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Vishay Intertechnology, Inc.

Automotive

(Powertrain – Injection Control and Fuel Pump)



One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components





Powertrain – Injection Control and Fuel Pump

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More information on the Engineer's Toolbox, including product datasheet links, can be found at www.vishay.com/ref/et3.

For inquiries, please contact your local sales representative.

Key components for POWERTRAIN – INJECTION CONTROL AND FUEL PUMP



Direct Injector Control (Solenoid)



Piezo Injection Control



Fuel Pump Control



THE VISHAY ADVANTAGE

- AEC Qualifications
- High-Temperature Performance
- High Reliability
- Low Profile
- Long Life
- High-Voltage SMD

Direct Injector Control (Solenoid)



ALUMINUM CAPACITORS

Advanced Temperature Range Up to 150 °C

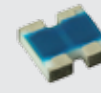


[160 CLA](#)

- High ripple current: up to 1.4 A at 150 °C / 100 kHz
- Useful life up to 2000 h at 150 °C

RESISTORS

Precision Thin Film Chip Resistor Array, Superior Moisture Resistivity

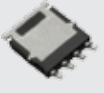


[ACAS...AT](#)

- Arbitrary resistance ratio up to 1:20, superior tracking stability over lifetime
- Relative TCR down to ± 5 ppm/K (tracking), AEC-Q200 qualified, sulfur resistant

MOSFETs

Automotive Dual N-Channel 75 V (D-S) 175 °C MOSFET



[SQJ986EP](#)

- Medium-voltage ThunderFET® technology, AEC-Q101 qualified, maximum $R_{DS(on)}$ 21 m Ω
- Thermally enhanced PowerPAK® SO-8L packaging

INDUCTORS

Low-Profile, High-Current IHLP® Inductors



[IHLP-2525CZ-5A](#)

- Excellent high-temperature performance for DC/DC converter input and output filters

RECTIFIERS

Ultrafast Rectifier, 1 A FRED Pt®



[1EFH02W](#)

- AEC-Q101 qualified, meets JESD 201 class 2 whisker test
- Ultrafast recovery time, reduced Q_{rr} and soft recovery with T_j maximum 175 °C

RESISTORS

Power Metal Strip® SMD Resistors, Very High Power (0.5 W), Low Value (Down to 0.005 Ω)



[WSLP0805](#)

- Very high power rating of 0.5 W in small 0805 package
- All-welded construction offers high pulse capacity

MOSFETs

Automotive N-Channel 100 V (D-S) 175 °C MOSFET



[SQJ488EP](#)

- 100 % UIS tested
- Thermally enhanced PowerPAK SO-8L packaging

RECTIFIERS

Ultrafast Rectifier, 3 A FRED Pt®



[3EJH02](#)

- Ultrafast recovery time, reduced Q_{rr} and soft recovery

TANTALUM CAPACITORS

Solid Tantalum Surface-Mount Chip Capacitors, TANTAMOUNT® Molded Case, Automotive Grade




[TP3](#)

- High-performance molded tantalum capacitor, AEC-Q200 qualified
- Applications: motor control, body electronics, dash board

Piezo Injection Control



RESISTORS

Professional High-Temperature MINI-MELF Resistor 

[MMA0204...HT](#)

- Operating temperature of 175 °C, power handling of 500 mW, high surge capability
- AEC-Q200 qualified, high overall stability < 0.1 %, sulfur resistant


MOSFETs

Automotive N-Channel 300 V (D-S) 175 °C MOSFET 

[SQD10N30-330H](#)

- Classic TrenchFET® technology, AEC-Q101 qualified, maximum $R_{DS(on)}$ 330 mΩ
- Popular DPAK packaging

CERAMIC CAPACITORS

AEC-Q200 Qualified, Broad Range of Sizes and Working Voltages, C0G (NP0), X7R, and X8R 

[VJ...31/VJ...34 Automotive MLCC](#)

- RoHS and GREEN compliant parts available
- AgPd termination available for epoxy bonding


RECTIFIERS

Ultrafast Rectifier, 6 A FRED Pt® 

[6ESU06](#)

- AEC-Q101 qualified, meets JESD 201 class 2 whisker test
- Ultrafast recovery time, reduced Q_{rr} and soft recovery with T_j maximum 175 °C


INDUCTORS

Low-Profile, High-Current IHLP® Inductors 

[IHLP-2525CZ-5A](#)

- Excellent high-temperature performance for DC/DC converter input and output filters

NON-LINEAR RESISTORS

SMD, Glass Protected NTC Thermistors 

[NTCS...e3](#)

- Standard series, AEC-Q200 compliant
- Glass protected with soft terminations

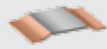
FILM CAPACITORS

DC Film Capacitors, MKT Radial Potted Type 

[MKT1820](#)

- Automotive general purpose MKT capacitor, with high-temperature capabilities
- Featuring capacitance up to 560 μF

RESISTORS

Power Metal Strip® SMD Resistors, Very High Power (to 9 W), Low Value (Down to 0.0002 Ω) 

[WSLP3921](#)

- Very low resistance values from 0.0002 Ω to 0.004 Ω, with tolerance of 1 %

ALUMINUM CAPACITORS

Radial Miniature, High Voltage 250 V_{DC} to 270 V_{DC} with C_R up to 220 μF 

[152 RMH](#)

