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Vishay Intertechnology, Inc.

# Automotive

(Body Electronics)



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





**Automotive**

Body Electronics

Comfort, Door, Window Controls	2
Infotainment, Navigation, Audio	3
Interior LED Lighting	4

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

For inquiries, please contact your local sales representative.

## Key components for BODY ELECTRONICS



**Comfort, Door,  
Window Controls**



**Infotainment,  
Navigation, Audio**



**Interior  
LED Lighting**




### **THE VISHAY ADVANTAGE**

- AEC Qualifications
- High Power Density
- Low Profile
- Durability
- Customization




# Comfort, Door, Window Controls




**MOSFETs**  
**Automotive N-Channel 40 V (D-S) 175 °C MOSFET**   
[SQJ858AEP](#)  


- TrenchFET® Gen III technology, AEC-Q101 qualified, maximum  $R_{DS(on)}$  6.3 mΩ
- Thermally enhanced PowerPAK® SO-8L packaging

**RESISTORS**  
**Pulse-Proof, High-Power Thick Film Chip Resistors**   
[CRCW...HP e3](#)  


- Excellent pulse load capability
- Enhanced power rating

**RECTIFIERS**  
**High Current Density Surface-Mount Schottky Barrier Rectifiers**   
[SS3P4L](#)  


- AEC-Q101 qualified
- Very low profile – typical height of 1.0 mm

**RESISTORS**  
**Thick Film Surface-Mount Chip Resistors, Wraparound and Extremely Low Value**   
[RCWE](#)  


- Low resistance values from 0.01 Ω to 0.99 Ω and tolerance of 1 %
- Thick film construction with 2x power capacity

**DIODES**  
**Surface-Mount PAR® Transient Voltage Suppressors for Automotive Load Dump Applications**   
[SMxS24A](#)  

- AEC-Q101 qualified
- Meets ISO7637-2 surge specification (varied by test condition)

**INDUCTORS**  
**Low-Profile, High-Current IHLP® Inductors**   
[IHLP-4040DZ-5A](#)  


- Excellent high-current performance for noise filters

**OPTOELECTRONICS**  
**Subminiature Dual-Channel Transmissive Optical Sensor with Phototransistor Outputs**   
[TCUT1350X01](#)  

- Resolve direction and speed with dual-channel transmissive (interrupter) sensor
- Wide operating temperature range from -40 °C to +125 °C

**TANTALUM CAPACITORS**  
**Solid Tantalum Chip Capacitors, High CV Leadframeless Molded, Automotive Grade**   
[TP8](#)  


- Smallest AEC-Q200-qualified tantalum capacitor with case sizes as small as 0603
- Perfect for space-constrained designs

**MOSFETs**  
**Automotive Dual N-Channel 40 V (D-S) 175 °C MOSFET**   
[SQJ912AEP](#)  


- TrenchFET® Gen III technology, AEC-Q101 qualified, maximum  $R_{DS(on)}$  9.3 mΩ
- Thermally enhanced PowerPAK® SO-8L packaging

**RESISTORS**  
**Precision Thin Film Chip Resistor Array, Superior Moisture Resistivity**   
[ACAS0606 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

**OPTOELECTRONICS**  
**Ambient Light Sensor with High-Speed and High-Sensitivity PIN Photodiode Output**   
[TEMD6200FX01](#)  

- Wavelength of peak sensitivity of 550 nm; similar to human eye sensitivity
- Excellent linearity over operating temperature range of -40 °C to +100 °C

**NON-LINEAR RESISTORS**  
**SMD 0603, Glass Protected NTC Thermistors**   
[NTCS6030E3...T](#)  

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

View datasheets for these products [www.vishay.com/ref/et3au4a](http://www.vishay.com/ref/et3au4a)

# Infotainment, Navigation, Audio



TANTALUM CAPACITORS

**Solid Tantalum Chip Capacitors, High CV Leadframeless Molded, Automotive Grade**




[TP8](#)

- Smallest AEC-Q200-qualified tantalum capacitor with case sizes as small as 0603
- Perfect for space-constrained designs

RECTIFIERS

**Surface-Mount Schottky Barrier Rectifiers**




[MSS1P4](#)

- Very low profile – typical height of 0.65 mm
- AEC-Q101 qualified

INDUCTORS

**Low-Profile, High-Current IHLP® Inductors**




[IHLP-4040DZ-5A](#)

- High current, low DCR, low saturation for excellent noise suppression
- High temperature up to 155 °C, shielded construction

INDUCTORS

**Dual Inductor Using IHLP® High-Temperature (155 °C) Automotive Grade Part**




[IHLD-4032KB-5A](#)

- Optimal design realizes high-quality sound and low distortion
- Low coupling for minimal cross-talk between inductors

DIODES

**Surface-Mount PAR® Transient Voltage Suppressors for Automotive Load Dump Applications**




[SMxS24A](#)

