

# VISHAY

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Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
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Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	



**All products listed  
in this brochure are  
AEC-Q101 qualified**



### Engine Vehicle Control Unit – 12 V / 24 V

- 3** Engine Cooling
- 5** Exhaust Control Systems

### Powertrain – Injection Control and Fuel Pump

- 8** Direct Injector Control
- 10** Piezo Injection Control
- 12** Fuel Pump Control

### Chassis Control

- 15** Electric Power Steering (BLDC Motor Drive)
- 17** Transmission ECU, Double Clutch BLDC

### Body Electronics

- 20** Comfort, Door, Window Controls
- 22** Infotainment, Navigation, Audio
- 24** Interior LED Lighting

### Active Safety

- 27** Enhanced Electrical Braking (EEB)
- 29** Electronic Stability Program (ESP)
- 31** Vehicle Stability Control (VSC)
- 33** Electrical Parking Brake (EPB)
- 35** Integrated Parking Brake (IPB)
- 37** Advanced Driver Assistance System (ADAS)

### Passive Safety

- 40** Airbag Control Systems
- 42** Restraint System Power Supplies
- 44** Pedestrian Protection Systems

### Exterior Lighting

- 47** LED Headlight Units
- 49** Day Lighting
- 51** LED Fog Lighting
- 53** Rear and Signal LED Lights

### 48 VDC Boardnet

- 56** Integrated Starter Generators (48 VDC)
- 58** DC/DC Converters, Bidirectional (48 VDC)
- 60** HVAC (E-Compressor for 48 VDC)

### Full Hybrid Vehicles (HEVs)

- 63** Electrical Motor Drives (DC/AC)

### Full Electric Vehicles (FEVs)

- 66** Electrical Motor Drives (DC/AC)
- 68** Battery Management and DC/DC
- 70** On-Board Chargers

### Networks

- 73** CAN BUS, LIN BUS, FLEX BUS



ENGINE VEHICLE CONTROL UNIT – 12 V / 24 V

**ENGINE COOLING**

**EXHAUST CONTROL SYSTEMS**



# ENGINE VEHICLE CONTROL UNIT – 12 V / 24 V ENGINE COOLING



## Schottky Rectifiers



**V20DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A, 120 V for freewheeling and high frequency rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## Ultrafast Rectifiers



**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 4$  A, 200 V for high frequency switching, 22 ns recovery,  $T_{jmax} = 175$  °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile

## Standard Rectifiers



**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space

## Ultrafast Rectifiers



**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 8$  A, 200 V for high frequency switching, 27 ns recovery,  $T_{jmax} = 175$  °C
- SMPD (TO-263AC) package with 1.3 mm low profile

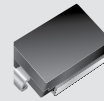
## Standard Rectifiers



**SE10F Series** – Miniature-Package Rectifiers for Rail to Rail Signal Line Protection

- High ESD voltage and surge current capability
- Compatible with SOD-123 pad layout and package size

## TVS



**SM8S10AT thru SM8S43AT** – High Power TVS for Main Load Dump Suppression for Rail to Rail Signal Line Protection

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers



**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains

## Ultrafast Rectifiers



**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery,  $T_{jmax} = 175$  °C
- SMF (TO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges

## Ultrafast Rectifiers



**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 3$  A, 200 V for high frequency switching, 25 ns recovery,  $T_{jmax} = 175$  °C
- SMPC (TO-277A) package with 1.1 mm low profile

## Small Signal Switching Diodes



**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# ENGINE VEHICLE CONTROL UNIT – 12 V / 24 V ENGINE COOLING



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 A, 200 V for high frequency switching, 20 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SlimSMA (DO-221AC) package with 1 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5\%$
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# ENGINE VEHICLE CONTROL UNIT – 12 V / 24 V EXHAUST CONTROL SYSTEMS



## Schottky Rectifiers

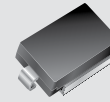
**V8PAM12HM3** – High Current Density, High Voltage Schottky Rectifiers

- 8 A, 120 V for freewheeling and high frequency rectification
- SMPA (DO-221BC) package with 0.95 mm low profile

## TVS

**SM5S10AT thru SM5S43AT** – High Power TVS for Main Load Dump Suppression

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Schottky Rectifiers

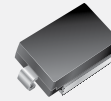
**V20DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A, 120 V for freewheeling and high frequency rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS

**SM6S10AT thru SM6S43AT** – High Power TVS for Main Load Dump Suppression

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**MSX1P Series** – Miniature Rectifiers With High ESD Capability for Rail to Rail Signal Line and Power line Protection

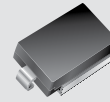
- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SM8S10AT thru SM8S43AT** – High Power TVS for Main Load Dump Suppression

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE10F Series** – Miniature-Package Rectifiers for Rail to Rail Signal Line Protection

- High ESD voltage and surge current capability
- Compatible with SOD-123 pad layout and package size



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout

## Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



## Ultrafast Rectifiers

**AU3P Series** – High Current Density Ultrafast Rectifiers With High Avalanche Capability

- 3 A, up to 1 kV 20 mJ avalanche capability with fast switching characteristics
- SMPC (TO-277A) package with low profile of 1.1 mm



## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes





# ENGINE VEHICLE CONTROL UNIT – 12 V / 24 V EXHAUST CONTROL SYSTEMS



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5$  %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable





POWERTRAIN – INJECTION CONTROL AND FUEL PUMP

**DIRECT INJECTOR CONTROL**

**PIEZO INJECTION CONTROL**

**FUEL PUMP CONTROL**



# POWERTRAIN – INJECTION CONTROL AND FUEL PUMP DIRECT INJECTOR CONTROL



## Schottky Rectifiers

**SS8PH9HM3, SS8PH10HM3** – High Current Density, High Voltage Schottky Rectifiers

- 8 A, 100 V for freewheeling and high frequency rectification
- SMPC (TO-277A) package with 1.1 mm low profile



## Schottky Rectifiers

**V8PAM12HM3** – High Current Density, High Voltage Schottky Rectifiers

- 8 A, 120 V for freewheeling and high frequency rectification
- SMPA (DO-221BC) package with low profile of 0.95 mm



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## Ultrafast Rectifiers

**AU3P Series** – High Current Density Ultrafast Rectifiers With High Avalanche Capability

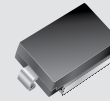
- 2 A, 200 V fast-switching rectifier for high frequency applications, 20 mJ high avalanche capability, and 75 ns fast switching characteristics
- SMPC (TO-277A) package with low profile of 1.1 mm



