



Vishay Intertechnology, Inc.

Automotive Full Electric Vehicles (FEVs)





Automotive

Full Electric
Vehicles (FEVs)

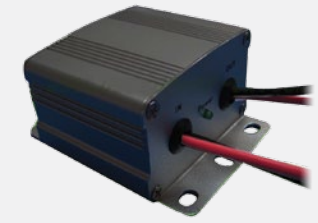
| | |
|--------------------------|---|
| Main Inverters | 4 |
| High-Voltage Bus Systems | 5 |
| Energy Recuperation | 6 |

The Engineer's Toolbox highlights, by market application, some innovative components Vishay manufactures that help design engineers develop superior end products. We recognize that offering unique component solutions helps improve the performance of next-generation devices, overcome technical barriers, and create new markets.

More information on the Engineer's Toolbox, including product datasheet links, can be found at www.vishay.com/ref/et2. For inquiries, please contact your local sales representative.



Key components for
**FULL ELECTRIC VEHICLES
(FEVs)**



CONVERTERS, BOOSTERS



BATTERY MANAGEMENT



CHARGERS

THE VISHAY ADVANTAGE
AEC Qualifications
High-Voltage Performance
Long Life
High Power Density
Customization
and more...



CHARGERS

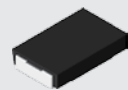
RESISTORS

WSRx

SMD, Power Metal Strip® Resistor

Features

- 2 W, 3 W, and 5 W versions of current sensing resistor in 4527 package size
- Features a very low 1 mΩ to 1 Ω resistance range
- Standard tolerance of 1.0 % with 0.5 % available
- High-temperature performance up to + 275 °C



RESISTORS

D2T035

Power Thick Film Resistor

Features

- TO-263 standard package
- AEC-Q200 qualified
- RoHS-compliant/high temperature capability
- High pulse capability up to 10 J short pulse



INDUCTORS

IHLP-5050FD-5A

Low-Profile, High-Current IHLP® Inductor

Features

- AEC-Q200 qualified
- Shielded construction
- Handles high transient current spikes without saturation
- Ultra-low buzz noise due to composite construction



MODULES

X Map IGBT Module

Up to 450 A, 600 V and 1200 V Trench IGBT Module

Features

- $T_J \text{ max} = 175 \text{ °C}$
- Customization of circuit topology, IGBT/MOSFET speed available
- Short circuit capability
- Symmetrical construction for even and low stray inductance



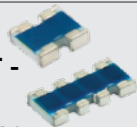
RESISTORS

ACAS 0606 AT, ACAS 0612 AT - Precision

Precision Thin Film Chip Resistor Arrays

Features

- TCR tracking down to 10 ppm/K ($\pm 5 \text{ ppm/K}$)
- Tolerance matching down to 0.1 % ($\pm 0.05 \text{ %}$)
- AEC-Q200 qualified
- Resistance ratio up to 1:20



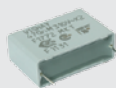
CAPACITORS

F1772-2 310 V-X2

Automotive Grade RFI X2 MKT Capacitor

Features

- High stability grade for continuous across-the-line X2 applications
- High reliability for continuous in series with the mains operation
- AC voltage: 310 V
- Operating temperature up to 110 °C



RESISTORS, NON-LINEAR

NTCALUG02

Low Thermal Gradient Lug NTC Thermistor

Features

- Thermal gradient: < 0.05 K/K
- AEC-Q200 qualified
- Low conducting nickel PEEK insulated leads AWG #30



MODULES

MTP

Up to 100 A, 600 V and 1200 V IGBT/MOSFET Module

Features

- 3500 V_{RMS} insulation voltage, circuit to external pin
- Customization of circuit topology, IGBT/MOSFET speed available
- Very low stray inductance design for high-speed operation
- Press-fit connection pins available soon



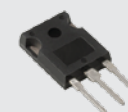
RECTIFIERS

HFA50PA60CPBF

HEXFRED® Ultrafast Soft Recovery Diode

Features

- Ultrafast and ultrasoft recovery
- Very low I_{RRM} and Q_{rr}
- RoHS-compliant
- Designed and qualified according to JEDEC-JESD47



DIODES

5KASMC

5000 W Surface-Mount PAR® TVS

Features

- Junction passivation optimized design passivated anisotropic rectifier technology
- $T_J = 185 \text{ °C}$ capability; suitable for high-reliability and automotive requirements
- Available in unidirectional polarity only
- 5000 W peak pulse power capability with 10/1000 μs waveform





Vishay Intertechnology, Inc.

BUILD VISHAY

into your **DESIGN**

