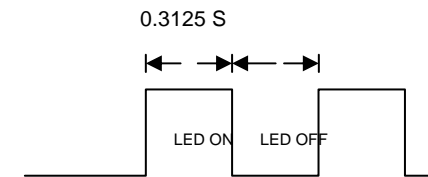
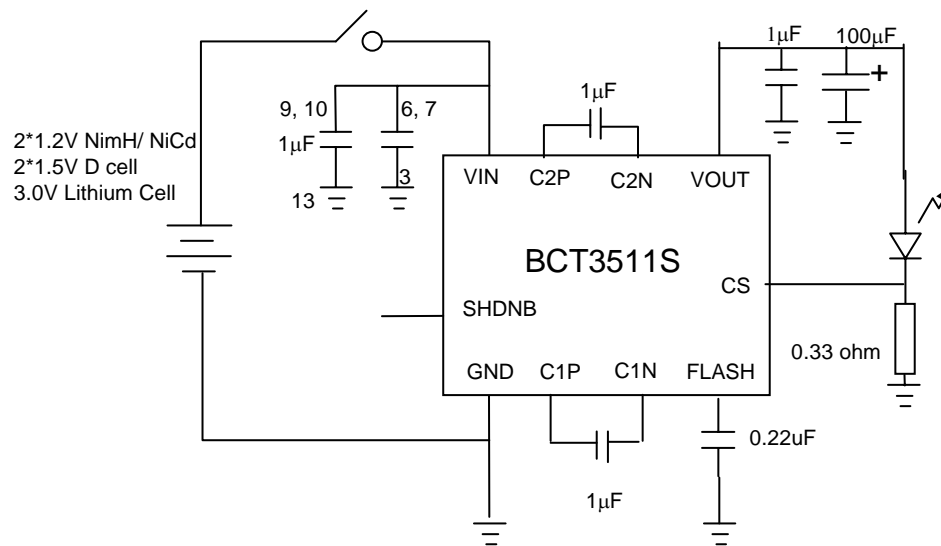
- ◆ High Output current (max. 350mA)
- ◆ Advanced Switching Capacitor Technologies
  - No external MOSFET/ BJT, Coil-less, no schottky diode, low EMI, in-expensive external components.
- ◆ Two Mode Operation: Continuous or Flash
  - Enter flash mode without hardware switch  
(by power ON, then OFF → ON within one second)
  - Not Standby mode
    - Minimize the risk of battery leakage and corrosion
- ◆ Multi source of LEDs
  - Current regulator (irrelevant to the LED forward voltage)
- ◆ High efficiency and lower power consumption
  - Extend the battery life

# BCT3511S Application

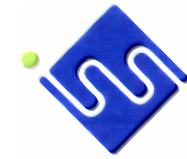


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1 watt LED



# BCT3511 vs PWM DC/DC

	<b>BCT3511 (Charge pump)</b>	<b>PWM DC/DC</b>
<b>Minimal External Components</b>	I. 2x 0805 1uF ceramic cap ~US0.01  II. Output Filter capacitor	I. External MOSFET / BJT ? ~US0.12 II. Choke (Though hole or SMT) ~US0.1 III. Schottky diode ~US0.08 IV. Input capacitor ~US0.02 V. Output Filter capacitor
<b>Operating Voltage</b>	1.8 ~ 3.6V	2.4 ~ 6V
<b>Switching frequency</b>	1MHz	100KHz ~ 500KHz
<b>Flash mode</b>	Continuous mode or flash mode (one external capacitor)	Not support
<b>Voltage / Current mode</b>	Current regulator (feedback voltage = 0.1V)	Voltage regulator (Step up and down) (Voltage adjustment for various LED, Power loss in series resistor)
<b>Thermal Protection</b>	Yes (@110 deg C)	May have
<b>EMI Interference</b>	Good, can be used in RF application	Noise
<b>Efficiency</b>	60 ~75 %	75 ~ 85%
<b>Package</b>	SOP14	SOP8
<b>System Cost</b>	\$\$\$	\$\$\$\$

# BCT 3511S Status

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- ◆ E/S: Available NOW
- ◆ Demo board: Available NOW
- ◆ Production: Now



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Thank You !  
Questions & Answer