## Ultrafast Rectifiers

**ESH2P Series** – Ultrafast Rectifiers With Wide Operating Temperature Range

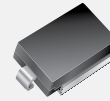
- 2 A, 200 V fast switching rectifier for high frequency applications, 20 mJ high avalanche capability, and 75 ns fast switching characteristics
- SMP (DO-220AA) package with high operating temperature to +175 °C



## TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

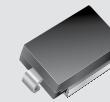
- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SM6S10A thru SM6S36A** – High Power Density Uni-Directional TVS for Power Line Load Dump

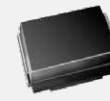
- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Small Signal Schottky Diodes

**BAT54** – Single and Dual Construction Protect Against Excessive Voltage

- Very low turn-on voltage and fast switching
- PN junction guard ring protects against excessive voltage, such as electrostatic discharges



## Small Signal Switching Diodes

**BAV23C** – Fast Switching Dual Diode With Common Cathode

- Silicon epitaxial planar diode



# POWERTRAIN – INJECTION CONTROL AND FUEL PUMP DIRECT INJECTOR CONTROL



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 % ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# POWERTRAIN – INJECTION CONTROL AND FUEL PUMP PIEZO INJECTION CONTROL



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## Ultrafast Rectifiers

**AU3P Series** – High Current Density Ultrafast Rectifiers With High Avalanche Capability

- 2 A, 200 V fast-switching rectifier for high frequency applications, 20 mJ high avalanche capability, and 75 ns fast switching characteristics
- SMPC (TO-277A) package with low profile of 1.1 mm



## Ultrafast Rectifiers

**ESH2P Series** – Ultrafast Rectifiers With Wide Operating Temperature Range

- 2 A, 200 V fast switching rectifier for high frequency applications, 20 mJ high avalanche capability, and 75 ns fast switching characteristics
- SMP (DO-220AA) package with high operating temperature to +175 °C



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

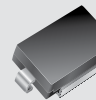
- 2 × 3 A, 200 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



### Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



### Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



### Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



### Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



### Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



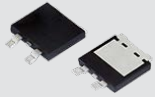
### Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- 500 mW power dissipation, excellent thermal characteristics, R<sub>thJA</sub> 130 k/W
- Symmetrical leads are wave and reflow solderable



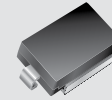
# POWERTRAIN – INJECTION CONTROL AND FUEL PUMP FUEL PUMP CONTROL



## Schottky Rectifiers

**V35DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 35 A, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile



## TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Schottky Rectifiers

**V35PWM10HM3** – High Current Density, High Voltage Schottky Rectifiers

- 35 A, 100 V Schottky rectifiers for freewheeling and rectification
- SlimDPAK (TO-252AE) package with 1.3 mm low profile; 120 V and 150 V types available



## TVS

**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

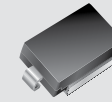
- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

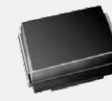
- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, T<sub>jmax</sub> = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Small Signal Schottky Diodes

**BAT54** – Single and Dual Construction Protect Against Excessive Voltage

- Very low turn-on voltage and fast switching
- PN junction guard ring protects against excessive voltage, such as electrostatic discharges



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 2 A, 200 V for high frequency switching, 20 ns recovery, T<sub>jmax</sub> = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Small Signal Switching Diodes

**BAV23C** – Fast Switching Dual Diode With Common Cathode

- Silicon epitaxial planar diode



# POWERTRAIN – INJECTION CONTROL AND FUEL PUMP FUEL PUMP CONTROL



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

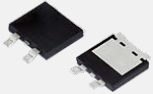
- 2 × 3 A, 200 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- Symmetrical leads are wave and reflow solderable



CHASSIS CONTROL

**ELECTRIC POWER STEERING (BLDC MOTOR DRIVE)  
TRANSMISSION ECU, DOUBLE CLUTCH BLDC**





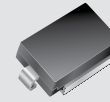
## Schottky Rectifiers



**V35DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 35 A, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

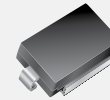
## Schottky Rectifiers



**V60D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 30 A × 2, 100 V Schottky rectifiers for freewheeling and high frequency rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers

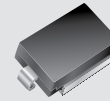


**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers



**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, 3 A current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains

## Ultrafast Rectifiers



**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SMF (DO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes

## Ultrafast Rectifiers



**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes



**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



# CHASSIS CONTROL ELECTRIC POWER STEERING (BLDC MOTOR DRIVE)



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPD (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



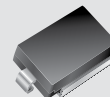
## Schottky Rectifiers



**V35DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 35 A, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Schottky Rectifiers



**V60D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 30 A × 2, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers

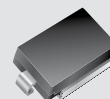


**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers



**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains

## Ultrafast Rectifiers



**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges

## Ultrafast Rectifiers



**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes



**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# CHASSIS CONTROL TRANSMISSION ECU, DOUBLE CLUTCH BLDC



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

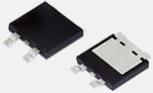
- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPD (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



BODY ELECTRONICS

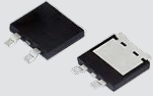
**COMFORT, DOOR, WINDOW CONTROLS**

**INFOTAINMENT, NAVIGATION, AUDIO**

**INTERIOR LED LIGHTING**



# BODY ELECTRONICS COMFORT, DOOR, WINDOW CONTROLS

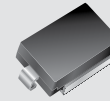


## Schottky Rectifiers

**V20DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A, 120 V for freewheeling and high frequency rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

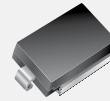


## Schottky Rectifiers

**V35PWM10HM3** – High Current Density, High Voltage Schottky Rectifiers

- 35 A, 100 V Schottky rectifiers for freewheeling and rectification
- SlimDPAK (TO-252AE) package with 1.3 mm low profile; 120 V and 150 V types available

## TVS



**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



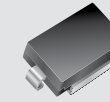
## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, T<sub>jmax</sub> = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes



## Ultrafast Rectifiers

**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, T<sub>jmax</sub> = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes



**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



# BODY ELECTRONICS COMFORT, DOOR, WINDOW CONTROLS



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPD (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



