



Vishay Intertechnology, Inc.

Transportation

(Forklifts, Lift Trucks)



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





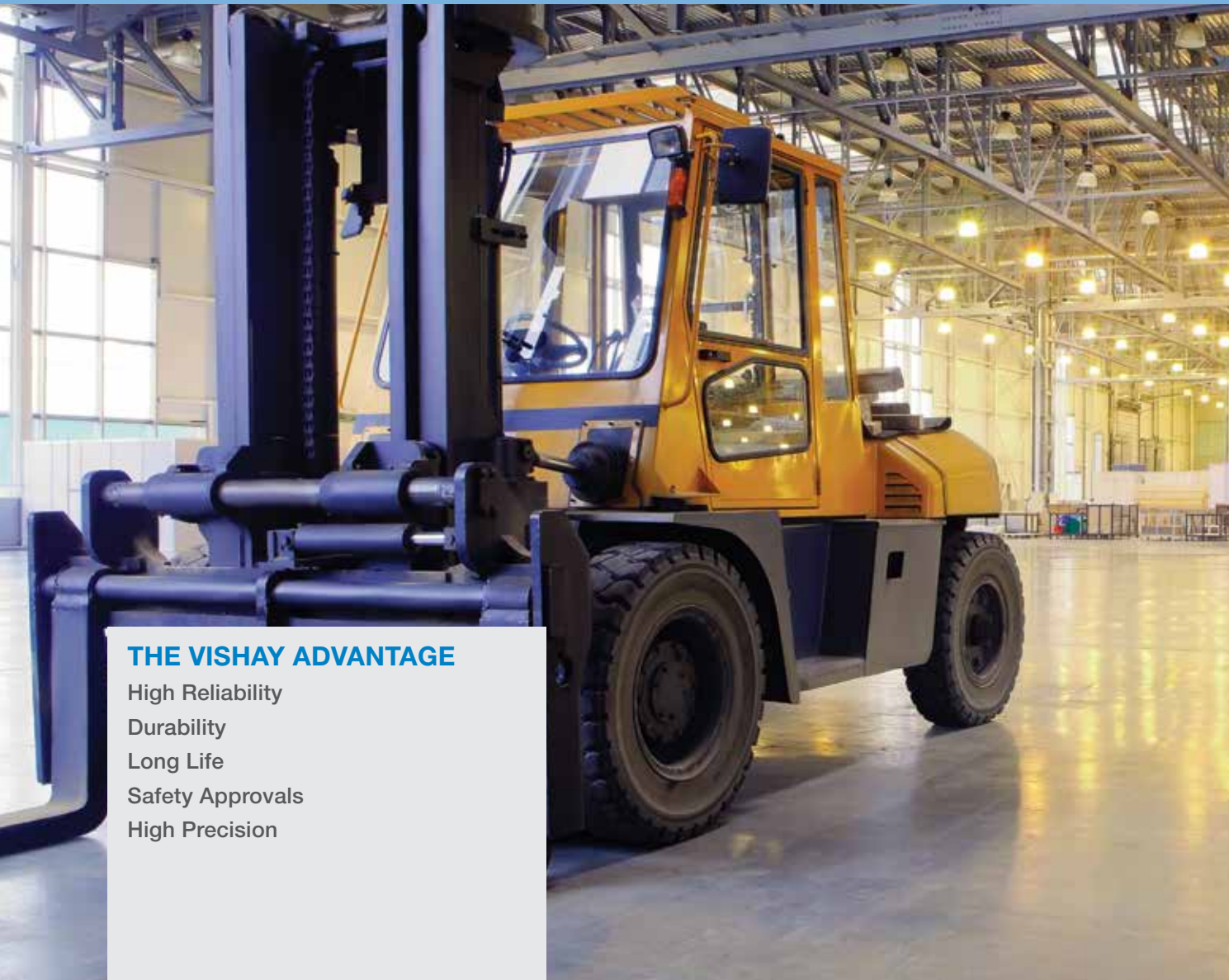
Transportation Forklifts, Lift Trucks

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

For inquiries, please contact your local sales representative.

