

# Faster Charging Power Bank Turn-Key Solutions



## Product Bulletin

### Overview

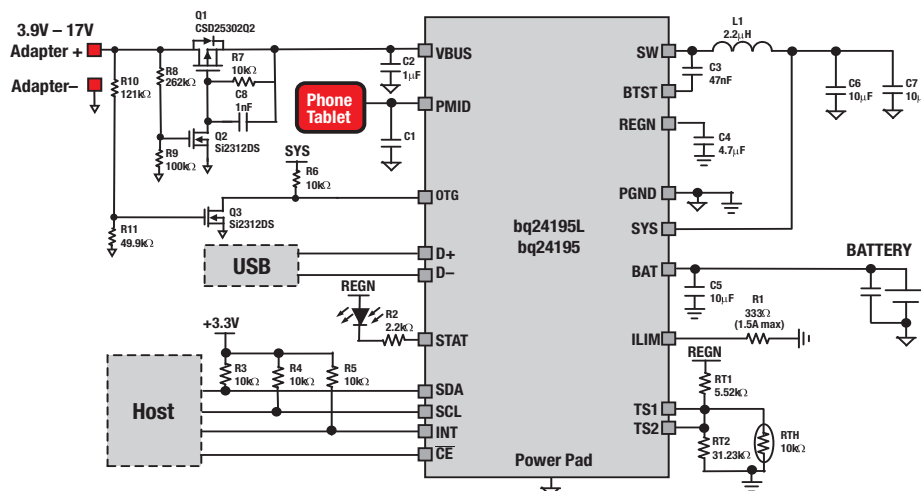
With smartphones becoming more mainstream in today's mobile market, the demand for power banks as a reliable charging option continues to increase. Conventional power banks have increased battery capacity from 2000 mAh to 10,000 mAh to provide more energy for mobile applications.

Traditional linear chargers can support up to 1A charging, but require roughly 11 hours to fully charge a 10,000 mAh battery. Enabling faster, more efficient charging has become a major trend in power bank designs.

TI's new bq24195 series of switching chargers supports 4.5A maximum charging current at high efficiency and significantly reduces charging time to 3.5 hours for a 10,000 mAh battery, more than 3X faster than existing solutions. The single power stage buck/boost topology can also reduce system cost when using different operation modes. The combination of these new features can help differentiate your power bank solution, while maintaining high performance. Evaluation tools and complete turn-key solutions speed the design process to get to market faster.

### Key Features

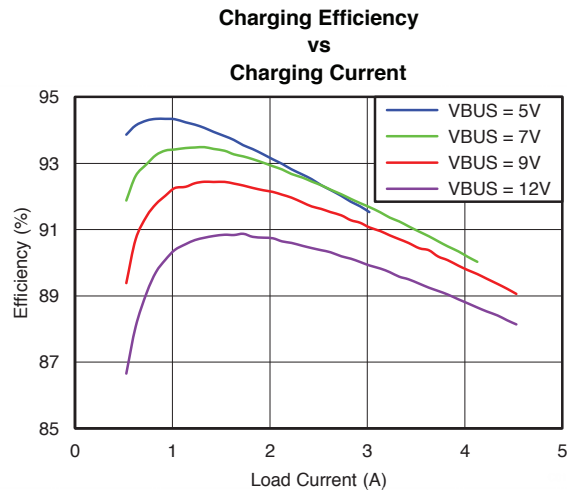
- Complete charger module EVM from TI
- Fast charging
  - BQ24195L, 2.5A, 92% efficiency at 2A
  - BQ24195, 4.5A, 90% efficiency at 4A
- Boosts output capability
  - BQ24195L, 94% efficiency at 5.1V / 1A
  - BQ24195, 91% efficiency at 5.1V / 2.1A
- Input voltage regulation ( $V_{IN}$  DPM) to support third party adapters
- 1.5 MHz switching frequency
- 12 mΩ BAT-SYS FET
- SYSOFF minimizes battery leakage
- D+ /D- detection
- Supports BC1.2
- USB 2.0 / 3.0 current limit support
- 4x4 mm QFN package



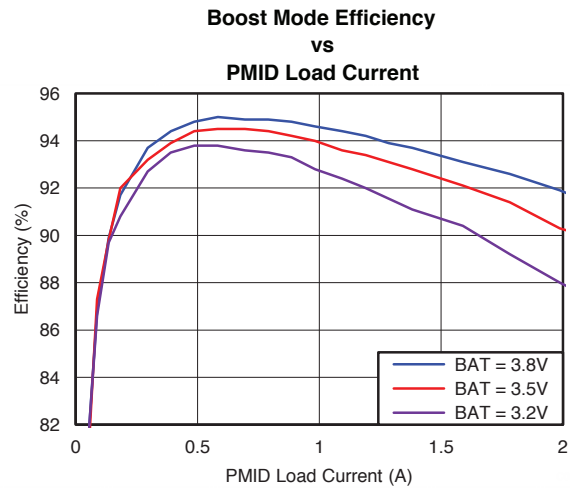
Recommended C1 (min) = 20 µF (bq24195L) or 6 µF (bq24195)

Application Schematic

# BQ24195 – Faster Charging Power Bank Solutions

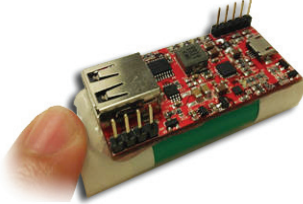
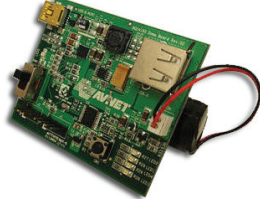

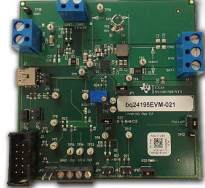


2.5A / 4.5A faster charging with bq24195.  
Up to 92% high charging efficiency with lower IC temperature.



Up to 94% high synchronous boost efficiency and longer battery run time.

## Power bank turn-key solutions

Tools	Board Image	Hardware BOM
<b>Avnet Prospect Board</b> Contact: Roger Hon <a href="mailto:roger.hon@avnet.com">roger.hon@avnet.com</a>		<ul style="list-style-type: none"> <li>• bq24195</li> <li>• MSP430G2332</li> <li>• TPS2511</li> <li>• TLV70030</li> <li>• CSD25302Q2</li> </ul>
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<b>Wintech Board</b> Contact: Ethan Huang <a href="mailto:ethan.huang@wtmec.com">ethan.huang@wtmec.com</a>		<ul style="list-style-type: none"> <li>• bq24195</li> <li>• MSP430G2432</li> <li>• bq27510</li> <li>• INA214</li> <li>• TLV70028</li> <li>• CSD25302Q2, CSD25401Q3</li> </ul>
<b>BQ24195/L Evaluation Module</b> <a href="http://www.ti.com/tool/bq24195evm">http://www.ti.com/tool/bq24195evm</a>		Features for TI EVM <ul style="list-style-type: none"> <li>• bq24195/L</li> <li>• HPA172 USB interface adapter</li> <li>• bq2419x GUI for evaluation</li> <li>• bq24195/L User Guide</li> </ul>

Visit [www.ti.com/product/bq24195](http://www.ti.com/product/bq24195) for more information and to order samples.

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