



Vishay Intertechnology, Inc.

Automotive Chassis Controls





Automotive

Chassis Controls

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The Engineer's Toolbox highlights, by market application, some innovative components Vishay manufactures that help design engineers develop superior end products. We recognize that offering unique component solutions helps improve the performance of next-generation devices, overcome technical barriers, and create new markets.

More information on the Engineer's Toolbox, including product datasheet links, can be found at www.vishay.com/ref/et2. For inquiries, please contact your local sales representative.



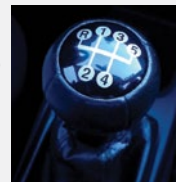
Key components for CHASSIS CONTROL



STEERING



BRAKING AND SAFETY



TRANSMISSION ECU;
DOUBLE CLUTCH BLDC;
DRIVE; GEAR SHIFTING

THE VISHAY ADVANTAGE
AEC Qualifications
High Power Density
High Pulse Current Capabilities
Low Profile
Long Life
Small Size
and more...



STEERING

CAPACITORS

146 CTI - High Temperature SMD Aluminum Capacitor

125 °C, Low Impedance, High Ripple, SMD

Features

- Soldering heat resistant according to IPC/JEDEC J-STD-020 (up to 260 °C/ 40 s)
- Long useful life: up to 6000 h at 125 °C
- AEC-Q200 qualified
- Sizes 10 mm x 10 mm up to 18 mm x 21 mm; vibration-proof, 4-pin and 6-pin versions



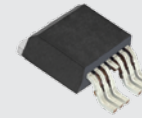
MOSFETs

SQM200N04-2m1

40 V MOSFET in D²PAK-7: 0.0021 Ω, 200 A

Features

- AEC-Q101 qualified
- Low R_{DS(on)} for motor drive applications
- 200 A peak current
- 175 °C maximum temperature



CAPACITORS

TH4

Hi-TMP[®] SMD Tantalum Capacitors

Features

- Operating temperature up to 175 °C
- Matte tin RoHS-compliant terminations available for all cases
- 100 % surge current tested



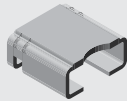
RESISTORS

WSL2726

SMD, Power Metal Strip[®] Resistor

Features

- 4 terminal design for accurate current sensing
- High power rating of 3 W in 2726 package size
- Extremely low resistance values: 0.3 mΩ to 5.0 mΩ
- Tight tolerances of 1.0 % and 5.0 %



CAPACITORS

VJ...H (X8R)

Multilayer Ceramic Chip Capacitors

Features

- X8R dielectric
- Case sizes: 0603 to 1210
- Operating temperature up to + 150 °C
- AgPd termination available for epoxy bonding



OPTOELECTRONICS

TCUT1300X01

Dual Channel Transmissive Sensor

Features

- Resolve direction and speed with dual channel transmissive (interrupter) sensor
- Wide gap of 3 mm; compatible with mechanical tolerances
- Wide operating temperature range from - 40 °C to 105 °C; enhanced temperature release
- Unlimited floor life; moisture sensitivity Level 1 per J-STD-020



RESISTORS, NON-LINEAR

NTCS0603E3

Glass Protected SMD 0603 NTC Thermistor

Features

- Tolerance on R₂₅ down to 1 %, and on B_{25/85} down to 1 %
- High operating temperature up to 150 °C
- AEC-Q200 qualified

RESISTORS

TNPW e3 Series

High-Stability Thin Film Chip Resistors

Features

- Low temperature coefficient and tight tolerances: ± 0.1 %, ± 10 ppm/K
- Excellent overall stability at different environmental conditions
- AEC-Q200 qualified
- Case sizes: 0402 to 1210



INDUCTORS

IHTHxxxx

High-Current Through-Hole Inductor

Features

- High-temperature series
- Shielded construction
- Handles high transient current spikes without saturation
- Ultra-low buzz noise due to composite construction



RECTIFIERS

MBRB1545CT

Dual Common-Cathode Surface-Mount Schottky

Features

- Guardring for overvoltage protection
- Low forward voltage drop
- High reliability grade, AEC-Q101 qualified
- Meets MSL level 1, RoHS-compliant



THE VISHAY ADVANTAGE

- AEC Qualifications
- High Power Density
- High Pulse Current Capabilities
- Low Profile
- Long Life
- Small Size
- and more...