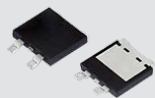
## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# BODY ELECTRONICS INFOTAINMENT, NAVIGATION, AUDIO



## Schottky Rectifiers

**V40D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A × 2, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Schottky Rectifiers

**VSSAF5M10HM3** – High Current Density, High Voltage Schottky Rectifiers

- 5 A, 100 V Schottky Rectifiers for freewheeling and rectification
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm

## TVS

**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm

## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode





# BODY ELECTRONICS INFOTAINMENT, NAVIGATION, AUDIO



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching , 25 ns recovery, Tjmax = 175 °C
- SMPD (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# BODY ELECTRONICS INTERIOR LED LIGHTING



## Schottky Rectifiers

**VSSAF5M6HM3** – High Current Density, High Voltage  
TMBS® Rectifier

- 5 A, 60 V Schottky rectifiers, high temperature, low leakage, high current density
- SlimSMA (DO-221AC) package with low profile of 0.95 mm and compatible pad layout to SMA (DO-220AC)



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## TVS

**TPSMA Series** – Surface-Mount PAR® Transient Voltage Suppressor With Wide Operating Temperature Range

- 400 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle) of 0.01 % up to 43 V breakdown voltage
- SMA (DO-214AC) package



## TVS

**TPSMB Series** – Surface-Mount PAR® Transient Voltage Suppressor With Wide Operating Temperature Range

- 600 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle) of 0.01 % ; up to 43 V breakdown voltage
- SMB (DO-214AA) package



## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring bullet
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes



## Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



# BODY ELECTRONICS INTERIOR LED LIGHTING



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5$  %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



## ACTIVE SAFETY

**ENHANCED ELECTRICAL BRAKING (EEB)**

**ELECTRONIC STABILITY PROGRAM (ESP)**

**VEHICLE STABILITY CONTROL (VSC)**

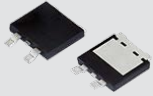
**ELECTRICAL PARKING BRAKE (EPB)**

**INTEGRATED PARKING BRAKE (IPB)**

**ADVANCED DRIVER ASSISTANCE SYSTEM (ADAS)**



# ACTIVE SAFETY ENHANCED ELECTRICAL BRAKING (EEB)

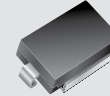


## Schottky Rectifiers

**V20DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A , 120 V for freewheeling and high frequency rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

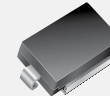


## Schottky Rectifiers

**V40D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A × 2, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) miniature package with 1.8 mm low profile

## TVS



**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



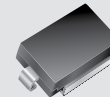
## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

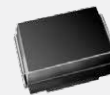


## Ultrafast Rectifiers

**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

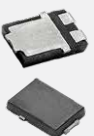
- 3 A, 100 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Schottky Diodes



**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile

## Small Signal Switching Diodes



**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



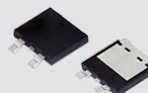
# ACTIVE SAFETY ENHANCED ELECTRICAL BRAKING (EEB)



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

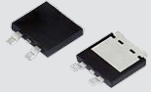
- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# ACTIVE SAFETY ELECTRONIC STABILITY PROGRAM (ESP)



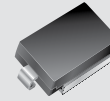
## Schottky Rectifiers



**V40D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A × 2, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

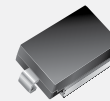
## Schottky Rectifiers



**V60D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 30 A × 2, 100 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers

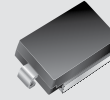


**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers



**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains

## Ultrafast Rectifiers



**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, T<sub>jmax</sub> = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges

## Ultrafast Rectifiers



**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, T<sub>jmax</sub> = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes



**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# ACTIVE SAFETY ELECTRONIC STABILITY PROGRAM (ESP)



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPD (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile llet



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable





# ACTIVE SAFETY VEHICLE STABILITY CONTROL (VSC)



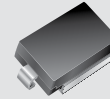
## Schottky Rectifiers



**V20DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A , 120 V for freewheeling and high frequency rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM5S10AT thru SM5S43AT** – High Power TVS for Main Load Dump Suppression

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

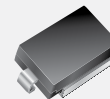
## Schottky Rectifiers



**V40D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A × 2, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM6S10AT thru SM6S43AT** – High Power TVS for Main Load Dump Suppression

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers

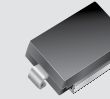


**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power TVS for Main Load Dump Suppression for Rail to Rail Signal Line Protection

- 8000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

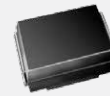
## Standard Rectifiers



**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains

## Ultrafast Rectifiers



**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**BAT54** – Single and Dual Construction Protect Against Excessive Voltage

- Very low turn-on voltage and fast switching
- PN junction guard ring protects against excessive voltage, such as electrostatic discharges

## Ultrafast Rectifiers



**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes



**BAV23C** – Fast Switching Dual Diode with Common Cathode

- Silicon epitaxial planar diode



# ACTIVE SAFETY VEHICLE STABILITY CONTROL (VSC)



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

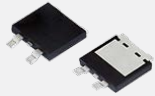
- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

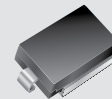
- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



### Schottky Rectifiers

**V35PWM10HM3** – High Current Density, High Voltage Schottky Rectifiers

- 35 A, 100 V Schottky rectifiers for freewheeling and rectification
- SlimDPAK (TO-252AE) package with 1.3 mm low profile; 120 V and 150 V types available



### TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

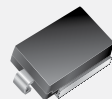
- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



### Schottky Rectifiers

**V40D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 20 A × 2, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile



### TVS

**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

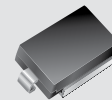
- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



### Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



### TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



### Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



### TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



### Ultrafast Rectifiers

**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile



### Small Signal Schottky Diodes

**BAT54** – Single and Dual Construction Protect Against Excessive Voltage

- Very low turn-on voltage and fast switching
- PN junction guard ring protects against excessive voltage, such as electrostatic discharges



### Ultrafast Rectifiers

**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



### Small Signal Switching Diodes

**BAV23C** – Fast Switching Dual Diode With Common Cathode

- Silicon epitaxial planar diode



### Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPD (TO-277A) package with 1.1 mm low profile



### Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



### Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



### Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



### Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



### Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



### Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



### Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# ACTIVE SAFETY INTEGRATED PARKING BRAKE (IPB)