Key components for
FORKLIFTS, LIFT TRUCKS



THE VISHAY ADVANTAGE

- High Reliability
- Durability
- Long Life
- Safety Approvals
- High Precision

**Main Inverters /
Motor Drives**



**Battery Chargers /
Monitoring
Systems**



**Electronic
Controls**





Main Inverters / Motor Drives



View datasheets for these products
www.vishay.com/ref/et3tr3a

RESISTORS

Thin Film Mini-MELF Resistors

[SMM0204](#)



- Unrivaled surge handling capability, ultimate stability over lifetime
- AEC-Q200 qualified, sulfur resistant, GREEN product

MOSFETs

Automotive Bare Die MOSFET, Family Available in Tape-and-Reel Format

[SQM100N08-5m0KGD](#)



- High-performance MOSFET technologies available in bare die
- Known good die processing with comprehensive testing

INDUCTORS

Numerous Custom Designs for High-Efficiency Inductor and Transformer Applications

- Current ratings up to 1000 A, switching frequency power levels from 1 W to 1 MW
- Amorphous, powder, and ferrite cores including low profile packaging

DIODES

Surface-Mount TRANSZORB® Transient Voltage Suppressors

[SMBJ](#)



- AEC-Q101 qualified
- Peak pulse power: 600 W (10/1000 μ s)

RESISTORS

Wirewound Resistors, Industrial Power, Tubular

[RBSF](#)



- High-temperature silicone or vitreous enamel coatings
- Designed to meet heavy-duty requirements where space is at a premium

OPTOELECTRONICS

Widebody IGBT and MOSFET Driver with 10 mm Creepage and Clearance

[VOW3120](#)



- 10 mm min. external creepage distance, 8000 V max. transient isolation voltage
- 2.5 A minimum peak output current, 45 kV/ μ s common mode rejection

NON-LINEAR RESISTORS

NTC Thermistors, Naked Chips

[NTCC100E4](#)



- High stability over long time
- Wire-bondable NTC die version available

OPTOELECTRONICS

Widebody 1 MBd High-Speed Optocoupler with 10 mm Creepage and Clearance

[VOW2611](#)



- 8000 V max. transient isolation voltage
- Integrated faraday shield provides very high input-to-output noise isolation of 40 kV/ μ s

ESTA POWER CAPACITORS

Capacitors for Power Electronics (PEC) – Cylindrical

[HDMKP](#)



- Low self inductance
- High current rating

MOSFETs

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

[SQM200n04-1m1L](#)



- TrenchFET® Gen III technology, AEC-Q101 qualified, maximum $R_{DS(on)}$ 1.1 m Ω
- 7-leaded D²PAK packaging

RESISTORS

Power Metal Strip® SMD Resistors, Very High Power (to 7 W), Low Value (to 0.0005 Ω)

[WSLP2726](#)



- High power rating of 5 W to 7 W in WSLP2726 package
- Very low resistance values from 0.0005 Ω to 0.002 Ω in 4-terminal package

OPTOELECTRONICS

Widebody 1 MBd High-Speed Optocoupler with 10 mm Creepage and Clearance

[VOW136](#)




- 10 mm min. external creepage distance, 8000 V max. transient isolation voltage
- Integrated faraday shield provides very high input-to-output noise isolation



Battery Chargers / Monitoring Systems



DIODES
Surface-Mount TRANSZORB® Transient Voltage Suppressors

[SMBJ150-E3/52](#)

- AEC-Q101 qualified
- Peak pulse power: 600 W (10/1000 μ s)

RESISTORS
High-Stability Thin Film Flat Chip Resistors


[TNPW e3](#)

- Excellent overall stability, endurance < 0.05 %, resistance range from 10 Ω to 3 M Ω
- AEC-Q200 qualified, sulfur resistant, halogen-free


MOSFETs
E Series 600 V N-Channel Power MOSFET

[SiHG22N60E](#)


- High-performance E Series high-voltage technology, maximum $R_{DS(on)}$ 180 m Ω
- Popular TO-247 packaging, maximum continuous current of 21 A

NON-LINEAR RESISTORS
NTC Thermistors, Radial Leaded, Standard Precision

[NTCLE100E3103HT1](#)


- Standard classic series
- Color band coded

OPTOELECTRONICS
AC and DC Linear Optocoupler with VDE, UL, BSI, and FIMKO Certification

[IL300](#)


- Feedback photodiode compensates for LED's time and temperature characteristics
- Isolation test voltage, 5300 V_{RMS} in a DIP or SMD package

INDUCTORS
Numerous Custom Designs for High-Efficiency Inductor and Transformer Applications



- Current ratings up to 1000 A, switching frequency power levels from 1 W to 1 MW
- Amorphous, powder, and ferrite cores including low profile packaging

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

[SQM120N10-3m8](#)


- Medium-voltage ThunderFET® technology, AEC-Q101 qualified, maximum $R_{DS(on)}$ 3.8 m Ω
- Popular D²PAK packaging

RESISTORS
Power Metal Strip® Battery Shunt Resistor, Very Low Value (100 $\mu\Omega$, 125 $\mu\Omega$, and 250 $\mu\Omega$)

[WSBS8518](#)

- 36 W (850 A) power capability in an 8518 package
- Power Metal Strip all-welded construction for severe environments

DISPLAYS
High-Quality Displays Offer Excellent Human-to-Machine Interface Solutions

[LCD, Color TFT, OLED](#)

