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Vishay Intertechnology, Inc.

# Consumer

(Robotic Appliances / Domestic Robots)



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





## **Consumer**

### Robotic Applications / Domestic Robots

Robotic Vacuum Cleaners / Robovacs	2
Robotic Lawn Mowers	3
Companion Robots	4

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

For inquiries, please contact your local sales representative.

*Key components for*  
**ROBOTIC APPLIANCES / DOMESTIC ROBOTS**



**THE VISHAY ADVANTAGE**

- Fast Response
- Superior Sensitivity
- Low Self-Weight
- ESD Protection
- Low Switching Loss
- and more....

**Robotic Vacuum Cleaners / Robovacs**



**Robotic Lawn Mowers**



**Companion Robots**





# Robotic Vacuum Cleaners / Robovac



MOSFETs

**Dual N-Channel 40 V (D-S) MOSFET**




[Si7938DP](#)

- TrenchFET® Gen III technology, maximum  $R_{DS(on)}$  5.8 mΩ
- Thermally enhanced PowerPAK® SO-8 packaging

DIODES

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




[SMBJ26CA-E3/52](#)

- 600 W peak pulse power capability with a 100/1000 μs waveform
- Available in unidirectional and bidirectional

DISPLAYS

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




[LCD, Color TFT, OLED](#)

- Standard / custom options for LCD, OLED, and color TFT for operator monitoring
- High-brightness options as well as dimable for low-light operation

RECTIFIERS

**High-Current Density Surface-Mount Schottky Barrier Rectifier**




[SS10P6-M3/86A](#)

- AEC-Q101 qualified
- Very low profile: typical height of 1.1 mm

OPTOELECTRONICS

**High-Speed Infrared-Emitting Diode with Peak Wavelength of 940 nm**




[VSLB3948](#)

- 940 nm emitter in a T-1 clear package with intensity of 65 mW/sr,  $I_F = 100$  mA
- Angle of half intensity:  $\phi = \pm 22^\circ$ , and rise and fall time of 15 ns

INDUCTORS

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




[IHLP-6767GZ](#)

- Large size, high-current, low-saturation SMD inductor
- DC/DC conversion, filter applications

OPTOELECTRONICS

**Silicon NPN Phototransistor**




[TEFT4300](#)

- Peak sensitivity of 925 nm with spectral bandwidth from 875 nm to 1000 nm ( $\lambda_{0.5}$ )
- Angle of half sensitivity of  $\pm 30^\circ$ , output current of 3.2 mA at  $E_o = 1$  mW/cm<sup>2</sup>

CERAMIC CAPACITORS

**IEC 60384-14:2005, CAN/CSA/cCSAus, and ANSI/UL CB Certificates**




[MLCC SMD Safety Capacitor](#)

- Surface-mount design: simpler assembly and reduced board space requirement
- Available in NP0 (C0G) or X7R dielectrics

OPTOELECTRONICS

**High-Power Infrared-Emitting Diode with Peak Wavelength of 940 nm in a T-1¾ Package**




[TSAL6100](#)

- Typical radiant intensity of 170 mW/sr at  $I_F = 100$  mA, 1450 mW/sr at  $I_F = 1$  mA
- Angle of half intensity:  $\phi = \pm 10^\circ$

OPTOELECTRONICS

**IR Receiver Modules for Remote Control Systems**




[TSOP34438](#)

- Industry leading range of 45 m, directivity of  $\pm 45^\circ$ , and 38 kHz carrier frequency
- Minimum irradiance of 0.08 mW/m<sup>2</sup>, and featuring AGC-4 noise suppression

OPTOELECTRONICS

**Optocoupler, Power Phototriac**




[VO2223A](#)

- Optically coupled phototriac driving a power triac in a DIP-8 package
- Load current of 1 A<sub>RMS</sub> and 5300 V of input-to-output isolation

OPTOELECTRONICS

**Optocoupler, Non-Zero Crossing Phototriac**



[VO3052](#)

- 1500 V/μs dV/dt minimum, 2000 V/μs typical, 600 V blocking voltage
- 100 mA on-state output current, and 10 mA trigger current with  $V_{ISO}$  of 5300 V

View datasheets for these products [www.vishay.com/ref/et3cn7a](http://www.vishay.com/ref/et3cn7a)



# Robotic Lawn Mowers



**RECTIFIERS**

**Surface-Mount Glass Passivated Rectifier**




[S1J-E3/61T](#)

- AEC-Q101 qualified
- High forward surge capability

**NON-LINEAR RESISTORS**

**SMD 0603, Glass Protected NTC Thermistors**




[NTCS0603](#)

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

**ICs**

**Dual 2 A, 1.2 V, Slew Rate Controlled Load Switch**




[SiP32416](#)

- Low and flat  $R_{ON}$  over the full operation voltage range of 1.2 V to 5.5 V
- Features 2 ms turn-on rise time, switch-off reverse blocking, and output discharge

**TVS DIODES**

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

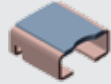


[P4SMA220A](#)

- Glass passivated chip junction, available as unidirectional and bidirectional
- 400 W peak pulse power capability with a 10/1000  $\mu$ s waveform, excellent clamping capability

**RESISTORS**

**Power Metal Strip® SMD Resistors, Very High Power (to 7 W), Low Value (to 0.0005  $\Omega$ )**




[WSLP2726](#)

