



# USB Power Bank

Electronic Components  
**KEMET**  
CHARGED.®

## Why Choose KEMET

KEMET Corporation is a leading global supplier of electronic components. We offer our customers the broadest selection of capacitor technologies in the industry, along with an expanding range of electromechanical devices, electromagnetic compatibility solutions and supercapacitors. Our vision is to be the preferred supplier of electronic component solutions for customers demanding the highest standards of quality, delivery and service.

## Trends

- Faster charging
- Increasing power
- Slim design
- Customizability

## Circuit Conditions

- Increasing humidity
- Operating temperature of 40°C – 70°C
- Input/output voltage of < 20 V/4.25 – 5.25 V
- Increasing temperature

## Capacitor Requirements

- Low profile
- Small footprint
- High capacitance
- High ripple current

## Applications

- EMI/RFI suppression
- Portable electronics
- Telecommunications
- High ripple current applications
- Microprocessors



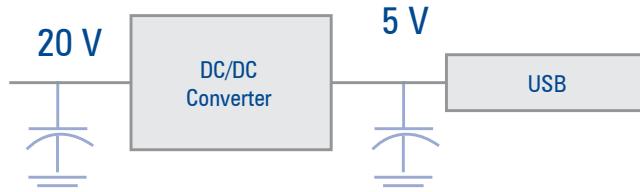
Polymer Capacitors

## Overview

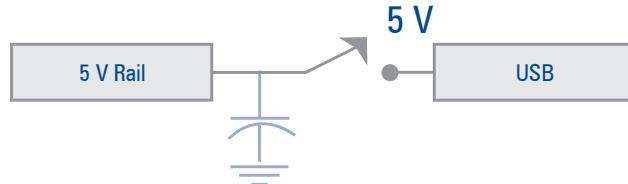
Chargers utilized in today's mobile devices have a well-defined output of approximately 5 V. The input, however, can run up to 20 V depending on the design. With mobile devices becoming increasingly power hungry, the need to maintain the rail voltage is critical, driving the need for higher bulk capacitance.

Chargers built into slim ultrabooks and hubs require slim capacitors. KEMET's T520 and T521 Polymer Series provide high capacitance at 5 V in a low profile. For designs with space to spare, X5R and X7R ceramic capacitors are additional options.

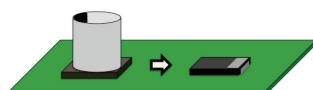
## 5 V Power Bank



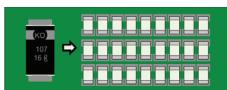
## Embedded USB Circuit



## Feature Highlights



Low Profile



High Capacitance

For more information, samples and engineering kits, please visit us at [www.kemet.com](http://www.kemet.com) or call 1.877.myKEMET.

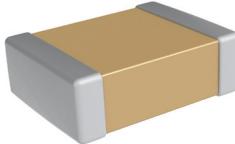


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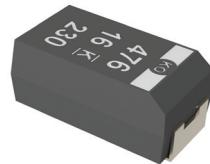
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## KEMET Products

Product Family	KEMET Series	Voltage (VDC)	Capacitance	Form Factor
<b>High Ripple/Low Inductance</b>				
Multilayer Ceramic	X7R	6.3 – 250	10 pF – 47 µF	Surface Mount
Low ESR Polymer	T520, T521	Up to 63	Up to 330 µF	Surface Mount
<b>Low ESR/ High Reliability</b>				
Low ESR Polymer	T520, T521	Up to 63	Up to 330 µF	Surface Mount
Low ESR/Inductance Polymer	T528	2 – 10	33 µF – 470 µF	Facedown Surface Mount



X7R



T520, T521

## Frequently Selected Part Numbers

Application Voltage	Series	Part Number	Capacitance (µF)	Voltage (VDC)	ESR (mΩ)	Ripple (A <sub>rms</sub> )	Case Size
5 V	T520	T520M157M006ATE035	150	6.3	35	1.6	3528-15
5 V	T520	T520B227M006ATE025	220	6.3	25	2.3	3528-20
20 V	T521	T521B156M025ATE090	15	25	90	1.0	3528-20