- Selection of transfective LCD, sunlight-readable OLED and high-brightness color TFT
- High-visibility displays for use in the transportation industry

OPTOELECTRONICS
Optocoupler, Phototransistor Output, High Reliability, 5300 V_{RMS}

[VO617A-3X007T](#)

- Isolation test voltage of 5300 V_{RMS} and VDE, UL, cUL, BSI, and FIMKO certified
- Operating temperature from -55 °C to +110 °C and 5 mA trigger current

RESISTORS
Power Metal Strip SMD Resistors, Very High Power (to 3 W), Low Value (to 0.0005 Ω)

[WSLP](#)

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

OPTOELECTRONICS
Widebody 1 MBd High-Speed Optocoupler with 10 mm Creepage and Clearance






[VOW2611](#)

- 8000 V max. transient isolation voltage
- Integrated faraday shield provides very high input-to-output noise isolation of 40 kV/ μ s

View datasheets for these products www.vishay.com/ref/et3tr3b

Electronic Controls



<p>TANTALUM CAPACITORS</p> <p>Solid Tantalum Chip Capacitors, 298D MICROTAN®, 298W Extended Range MICROTAN</p>  <p>298D</p> <ul style="list-style-type: none"> • High capacitance in small case sizes, including 0603 and 0402 footprint • Perfect for space-constrained designs 	<p>SENSORS</p> <p>Single-Turn Bushing Mount Hall Effect Sensor in Size 09 (22.2 mm)</p>  <p>351 HE</p> <ul style="list-style-type: none"> • Accurate linearity: $\pm 0.5\%$, all angles available up to 360°, no dead band • Dedicated to applications in harsh environments, long life > than 10M cycles 	<p>RESISTORS</p> <p>Professional Thin Film MELF Resistors</p>  <p>MMU 0102, MMA 0204, MMB 0207</p> <ul style="list-style-type: none"> • Unrivaled surge-handling capability, ultimate stability over lifetime • AEC-Q200 qualified, approved acc. EN 140401-803, sulfur resistant, GREEN product
<p>RECTIFIERS</p> <p>Surface-Mount Ultrafast Plastic Rectifier</p>  <p>MURS120-E3/53T</p> <ul style="list-style-type: none"> • Glass passivated diode technology • Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C 	<p>INDUCTORS</p> <p>Low-Profile, High-Current IHLP® Inductors</p>  <p>IHLP-5050</p> <ul style="list-style-type: none"> • High-current, high-temperature inductor for filtering and DC/DC conversion 	<p>MOSFETs</p> <p>Automotive N-Channel 75 V (D-S) 175 °C MOSFET</p>  <p>SQJ486EP</p> <ul style="list-style-type: none"> • Classic TrenchFET® technology, AEC-Q101 qualified, maximum $R_{DS(on)}$ 26 mΩ • Thermally enhanced PowerPAK® SO-8L packaging
<p>SENSORS</p> <p>Position Sensor, Non-Contacting</p>  <p>A1260HE</p> <ul style="list-style-type: none"> • Easy and fast mounting (2 ears) d-shaft design, output cable and connector • Redundant laws for security, 8-turns electrical signal, steering applications 	<p>OPTOELECTRONICS</p> <p>Widebody 1 MBd High-Speed Optocoupler with 10 mm Creepage and Clearance</p>  <p>VOW2611</p> <ul style="list-style-type: none"> • 8000 V max. transient isolation voltage • Integrated faraday shield provides very high input-to-output noise isolation of 40 kV/μs 	<p>ALUMINUM CAPACITORS</p> <p>Aluminum Capacitors SMD (Chip), High Temperature, Low Impedance</p>  <p>146 CTI</p> <ul style="list-style-type: none"> • High temperature up to 125°C, long life, low impedance, high ripple current • Soldering according JEDEC-J-STD-020
<p>DIODES</p> <p>Small-Signal Schottky Diodes</p>  <p>BAS281</p> <ul style="list-style-type: none"> • AEC-Q101 qualified • Integrated protection ring against static 	<p>DISPLAYS</p> <p>High-Quality Displays Offer Excellent Human-to-Machine Interface Solutions</p>  <p>LCD, Color TFT, OLED</p> <ul style="list-style-type: none"> • Selection of transfective LCD, sunlight-readable OLED, and high-brightness color TFT • High-visibility displays for use in the transportation industry 	<p>OPTOELECTRONICS</p> <p>0.5 A Output Current IGBT and MOSFET Driver</p>  <p>VO3150A</p> <ul style="list-style-type: none"> • 0.5 A minimum peak output current in a DIP or SMD package • 25 kV/μs minimum common mode rejection and is UL, cUL, and VDE certified

View datasheets for these products
www.vishay.com/ref/et3tr3c





Vishay Intertechnology, Inc.



A *WORLD OF*
SOLUTIONS