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

**INDUCTORS**

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

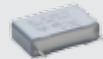


[IHLP-5050](#)

- High-current, very low-profile power inductor for DC/DC conversion and filtering
- High-frequency operation up to 5 MHz

**FILM CAPACITORS**

**Interference Suppression Film Capacitor – Class Y2, Radial MKP 300 V<sub>AC</sub>**




[MKP338 6](#)

- RFI Y2 capacitor for bypass applications

**OPTOELECTRONICS**

**IR Receiver Modules for Remote Control Systems**




[TSOP31230](#)

- Very low supply current, photo detector, and preamplifier in one package
- Internal filter for PCM frequency, supply voltage from 2.5 V to 5.5 V

**DISPLAYS**

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




[LCD, Color TFT, OLED](#)

- Standard / custom options for LCD, OLED, and color TFT for operator monitoring
- High-brightness options as well as dimmable for low-light operation

**CERAMIC CAPACITORS**

**Ultra-Stable Dielectric, Low Dissipation Factor (DF)**




[MLCC High Q Capacitors](#)

- Non-magnetic available with copper or epoxy bondable termination
- Robust design build with wet process

**ALUMINUM CAPACITORS**

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



[146 CTI](#)

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

**MOSFETs**

**N-Channel 40 V (D-S) MOSFET**



[SiR640ADP](#)

- TrenchFET® Gen IV technology for increased power density, maximum  $R_{DS(on)}$  of 2 m $\Omega$
- Thermally enhanced PowerPAK® SO-8 packaging

View datasheets for these products [www.vishay.com/ref/et3cn7b](http://www.vishay.com/ref/et3cn7b)




# Companion Robots




MOSFETs  
**P-Channel 20 V (D-S) MOSFET**  
  
[Si7655ADN](#)  


- Industry leading p-channel Gen III technology, maximum  $R_{DS(on)}$  3.6 m $\Omega$
- Thermally enhanced PowerPAK® 1212-8 is 1/3 the size of an SO-8

RESISTORS  
**Power Metal Strip® Resistors, Low Value (Down to 0.0005  $\Omega$ ), Surface-Mount**  
  
[WSL](#)  

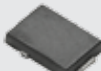
- Extremely low resistance values from 0.0005  $\Omega$  to 0.5  $\Omega$  and tolerance of 1 %
- Power Metal Strip all-welded construction offers high pulse capacity

OPTOELECTRONICS  
**Fully Integrated Proximity and Ambient Light Sensor with I<sup>2</sup>C Interface**  
  
[VCNL4020](#)  


- Infrared emitter is included in the 4.9 mm x 2.4 mm x 0.83 mm SMD pkg.
- 16-bit resolution, proximity range of up to 20 cm with programmable thresholds

INDUCTORS  
**Low-Profile, High-Current IHLP® Inductors**  
  
[IHLP-2525](#)  


- Compact, high-current power inductor for DC/DC conversion and filter applications
- High-frequency operation up to 5 MHz

RECTIFIERS  
**High Current Density, Surface-Mount Trench MOS Barrier Schottky Rectifier**  
  
[V10PL45](#)  

- Trench MOS Schottky technology
- Very low profile – typical height of 1.1 mm

RECTIFIERS  
**Surface-Mount Schottky Barrier Rectifiers**  
  
[MSS2P3](#)  


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

MOSFETs  
**E Series 600 V N-Channel Power MOSFET**  
  
[SiHG33N60E](#)  


- High-performance E Series, high-voltage technology, maximum  $R_{DS(on)}$  99 m $\Omega$
- Popular TO-247 packaging, maximum continuous current of 33 A

TANTALUM CAPACITORS  
**Solid Tantalum Chip Capacitors 298D MICROTAN®, 298W Extended Range MICROTAN**  
  
[298D](#)  


- High capacitance in small case sizes including 0603 and 0402 footprint
- Perfect for space constrained designs

DIODES  
**4-Line Bus-Port ESD Protection, Flow-Through Design**  
  
[VBUS54ED-FBL](#)  


- Compact LLP2510-10L package
- Soldering can be checked by standard vision inspection

DISPLAYS  
**High-Quality Displays Offer Excellent Human-to-Machine Interface Solutions**  
  
[LCD, Color TFT, OLED](#)  

- Standard / custom options for LCD, OLED, and color TFT for operator monitoring
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NON-LINEAR RESISTORS  
**SMD 0603, Glass Protected NTC Thermistors**  
  
[NTCS0603](#)  

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

ICs  
**6 A microBUCK® Integrated FET Buck Regulator with Programmable LDO**  
  
[SiC403A](#)  

- Offers a scalable design with 10 A and 15 A parts in the same footprint
- Soft-start, UVP / OVP, OCP, selectable power-saving mode, LDO, PGOOD, OTP

View datasheets for these products  
www.vishay.com/ref/et3cn7c





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## ***ABOUT TTI, INC.***

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



**A WORLD OF  
SOLUTIONS**

### **TTI, INC.**

Ganghoferstr. 34  
82216 Maisach-Gernlinden  
Germany  
Tel.: +49 (0)8142 6680 – 0  
Fax: +49 (0)8142 6680 – 490  
Email: [sales@de.ttiinc.com](mailto:sales@de.ttiinc.com)  
[www.ttieurope.com](http://www.ttieurope.com)