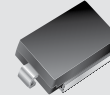
## Schottky Rectifiers



**V35DM120HM3** – High Current Density, High Voltage Schottky Rectifiers

- 35 A, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

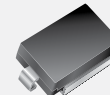
## Schottky Rectifiers



**V60D100CHM3** – High Current Density, High Voltage Schottky Rectifiers

- 30 A x 2, 120 V Schottky rectifiers for freewheeling and rectification
- SMPD (TO-263AC) package with 1.8 mm low profile

## TVS



**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers

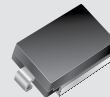


**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

## Standard Rectifiers



**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains

## Ultrafast Rectifiers



**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, T<sub>jmax</sub> = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**BAT54** – Single and Dual Construction Protect Against Excessive Voltage

- Very low turn-on voltage and fast switching
- PN junction guard ring protects against excessive voltage, such as electrostatic discharges

## Ultrafast Rectifiers



**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, T<sub>jmax</sub> = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes



**BAV23C** – Fast Switching Dual Diode with Common Cathode

- Silicon epitaxial planar diode



# ACTIVE SAFETY INTEGRATED PARKING BRAKE (IPB)



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



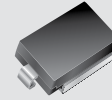
# ACTIVE SAFETY ADVANCED DRIVER ASSISTANCE SYSTEM (ADAS)



## Schottky Rectifiers

**V20PWM10HM3** – High Current Density, High Voltage TMBS® Rectifier

- 20 A, 100 V low leakage Schottky rectifiers for freewheeling and rectification
- SlimDPAK (TO-252AE) package with low profile of 1.3 mm



## TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

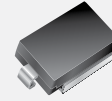
- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Schottky Rectifiers

**VSSAF5M10HM3** – High Current Density, High Voltage Schottky Rectifiers

- 5 A, 100 V Schottky rectifiers for freewheeling and rectification
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## TVS

**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

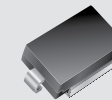
- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

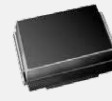
- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-1EFH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile



## Small Signal Schottky Diodes

**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges



## Ultrafast Rectifiers

**VS-2EJH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Small Signal Switching Diodes

**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# ACTIVE SAFETY ADVANCED DRIVER ASSISTANCE SYSTEM (ADAS)



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

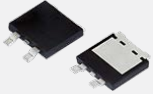
- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable





PASSIVE SAFETY

**AIRBAG CONTROL SYSTEMS**

**RESTRAINT SYSTEM POWER SUPPLIES**

**PEDESTRIAN PROTECTION SYSTEMS**



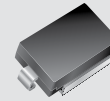
# PASSIVE SAFETY AIRBAG CONTROL SYSTEMS



## Schottky Rectifiers

**V20PWM10HM3** – High Current Density, High Voltage TMBS® Rectifier

- 20 A, 100 V low leakage Schottky rectifiers for freewheeling and rectification
- SlimDPAK (TO-252AE) package with low profile of 1.3 mm



## TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Schottky Rectifiers

**VSSAF5M6HM3** – High Current Density, High Voltage TMBS® Rectifier

- 5 A, 60 V Schottky rectifiers, high temperature, low leakage, high current density
- SlimSMA (DO-221AC) package with low profile of 0.95 mm and compatible pad layout to SMA (DO-220AC)



## TVS

**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

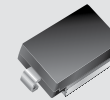
- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

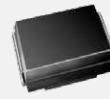
- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



# PASSIVE SAFETY AIRBAG CONTROL SYSTEMS



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

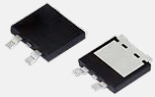
- $2 \times 3$  A, 200 V for high frequency switching, 25 ns recovery,  $T_{jmax} = 175$  °C
- SMPD (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 4$  A, 200 V for high frequency switching, 22 ns recovery,  $T_{jmax} = 175$  °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 8$  A, 200 V for high frequency switching, 27 ns recovery,  $T_{jmax} = 175$  °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5$  %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable

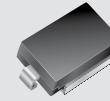


## Schottky Rectifiers

**V20PWM10HM3** – High Current Density, High Voltage  
TMBS® Rectifier

- 20 A, 100 V low leakage Schottky rectifiers for freewheeling and rectification
- SlimDPAK (TO-252AE) package with low profile of 1.3 mm

## TVS



**SM5S10AT thru SM5S43AT** – High Power Density  
Uni-Directional TVS for Power Line Load Dump

- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling

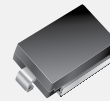


## Schottky Rectifiers

**VSSAF5M6HM3** – High Current Density, High Voltage  
TMBS® Rectifier

- 5 A, 60 V Schottky rectifiers, high temperature, low leakage, high current density
- SlimSMA (DO-221AC) package with low profile of 0.95 mm and compatible pad layout to SMA (DO-220AC)

## TVS



**SM6S10AT thru SM6S43AT** – High Power Density  
Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



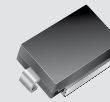
## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With  
High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS



**SM8S10AT thru SM8S43AT** – High Power Density  
Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With  
High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm

## TVS



**SMC3K Series** – High Power Density Bidirectional TVS  
for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-1EFH01HM3** – High Current Density, Soft Recovery,  
FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile

## Small Signal Schottky Diodes



**BAT46W** – Small Signal Schottky and Switching Diodes in  
SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges



## Ultrafast Rectifiers

**VS-2EJH01HM3** – High Current Density, Soft Recovery,  
FRED Pt® Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile

## Small Signal Switching Diodes



**1N4448W** – Small Signal Schottky and Switching Diodes  
in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# PASSIVE SAFETY RESTRAINT SYSTEM POWER SUPPLIES



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPD (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# PASSIVE SAFETY PEDESTRIAN PROTECTION SYSTEMS



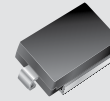
BUY NOW



## Schottky Rectifiers

**V20PWM10HM3** – High Current Density, High Voltage  
TMBS® Rectifier

- 20 A, 100 V low leakage Schottky rectifiers for freewheeling and rectification
- SlimDPAK (TO-252AE) package with low profile of 1.3 mm



## TVS

**SM5S10AT thru SM5S43AT** – High Power Density  
Uni-Directional TVS for Power Line Load Dump

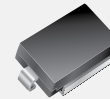
- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Schottky Rectifiers

**VSSAF5M6HM3** – High Current Density, High Voltage  
TMBS® Rectifier

- 5 A, 60 V Schottky rectifiers, high temperature, low leakage, high current density
- SlimSMA (DO-221AC) package with low profile of 0.95 mm and compatible pad layout to SMA (DO-220AC)