- AEC-Q101 qualified
- Meets ISO7637-2 surge specification (varied by test condition)

NON-LINEAR RESISTORS

**SMD 0603, Glass Protected NTC Thermistors**




[NTCS6030E3...T](#)

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

RESISTORS

**Precision Thin Film Chip Resistor Array, Superior Moisture Resistivity**




[ACAS0606 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

ALUMINUM CAPACITORS

**Aluminum Capacitors SMD (Chip), High-Temperature, Low Impedance**

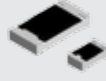


[146 CTI](#)

- High temperature up to 125 °C, long life, low impedance, high ripple current
- Soldering according to JEDEC-J-STD-020

RESISTORS

**Thick Film Surface-Mount Chip Resistors, Wraparound and 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

OPTOELECTRONICS

**Amber, Red, and Yellow LED in a PLCC-2 Plus Package with High Luminous Intensity**




[VLMK51Z1AA](#)

- Amber color has wavelength of 610 nm to 621 nm
- Compact package 3.5 mm x 3.5 mm x 1.2 mm

MOSFETS

**Automotive Dual N-Channel 40 V (D-S) 175 °C MOSFETs**




[SQJ942EP](#)

- TrenchFET® Gen III technology, AEC-Q101 qualified, maximum  $R_{DS(on)}$  11 mΩ
- Thermally enhanced PowerPAK® SO-8L packaging

OPTOELECTRONICS

**Ambient Light Sensor in Miniature 0805 Package with Phototransistor Output**



[TEMT6200FX01](#)

- Wavelength of peak sensitivity of 550 nm; similar to human eye sensitivity
- Excellent linearity over operating temperature range of -40 °C to +100 °C

View datasheets for these products  
[www.vishay.com/ref/et3au4b](http://www.vishay.com/ref/et3au4b)

# Interior LED Lighting


**DIODES**

**Surface-Mount PAR® Transient Voltage Suppressors**



[TPSMB](#)

- AEC-Q101 qualified,  $T_j = 185\text{ °C}$  capability suitable for automotive requirement
- 600 W peak pulse power capability with a 10/1000  $\mu\text{s}$  waveform

**RESISTORS**

**Power Metal Strip® SMD Resistors, Very High Power (to 3 W), Low Value (to 0.0005  $\Omega$ )**



[WSLP](#)

- Very high power rating to 3 W in WSLP0603 to WSLP2512 size packages
- Extremely low resistance values from 0.0005  $\Omega$  to 0.1  $\Omega$  and tolerance of 1 %

**OPTOELECTRONICS**

**Little Star® 1 W Power SMD LED**



[VLMK71ABAD](#)

- Red, amber, and yellow colors with luminous intensity up to 18 000 mcd
- Amber color has wavelength of 610 nm to 621 nm

**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**

**Surface-Mount Schottky Barrier Rectifiers**



[MSS1P4](#)

- Very low profile – typical height of 0.65 mm
- AEC-Q101 qualified

**INDUCTORS**

**Low-Profile, High-Current IHLP® Inductors**



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

- Compact size and high current, low saturation for noise filtering

**MOSFETs**

**Automotive N-Channel 30 V (D-S) 175 °C MOSFET**



[SQS482EN](#)

- Classic TrenchFET® technology, AEC-Q101 qualified, maximum  $R_{DS(on)}$  8.5 m $\Omega$
- Thermally enhanced PowerPAK® 1212-8 is 1/3 the size of an SO-8

**RESISTORS**

**Pulse-Proof, High-Power Thick Film Chip Resistors**



[CRCW...HP e3](#)

- Excellent pulse load capability
- Enhanced power rating

**DIODES**

**Surface-Mount PAR® Transient Voltage Suppressors**



[TPSMA](#)

- AEC-Q101 qualified,  $T_j = 185\text{ °C}$  capability suitable for automotive requirement
- 400 W peak pulse power capability with a 10/1000  $\mu\text{s}$  waveform

**NON-LINEAR RESISTORS**

**SMD 0603, Glass Protected NTC Thermistors**



[NTCS6030E3...T](#)

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

**MOSFETs**

**Automotive N-Channel 40 V (D-S) 175 °C MOSFET**



[SQS840EN](#)

- Classic TrenchFET technology, AEC-Q101 qualified, maximum  $R_{DS(on)}$  16.6 m $\Omega$
- Thermally enhanced PowerPAK 1212-8 is 1/3 the size of an SO-8

**TANTALUM CAPACITORS**

**Solid Tantalum Chip Capacitors, High CV Leadframeless Molded, Automotive Grade**



[TP8](#)

- Smallest AEC-Q200-qualified tantalum capacitor with case sizes as small as 0603
- Perfect for space-constrained designs

View datasheets for these products  
[www.vishay.com/ref/et3au4c](http://www.vishay.com/ref/et3au4c)





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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](http://www.ttieurope.com).



**A *WORLD OF***  
***SOLUTIONS***

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