- High-voltage applications, 105 °C long life
- Miniaturized, ultra high CV-product per unit volume

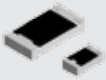
INDUCTORS

Low-Profile, High-Current IHLP® Inductors 

[IHLP-5050FD-5A](#)

- Excellent high-temperature performance and noise filtering

RESISTORS

Thick Film Surface-Mount Chip Resistors, Wraparound, Extremely Low Value 

[RCWE](#)

- Low resistance values from 0.01 Ω to 0.976 Ω and tolerance of 1 %
- Thick film construction with 2x power capacity

View datasheets for these products
www.vishay.com/ref/et3au2b

Fuel Pump Control



<p>MOSFETs</p> <p>Automotive N-Channel 40 V (D-S) 175 °C MOSFET</p> <p>SQJ422EP</p> <ul style="list-style-type: none"> • TrenchFET® Gen III technology, AEC-Q101 qualified, maximum $R_{DS(on)}$ 3.4 mΩ • Thermally enhanced PowerPAK® SO-8L packaging 	<p>CERAMIC CAPACITORS</p> <p>Radial Leaded Multilayer Ceramic Capacitors for Automotive Applications</p> <p>K...V</p> <ul style="list-style-type: none"> • High-reliability MLCC insert with wet build process • High operating temp. up to 160 °C, rated voltages: 50 V, 100 V, and 200 V 	<p>RECTIFIERS</p> <p>HEXFRED® Ultrafast Soft Recovery Diode, 30 A</p> <p>HFA30PB120PbF</p> <ul style="list-style-type: none"> • Very low I_{RRM} and Q_{rr} • Ultrafast and ultrasoft recovery 
<p>RESISTORS</p> <p>Power Metal Strip® SMD Resistors, Very High Power (to 9 W), Low Value (Down to 0.0002 Ω)</p> <p>WSLP3921</p> <ul style="list-style-type: none"> • High power rating of 5 W to 9 W in WSLP3921 package • Very low resistance values from 0.0002 Ω to 0.004 Ω, with tolerance of 1 % 	<p>RECTIFIERS</p> <p>High Current Density Surface-Mount Schottky Rectifiers</p> <p>SS3P4HM3</p> <ul style="list-style-type: none"> • AEC-Q101 qualified • Very low profile – typical height of 1.0 mm 	<p>NON-LINEAR RESISTORS</p> <p>SMD 0603, Glass Protected NTC Thermistors</p> <p>NTCS0603E3...T</p> <ul style="list-style-type: none"> • Standard series, AEC-Q200 compliant • Glass protected with soft terminations 
<p>DIODES</p> <p>Surface-Mount PAR® Transient Voltage Suppressors</p> <p>SM8S24A</p> <ul style="list-style-type: none"> • AEC-Q101 qualified • Meets ISO7637-2 surge specification (varied by test condition) 	<p>CERAMIC CAPACITORS</p> <p>AEC-Q200 Qualified, Broad Range of Sizes and Working Voltages, C0G (NP0), X7R, and X8R</p> <p>VJ...31/VJ...34 Automotive MLCC</p> <ul style="list-style-type: none"> • RoHS and GREEN compliant parts available • AgPd termination available for epoxy bonding 	<p>RECTIFIERS</p> <p>Ultrafast Rectifier, 3 A FRED Pt®</p> <p>3EJH02</p> <ul style="list-style-type: none"> • Ultrafast recovery time, reduced Q_{rr} and soft recovery • 175 °C maximum operating junction temperature and halogen-free 
<p>INDUCTORS</p> <p>Low-Profile, High-Current IHLP® Inductors</p> <p>IHLP-4040DZ-5A</p> <ul style="list-style-type: none"> • Excellent high-temperature performance and noise filtering 	<p>RECTIFIERS</p> <p>Ultrafast Rectifier, 1 A FRED Pt®</p> <p>1EFH02W</p> <ul style="list-style-type: none"> • AEC-Q101 qualified, meets JESD 201 class 2 whisker test • Ultrafast recovery time, reduced Q_{rr} and soft recovery with T_j maximum 175 °C 	<p>RESISTORS</p> <p>Power Metal Strip® SMD Resistors, Very High Power (3 W), Low Value (to 0.0005 Ω)</p> <p>WSLP2512</p> <ul style="list-style-type: none"> • Very high power rating of 3 W in 2512 package • Extremely low resistance values from 0.0005 Ω to 0.01 Ω and tolerance of 1 % 

View datasheets for these products
www.vishay.com/ref/et3au2c



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ABOUT TTI, INC.

TTI Inc., a subsidiary of Berkshire Hathaway, is a world leading specialist distributor of connectors and passive, electromechanical and discrete components. TTI's philosophy is "Lead by Design", and the company differentiates itself by focusing on people, parts and processes. The company's aim is to become the distributor of choice for customers and suppliers in Europe alike by introducing new product technologies and by stocking broad and deep across its franchise base. TTI employs sophisticated inventory management processes which ensure that the company can react immediately to changes in component demand due to fluctuating markets and supply chains. For further information about TTI, please refer to: www.ttieurope.com.



A **WORLD OF**
SOLUTIONS

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