## TVS

**SM6S10AT thru SM6S43AT** – High Power Density  
Uni-Directional TVS for Power Line Load Dump

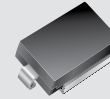
- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With  
High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density  
Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With  
High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS  
for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-1EFH01HM3** – High Current Density, Soft Recovery,  
FRED Pt® Ultrafast Diode

- 1 A, 100 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (DO-219AB) package with < 1 mm low profile



## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic  
Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes



## Ultrafast Rectifiers

**VS-2EJH01HM3** – High Current Density, Soft Recovery,  
FRED Pt® Ultrafast Diode

- 3 A, 100 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for  
General Purpose

- Silicon epitaxial planar diode



# PASSIVE SAFETY PEDESTRIAN PROTECTION SYSTEMS



## Ultrafast Rectifiers

**VS-6CSH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

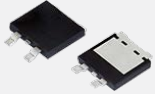
- 2 × 3 A, 100 V for high frequency switching, 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH01HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 100 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



EXTERIOR LIGHTING

**LED HEADLIGHT UNITS**

**DAY LIGHTING**

**LED FOG LIGHTING**

**REAR AND SIGNAL LED LIGHTS**





# EXTERIOR LIGHTING LED HEADLIGHT UNITS



## Schottky Rectifiers

**V8PAM12HM3** – High Current Density, High Voltage Schottky Rectifiers

- 8 A, 120 V for freewheeling and high frequency rectification
- SMPA (DO-221BC) package with low profile of 0.95 mm



## Schottky Rectifiers

**V10P10HM3** – High Current Density, High Voltage TMBS<sup>®</sup> Rectifier

- 10 A, 100 V for freewheeling and high frequency rectification
- SMPC (TO-277A) package with low profile of 1.1 mm



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching , 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## TVS

**TPSMA Series** – Surface-Mount PAR<sup>®</sup> Transient Voltage Suppressor With Wide Operating Temperature Range

- 400 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle) of 0.01 %; up to 43 V breakdown voltage
- SMA (DO-214AC) package



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring bullet
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



# EXTERIOR LIGHTING LED HEADLIGHT UNITS



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



### Schottky Rectifiers

**V8PAM12HM3** – High Current Density, High Voltage Schottky Rectifiers

- 8 A, 120 V for freewheeling and high frequency rectification
- SMPA (DO-221BC) package with low profile of 0.95 mm



### Schottky Rectifiers

**VSSAF5M6HM3** – High Current Density, High Voltage TMBS<sup>®</sup> Rectifier

- 5 A, 60 V Schottky rectifiers, high temperature, low leakage, high current density
- SlimSMA (DO-221AC) package with low profile of 0.95 mm and compatible pad layout to SMA (DO-220AC)



### Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



### Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



### Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, T<sub>jmax</sub> = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



### Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, T<sub>jmax</sub> = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



### Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching, 25 ns recovery, T<sub>jmax</sub> = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



### Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt<sup>®</sup> Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, T<sub>jmax</sub> = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



### TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



### TVS

**TPSMA Series** – Surface-Mount PAR<sup>®</sup> Transient Voltage Suppressor With Wide Operating Temperature Range

- 400 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle) of 0.01 %; up to 43 V breakdown voltage
- SMA (DO-214AC) package



### Small Signal Schottky Diodes

**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges



### Small Signal Switching Diodes

**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode





## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# EXTERIOR LIGHTING LED FOG LIGHTING



## Schottky Rectifiers

**V8PAM12HM3** – High Current Density, High Voltage Schottky Rectifiers

- 8 A, 120 V for freewheeling and high frequency rectification
- SMPA (DO-221BC) package with low profile of 0.95 mm



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching , 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Schottky Rectifiers

**VSSAF5M6HM3** – High Current Density, High Voltage TMBS® Rectifier

- 5 A, 60 V Schottky rectifiers, high temperature, low leakage, high current density
- SlimSMA (DO-221AC) package with low profile of 0.95 mm and compatible pad layout to SMA (DO-220AC)



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

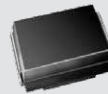
- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## TVS

**TPSMA Series** – Surface-Mount PAR® Transient Voltage Suppressor With Wide Operating Temperature Range

- 400 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle) of 0.01 %; up to 43 V breakdown voltage
- SMA (DO-214AC) package



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Small Signal Schottky Diodes

**BAT54** – Single and Dual Construction Protect Against Excessive Voltage

- Very low turn-on voltage and fast switching
- PN junction guard ring protects against excessive voltage, such as electrostatic discharges



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Small Signal Switching Diodes

**BAV23C** – Fast Switching Dual Diode With Common Cathode

- Silicon epitaxial planar diode



# EXTERIOR LIGHTING LED FOG LIGHTING



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# EXTERIOR LIGHTING REAR AND SIGNAL LED LIGHTS



## Schottky Rectifiers

**V8PAM12HM3** – High Current Density, High Voltage Schottky Rectifiers

- 8 A, 120 V for freewheeling and high frequency rectification
- SMPA (DO-221BC) package with low profile of 0.95 mm



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching , 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Schottky Rectifiers

**VSSAF5M6HM3** – High Current Density, High Voltage TMBS® Rectifier

- 5 A, 60 V Schottky rectifiers, high temperature, low leakage, high current density
- SlimSMA (DO-221AC) package with low profile of 0.95 mm and compatible pad layout to SMA (DO-220AC)



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## TVS

**TPSMA Series** – Surface-Mount PAR® Transient Voltage Suppressor With Wide Operating Temperature Range

- 400 W peak pulse power capability with a 10/1000 µs waveform, repetitive rate (duty cycle) of 0.01 %; up to 43 V breakdown voltage
- SMA (DO-214AC) package



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## TVS

**TPSMB Series** – Surface-Mount PAR® Transient Voltage Suppressor With Wide Operating Temperature Range

- 600 W peak pulse power capability with a 10/1000 µs waveform, repetitive rate (duty cycle) of 0.01 % up to 43 V breakdown voltage
- SMB (DO-214AA) package



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Small Signal Schottky Diodes

**BAT54** – Single and Dual Construction Protect Against Excessive Voltage

- Very low turn-on voltage and fast switching
- PN junction guard ring protects against excessive voltage, such as electrostatic discharges



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Small Signal Switching Diodes

