

# 48V/12V DC/DC Converter - NEW

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# 48V/12V DC/DC Converter - NEW

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## Vishay Components used:

- Power MOSFETs
  - Diodes
  - Capacitors
  - Inductors/customized inductors
  - Transient Protection Devices
  - ESD Protection Devices
  - Reverse Polarity Protection Devices
  - Precision Resistors
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## Application Overview

With 48V battery line there will remain loads with 12V. For this reason future cars will have a central DC/DC converter bringing down 48V to 12V. Different topologies are possible as for example multiphase coupled and non-coupled inductors. For all topologies Vishay offer you a broad portfolio of solutions. With standard devices like MOSFETs, Diodes, Resistors, Capacitors and Inductors as well as with customized magnetic solutions.

## 48V/12V DC/DC Converter - NEW : 12V output, EMI Filter

### Al Cap

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">260 CLA-V</a>		Aluminum Capacitor SMD vibration proof high temperature	150...3300uF 16V...80V	16x16x16 to 18x18x21	AECQ200

### Inductors

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">IHL-3232DZ-5A</a>		Low Profile, High Current High Transient Current Spike Capable, Shielded, Low DCR	0,22uH...33uH, Idc=36A...3.1A	3232	AECQ200
<a href="#">IHL-4040DZ-5A</a>		Low Profile, High Current, High Transient Current Spike Capable Shielded, Low DCR	0,47uH...47uH, Idc=30A...2.5A	4040	AECQ200

### MLCC

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">VJ...31X RoHS</a> <a href="#">Automotive MLCC</a>		SMD MLCC for Automotive Applications	120pF...1uF 16V...1000V	0402 to 1812	AECQ200

## 48V/12V DC/DC Converter - NEW : 12V output, reverse polarity protection

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### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJQ402E</a>		N-Channel 40-V (D-S) 175°C MOSFET	Rdson=1.7mOhm	PPAK 8x8L	AECQ101

## 48V/12V DC/DC Converter - NEW : 12V output, security switch

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### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJQ402E</a>		N-Channel 40-V (D-S) 175°C MOSFET	Rdson=1.7mOhm	PPAK 8x8L	AECQ101

## 48V/12V DC/DC Converter - NEW : 12V output, transient protection

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### TVS Diode

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">TPSMP6.8</a> <a href="#">thru</a> <a href="#">TPSMP43A</a>		surface mounteTransZorb Transient Voltage Suppressor	250W	SMP	AECQ101

## 48V/12V DC/DC Converter - NEW : 48V input, EMI Filter

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### Al Cap

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">260 CLA-V</a>		Alumimum Capacitor SMD vibration proof high temperature	150...3300uF; 16V...80V	16x16x16 18x18x21	

### Custom Magnetics

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">customized EMI filter</a>		customized EMI filter			

### MLCC

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">VJ...31X RoHS</a> <a href="#">Automotive MLCC</a>		SMD MLCC for Automotive Applications	120pF...1uF; 16V...1000V	0402 to 1812	

## 48V/12V DC/DC Converter - NEW : 48V input, reverse polarity protection

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### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJQ410EL</a>		N-Channel 100-V (D-S) 175°C MOSFET	Rdson=3.4mOhm	PPAK 8x8L	AECQ101



## 48V/12V DC/DC Converter - NEW : 48V input, security switch

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### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJQ410EL</a>		N-Channel 100-V (D-S) 175°C MOSFET	Rdson=3.4mOhm	PPAK 8x8L	AECQ101

## 48V/12V DC/DC Converter - NEW : 48V input, transient protection

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### TVS Diode

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">1.5 SMC Series</a>		surface mounteTransZorb Transient Voltage Suppressor	1500W	SMCJ	

## 48V/12V DC/DC Converter - NEW : Bi directional synchronous buck boost converter, buffer capacitor

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Al Cap

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">260 CLA-V</a>		Alumimum Capacitor SMD vibration proof high temperature	150...3300uF 16V...80V	16x16x16 to 18x18x21	AECQ200

## 48V/12V DC/DC Converter - NEW : Bi directional synchronous buck boost converter, high side current sensor

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Shunt

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">WSLP2726</a>		Power metal strip resistor very high power	0.3mOhm...4mOhm	2726	AECQ200

## 48V/12V DC/DC Converter - NEW : Bi directional synchronous buck boost converter, high side switch

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### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJQ480E</a>		N-Channel 80-V (D-S) 175°C MOSFET	Rdson=3.4mOhm	PPAK 8x8L	AECQ101

## 48V/12V DC/DC Converter - NEW : Bi directional synchronous buck boost converter, low side current sensor

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Shunt

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">WSK1216</a>		Power metal strip resistor, very high power	0.5mOhm...1mOhm	1216	

## 48V/12V DC/DC Converter - NEW : Bi directional synchronous buck boost converter, low side switch

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### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJQ100E</a>		N-Channel 40-V (D-S) 175°C MOSFET	Rdson=1.4mOhm	PPAK 8x8L	AECQ101

## 48V/12V DC/DC Converter - NEW : Bi directional synchronous buck boost converter, storage inductor

### Custom Magnetics

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">custom magnetics</a>		customized coupled inductor			

### Inductors

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">IHLP-6767GZ-5A</a>		Low Profile, High Current High Transient Current Spike Capable Shielded, Low DCR	0,47uH...47uH Idc=65A...7.25A	6767	AECQ200
<a href="#">IHLP-8787MZ-5A</a>		Low Profile, High Current, High Transient Current Spike Capable, Shielded, Low DCR	0,47uH...100uH Idc=80A...9.1A	8787	AECQ200



## 48V/12V DC/DC Converter - NEW : power supply, SMPS buck converter

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### Inductors

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">IHLP2020CZ-5A</a>		Low Profile, High Current, High Transient Current Spike Capable Shielded, Low DCR	0,1uH...10uH, Idc=25A...2.25A	2020	AECQ200
<a href="#">IHLP2525CZ-5A</a>		Low Profile, High Current, High Transient Current Spike Capable, Shielded, Low DCR	0,1uH...4.7uH, Idc=18A...3A	2525	AECQ200

### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJQ480E</a>		N-Channel 80-V (D-S) 175°C MOSFET	Rdson=3.4mOhm	PPAK 8x8L	AECQ101

### Schottky Diode

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SS2P4</a>		High Current Density Surface Mount Schottky Barrier Rectifier	If=2A; Vf=0.5V; Vrrm=40V	DO-220AA (SMP)	AECQ101