**BAV23C** – Fast Switching Dual Diode With Common Cathode

- Silicon epitaxial planar diode



# EXTERIOR LIGHTING REAR AND SIGNAL LED LIGHTS



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable





48 VDC BOARDNET

**INTEGRATED STARTER GENERATORS (48 VDC)**  
**DC/DC CONVERTERS, BIDIRECTIONAL (48 VDC)**  
**HVAC (E-COMPRESSOR FOR 48 VDC)**



### Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



### Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



### Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SMF (TO-219AB) package with < 1 mm low profile



### Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



### Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SlimSMA (DO-221AC) package with 1 mm low profile



### Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



### Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 3\text{ A}$ , 200 V for high frequency switching, 25 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SMPC (TO-277A) package with 1.1 mm low profile



### Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



### Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 4\text{ A}$ , 200 V for high frequency switching, 22 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



### Small Signal Schottky Diodes

**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges



### Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 8\text{ A}$ , 200 V for high frequency switching, 27 ns recovery,  $T_{jmax} = 175\text{ }^{\circ}\text{C}$
- SMPD (TO-263AC) package with 1.3 mm low profile



### Small Signal Switching Diodes

**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# 48 VDC BOARDNET INTEGRATED STARTER GENERATORS (48 VDC)



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5\%$
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



# 48 VDC BOARDNET DC/DC CONVERTERS, BIDIRECTIONAL (48 VDC)



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 8$  A, 200 V for high frequency switching, 27 ns recovery,  $T_{jmax} = 175$  °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## TVS

**P6SMB Series** – Surface-Mount TransZorb® Transient Voltage Suppressor

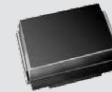
- 600 W uni- and bidirectional TVS with up to 540 V breakdown voltage, AEC-Q101 qualified
- SMB (DO-214AA) package



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery,  $T_{jmax} = 175$  °C
- SMF (TO-219AB) package with < 1 mm low profile



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery,  $T_{jmax} = 175$  °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 3$  A, 200 V for high frequency switching, 25 ns recovery,  $T_{jmax} = 175$  °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- $2 \times 4$  A, 200 V for high frequency switching, 22 ns recovery,  $T_{jmax} = 175$  °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Small Signal Switching Diodes

**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# 48 VDC BOARDNET DC/DC CONVERTERS, BIDIRECTIONAL (48 VDC)



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- 500 mW power dissipation, excellent thermal characteristics,  $R_{thJA}$  130 k/W
- Symmetrical leads are wave and reflow solderable



## Small Signal Schottky Diodes

**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable





# 48 VDC BOARDNET HVAC (E-COMPRESSOR FOR 48 VDC)



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## Ultrafast Rectifiers

**VS-1EFH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 1 A, 200 V for high frequency switching, 17 ns recovery, Tjmax = 175 °C
- SMF (TO-219AB) package with < 1 mm low profile



## Ultrafast Rectifiers

**VS-2EJH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 3 A, 200 V for high frequency switching, 20 ns recovery, Tjmax = 175 °C
- SlimSMA (DO-221AC) package with 1 mm low profile



## Ultrafast Rectifiers

**VS-6CSH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

- 2 × 3 A, 200 V for high frequency switching , 25 ns recovery, Tjmax = 175 °C
- SMPC (TO-277A) package with 1.1 mm low profile



## Ultrafast Rectifiers

**VS-8CVH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

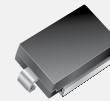
- 2 × 4 A, 200 V for high frequency switching, 22 ns recovery, Tjmax = 175 °C
- SlimDPAK (TO-252AE) package with 1.3 mm low profile



## Ultrafast Rectifiers

**VS-16CDH02HM3** – High Current Density, Soft Recovery, FRED Pt® Ultrafast Diode

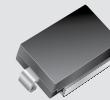
- 2 × 8 A, 200 V for high frequency switching, 27 ns recovery, Tjmax = 175 °C
- SMPD (TO-263AC) package with 1.3 mm low profile



## TVS

**SM5S10AT thru SM5S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

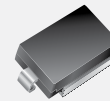
- 5000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SM6S10AT thru SM6S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 6000 W clamping power rating for ISO16750-2:2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SM8S10AT thru SM8S43AT** – High Power Density Uni-Directional TVS for Power Line Load Dump

- 8000 W clamping power rating for ISO16750-2: 2012 Pulse a
- High clamping power capability for load dump protection and freewheeling



## TVS

**SMC3K Series** – High Power Density Bidirectional TVS for Power Line Protection

- 3000 W clamping power rating for ISO16750-2:2012 Pulse b
- Designed for the protection of centralized load dump suppression powertrains



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



# 48 VDC BOARDNET HVAC (E-COMPRESSOR FOR 48 VDC)



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5\%$
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Small Signal Schottky Diodes

**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Small Signal Switching Diodes

**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



FULL HYBRID VEHICLES (HEVS)

**ELECTRICAL MOTOR DRIVES (DC/AC)**





# FULL HYBRID VEHICLES (HEVs) ELECTRICAL MOTOR DRIVES (DC/AC)



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Ultrafast Rectifiers

**VS-ETH3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2 Pin Package

- 30 A, 650 V, low  $Q_{rr}$  for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , AEC-Q101 qualified



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

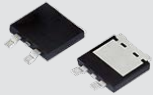
- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## Ultrafast Rectifiers

**VS-ETU3006SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low VF for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-16EDU06HM3** – High Current Density FRED Pt® Ultrafast Rectifiers

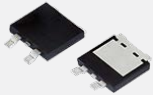
- 16 A, 600 V with low VF for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , SMPD (TO-263AC) package with 1.3 mm low profile, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETX3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2 Pin Package

- 30 A, 600 V, lowest  $Q_{rr}$  for high frequency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-30CDU06HM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low VF for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , SMPD (TO-263AC) package with 1.3 mm low profile, AEC-Q101 qualified



## TVS

**1.5SMC Series** – Surface-Mount TransZorb® Transient Voltage Suppressor

- Up to 540 V breakdown voltage, available in uni-directional or bidirectional, high voltage TVS
- SMC (DO-214AB) package, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETH1506SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 15 A, 600 V with low  $Q_{rr}$  for high frequency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## TVS

**P6SMB Series** – Surface-Mount TransZorb® Transient Voltage Suppressor

- 600 W uni- and bidirectional TVS with up to 540 V breakdown voltage, AEC-Q101 qualified
- SMB (DO-214AA) package



## Ultrafast Rectifiers

**VS-ETH3006SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low  $Q_{rr}$  for high frequency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable





# FULL HYBRID VEHICLES (HEVs) ELECTRICAL MOTOR DRIVES (DC/AC)



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5\%$
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Small Signal Schottky Diodes

**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Small Signal Switching Diodes

**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



FULL ELECTRIC VEHICLES (FEVS)

**ELECTRICAL MOTOR DRIVES (DC/AC)  
BATTERY MANAGEMENT AND DC/DC  
ON-BOARD CHARGERS**



# FULL ELECTRIC VEHICLES (FEVs) ELECTRICAL MOTOR DRIVES (DC/AC)



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

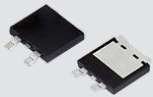
- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Standard Rectifiers

**SE30AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Low profile of 0.95 mm, compatible with SMA (DO-220AC) pad layout



## Ultrafast Rectifiers

**VS-16EDU06HM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 16 A, 600 V with low VF for high efficiency OBC
- Soft recovery, Tjmax = 175 °C, SMPD (TO-263AC) package with 1.3 mm low profile, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-30CDU06HM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low VF for high efficiency OBC
- Soft recovery, Tjmax = 175 °C, SMPD (TO-263AC) package with 1.3 mm low profile, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETH1506SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 15 A, 600 V with low Q<sub>rr</sub> for high frequency OBC
- Soft recovery, Tjmax = 175 °C, D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETH3006SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low Q<sub>rr</sub> for high frequency OBC
- Soft recovery, Tjmax = 175 °C, D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETH3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2-Pin Package

- 30 A, 650 V, low Q<sub>rr</sub> for high efficiency OBC
- Soft recovery, Tj max = 175 °C, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETU3006SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

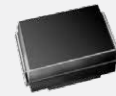
- 30 A, 600 V, low VF for high efficiency OBC
- Soft recovery, Tjmax = 175 °C, D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETX3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2-Pin Package

- 30 A, 600 V, lowest Q<sub>rr</sub> for high frequency OBC
- Soft recovery, Tj max = 175 °C, AEC-Q101 qualified



## TVS

**1.5SMC Series** – Surface-Mount TransZorb® Transient Voltage Suppressor

- Up to 540 V breakdown voltage, available in uni-directional or bidirectional, high voltage TVS
- SMC (DO-214AB) package, AEC-Q101 qualified



## TVS

**P6SMB Series** – Surface-Mount TransZorb® Transient Voltage Suppressor

- 600 W uni- and bidirectional TVS with up to 540 V breakdown voltage, AEC-Q101 qualified
- SMB (DO-214AA) package



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



# FULL ELECTRIC VEHICLES (FEVs) ELECTRICAL MOTOR DRIVES (DC/AC)



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5\%$
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Small Signal Schottky Diodes

**BAT46W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Very low turn-on voltage and fast switching
- Protected by a PN junction guard ring against excessive voltage such as electrostatic discharges



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Small Signal Switching Diodes

**1N4448W** – Small Signal Schottky and Switching Diodes in SOD-123 Package

- Silicon epitaxial planar diode
- Fast switching diode



# FULL ELECTRIC VEHICLES (FEVs) BATTERY MANAGEMENT AND DC/DC



## Standard Rectifiers

**MSE1P Series** – Miniature-Package Rectifiers With High ESD Capability for Rail to Rail Signal Line Protection

- High ESD voltage, current density, and surge current capability
- MicroSMP (DO-219AD) package with 0.65 mm low profile saves space



## Ultrafast Rectifiers

**VS-ETH3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2-Pin Package

- 30 A, 650 V, low  $Q_{rr}$  for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , AEC-Q101 qualified



## Standard Rectifiers

**SE20AF Series** – High Current Density Rectifiers With High ESD Capability for Power Line Protection

- High ESD voltage, current density, and surge current capability
- Compatible pad layout to SMA (DO-220AC) with low profile of 0.95 mm



## Ultrafast Rectifiers

**VS-ETU3006SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low  $V_F$  for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-16EDU06HM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 16 A, 600 V with low  $V_F$  for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , SMPD (TO-263AC) package with 1.3 mm low profile, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETX3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2-Pin Package

- 30 A, 600 V, lowest  $Q_{rr}$  for high frequency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-30CDU06HM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low  $V_F$  for high efficiency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , SMPD (TO-263AC) package with 1.3 mm low profile, AEC-Q101 qualified



## TVS

**TA6F Series** – Surface-Mount PAR® Transient Voltage Suppressor for High Temperature Stability and High Reliability Conditions

- $T_j = 185 \text{ }^\circ\text{C}$ , suitable for high reliability conditions and automotive applications
- SlimSMA (DO-221AC) package with 0.95 mm low profile, compatible pad layout to SMA (DO-220AC)



## Ultrafast Rectifiers

**VS-ETH1506SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 15 A, 600 V with low  $Q_{rr}$  for high frequency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Ultrafast Rectifiers

**VS-ETH3006SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low  $Q_{rr}$  for high frequency OBC
- Soft recovery,  $T_j \text{ max} = 175 \text{ }^\circ\text{C}$ , D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



# FULL ELECTRIC VEHICLES (FEVs) BATTERY MANAGEMENT AND DC/DC



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of  $\pm 2.5\%$
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring bullet
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes



## Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



# FULL ELECTRIC VEHICLES (FEVs) ON-BOARD CHARGERS



## Ultrafast Rectifiers

**VS-30CDU06HM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low VF for high efficiency OBC
- Soft recovery, Tjmax = 175 °C, SMPD (TO-263AC) package with 1.3 mm low profile, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETH3006SHM3** – High Current Density FRED Pt® Ultrafast Rectifiers

- 30 A, 600 V, low Qrr for high frequency OBC
- Soft recovery, Tjmax = 175 °C, D<sup>2</sup>PAK (TO-263AB) package, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETH3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2-Pin Package

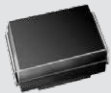
- 30 A, 650 V, low Qrr for high efficiency OBC
- Soft recovery, Tj max = 175 °C, AEC-Q101 qualified



## Ultrafast Rectifiers

**VS-ETX3007THN3** – High Current Density FRED Pt® Ultrafast Rectifiers in Through-Hole TO-220AC 2-Pin Package

- 30 A, 600 V, lowest Qrr for high frequency OBC
- Soft recovery, Tj max = 175 °C, AEC-Q101 qualified



## TVS

**1.5SMC Series** – Surface-Mount TransZorb® Transient Voltage Suppressor

- Up to 540 V breakdown voltage, available in uni-directional or bidirectional, high voltage TVS
- SMC (DO-214AB) package, AEC-Q101 qualified



## TVS

**P6SMB Series** – Surface-Mount TransZorb® Transient Voltage Suppressor

- 600 W uni- and bidirectional TVS with up to 540 V breakdown voltage, AEC-Q101 qualified
- SMB (DO-214AA) package



## Zener Diodes

**BZD27B Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- 2 % Zener voltage tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27B-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free, 2 % tolerance
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**BZD27C-M Series** – Zener Diodes in Low Profile SMF (DO-219AB) Package With Surge Current Specification

- 43 breakdown voltages from 3.6 V to 200 V
- Halogen free
- Symmetrical leads are wave and reflow solderable



## Zener Diodes

**PLZ Series** – 500 mW Zener Diodes in Low Profile MicroSMF (DO-219AC) Package Provide Voltage Stabilization

- Very tight Zener voltage tolerances of ± 2.5 %
- ESD and surge rated
- Symmetrical leads are wave and reflow solderable



## Small Signal Schottky Diodes

**SD103AWS** – Ideal for Fast Switching and Low Logic Level Applications

- Metal on silicon Schottky diode protected by PN junction guard ring bullet
- Low forward voltage drop and fast switching ideal for protection of MOS devices, steering, biasing, and coupling diodes





# FULL ELECTRIC VEHICLES (FEVs) ON-BOARD CHARGERS



Small Signal Switching Diodes

**BAV21WS** – Fast Switching Diode for General Purpose

- Silicon epitaxial planar diode



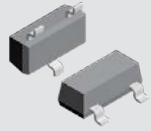
NETWORKS

**CAN BUS, LIN BUS, FLEX BUS**



# NETWORKS

## CAN BUS, LIN BUS, FLEX BUS



### ESD Protection

**GSOTxx-Series** – 1-Line Uni-Directional Protection Diode in SOT23 Package

- Working range from 3 V up to 36 V;  $\pm 30$  kV contact discharge;  $\pm 30$  kV air discharge
- Very common SOT23 package



### ESD Protection

**VCUT05E1-SD0** – Uni-Directional ESD Protection Diode in Tiny CLP0603 Package

- Working range of  $\pm 5.5$  V; low leakage current  $< 0.1 \mu\text{A}$ ; low load capacitance  $\text{CD} < 14 \text{ pF}$
- CLP0603 package is one of the smallest in the industry; low profile of 0.27 mm and uses 3 $\times$  less board space than 1006 case size



### ESD Protection

**GSOTxxC-Series** – 2-Line Uni-Directional Protection Diode in SOT23 Package

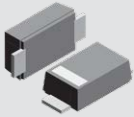
- Working range from 3 V up to 36 V;  $\pm 30$  kV contact discharge;  $\pm 30$  kV air discharge
- Very common SOT23 package



### ESD Protection

**VLIN1616-02G** – 1-Line Bidirectional Protection Diode in Small-Size SOD323 Package

- Working range of  $\pm 16$  V; low leakage current  $\text{IR} < 0.05 \mu\text{A}$
- Low load capacitance  $\text{CD} < 24 \text{ pF}$
- LIN BUS related performance in smallest SOD323 package



### ESD Protection

**SMF-Series** – Uni-Directional ESD Protection Diode in Low Profile SMF (DO-219AB)

- Devices offer low 1 mm profile, low noise technology, fast response times
- Symmetrical leads are wave and reflow solderable



### ESD Protection

**VLIN1626-02G** – 1-Line Bidirectional Protection Diode in Small-Size SOD323 Package

- Low load capacitance of 15.5 pF typical and 18 pF maximum
- Compact SOD-323 package measures only 1.95 mm x 1.5 mm with low 0.95 mm profile



### ESD Protection

**VBUS05B1-SD0** – Uni-Directional low Cap ESD Protection Diode in Tiny CLP0603 Package

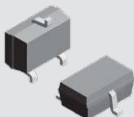
- Capacitance down to 0.29 pF typical
- CLP0603 package is one of the smallest in the industry; low profile of 0.27 mm and uses 3 $\times$  less board space than 1006 case size



### ESD Protection

**VLIN26A1-03G** – 1-Line Bidirectional Protection Diode in Small-Size SOT323 Package

- Working range of  $\pm 26.5$  V; low leakage current  $\text{IR} < 0.05 \mu\text{A}$
- Low load capacitance  $\text{CD} < 13 \text{ pF}$
- LIN BUS related performance in smallest SOT323 package



### ESD Protection

**VCAN26A2-03G** – 2-Line Bidirectional Protection Diode in Small-Size SOT323 Package

- Working range of  $\pm 26.5$  V; low leakage current  $\text{IR} < 0.05 \mu\text{A}$
- Low load capacitance  $\text{CD} < 13 \text{ pF}$
- CAN BUS related performance in smallest SOT323 package



### ESD Protection

**VLIN2626-02G** – 1-Line Bidirectional Protection Diode in Small-Size SOD323 Package

- Working range of  $\pm 26.5$  V; low leakage current  $\text{IR} < 0.05 \mu\text{A}$
- Low load capacitance  $\text{CD} < 16 \text{ pF}$
- LIN BUS related performance in smallest SOD323 package



### ESD Protection

**VCAN26A2-03S** – 2-Line Bidirectional Protection Diode in SOT23 Package

- Working range of  $\pm 26.5$  V; low leakage current  $\text{IR} < 0.05 \mu\text{A}$
- Low load capacitance  $\text{CD} < 13 \text{ pF}$
- Very common SOT23 package



### ESD Protection

**VTVS-Series** – Uni-Directional ESD Protection Diode in Low Profile SMF (DO-219AB)

- Feature a 2 % breakdown voltage tolerance, low 1 mm profile, low noise technology, and fast response times
- Symmetrical leads are wave and reflow solderable



**По вопросам продаж и поддержки обращайтесь:**

Алматы (7273)495-231	Казань (843)206-01-48	Новокузнецк (3843)20-46-81	Смоленск (4812)29-41-54
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Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
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Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	