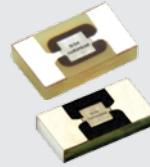


BRAKING AND SAFETY

RESISTORS

MEPIC

Massive Electro-Pyrotechnic Ignitor Chip



Features

- 0805 wraparound or flip chip version (1206 on request)
- No fire, all fire, ESD withstand USCAR, AKVL16, and major car manufacturers standards
- Very predictable, reproducible, and reliable behavior
- Easy set up, by design, of firing levels; compatible with wet or dry process

INDUCTORS

IHLP-4040DZ

Low-Profile, High-Current IHLP® Inductor



Features

- AEC-Q200 qualified
- Shielded construction
- Handles high transient current spikes without saturation
- Ultra-low buzz noise due to composite construction

RECTIFIERS

SS2P6

High Current Density Surface Mount Schottky



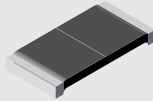
Features

- Very low profile: typical height of 1.0 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- Meets MSL level 1, RoHS-compliant, halogen-free

RESISTORS

WSP2512

SMD, Power Metal Strip® Resistor



Features

- 3 W current sensing resistor in 2512 package size
- Very low resistance value range: 0.5 mΩ to 10 mΩ
- Standard tolerance of 1.0 % with 0.5 % available
- High-temperature performance: up to + 170 °C

CAPACITORS

150 CRZ - Low Impedance SMD Aluminum Capacitor

105 °C, Low Impedance, High Ripple, SMD



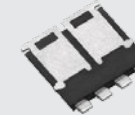
Features

- Soldering heat resistant according to IPC/ JEDEC J-STD-020 (up to 260 °C/40 s)
- Extended useful life: up to 10 000 h at 105 °C
- AEC-Q200 qualified
- Sizes 8 mm x 10 mm up to 18 mm x 21 mm; vibration-proof, 4-pin and 6-pin versions

MOSFETs

SQJQ900E

40 V Dual PowerPAK® 8 x 8L: 0.0041 Ω, 100 A



Features

- AEC-Q101 qualified
- Dual 8 mm x 8 mm x 1.2 mm surface-mount package for high power density
- 175 °C maximum temperature

CAPACITORS

VJ...H (X8R)

Multilayer Ceramic Chip Capacitors



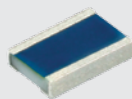
Features

- X8R dielectric
- Case sizes: 0603 to 1210
- Operating temperature up to + 150 °C
- AgPd termination available for epoxy bonding

RESISTORS

MCW 0406 AT Professional and Precision

Wide Terminal Thin Film Chip Resistors



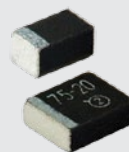
Features

- Rated dissipation up to 300 mW
- Superior temperature cycling robustness
- Operating temperature: up to 175 °C for 1000 h
- AEC-Q200 qualified (pending)

CAPACITORS

TP8 Series Automotive Grade MICROTAN® Tantalum Capacitors

Ideal for Space Constrained Applications



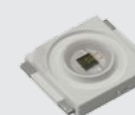
Features

- Industry's best volumetric efficiency
- Small sizes including 0603 footprint
- AEC-Q200 qualified

OPTOELECTRONICS

VSMY7850X01

Infrared Emitter for HUD, Adaptive Cruise

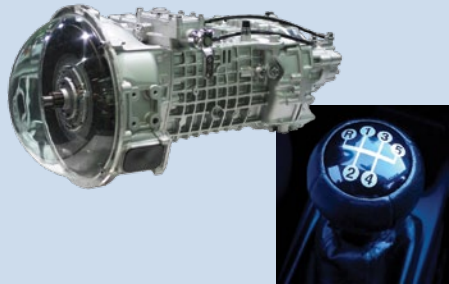


Features

- Designed for high drive currents: up to 1 A DC and up to 5 A pulsed
- High intensity; 170 mW/sr (I_F = 1 A, t_p = 20 ms), 780 mW/sr (I_F = 5 A, t_p = 100 μs)
- High speed; rise time of 15 ns and fall time of 18 ns
- Floor life of 4 weeks, moisture sensitivity Level 2a per J-STD-020

THE VISHAY ADVANTAGE

- AEC Qualifications
- High Power Density
- High Pulse Current Capabilities
- Low Profile
- Long Life
- Small Size
- and more...



**TRANSMISSION ECU;
DOUBLE CLUTCH BLDC;
DRIVE; GEAR SHIFTING**

CAPACITORS

VJ...H (X8R)

Multilayer Ceramic Chip Capacitors



Features

- X8R dielectric
- Case sizes: 0603 to 1210
- Operating temperature up to + 150 °C
- AgPd termination available for epoxy bonding

MOSFETs

**KGD MOSFETs
Customized**



100 % Tested Known Good Die in Tape/Reel

Features

- Die are automotive AEC-Q101 qualified when in standard package
- Die sizes from 0.7 mm² to 95 mm²
- 175 °C maximum temperature

DIODES

SMxS24A

PAR® Transient Voltage Suppressors



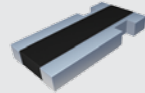
Features

- Junction passivation optimized design with passivated anisotropic rectifier technology
- T_J = 175 °C capability suitable for high reliability and automotive requirements
- Available in uni-directional polarity only
- Low leakage current, low forward voltage drop, and high-surge capability

RESISTORS

WSK0612

SMD, Power Metal Strip® Resistor



Features

- 4 terminal design for accurate current sensing
- 1 W current-sensing resistor in the compact 0612 package size
- Extremely low resistance values of 0.5 mΩ to 5.0 mΩ
- Standard tolerance of 1.0 % with 0.5 % available

INDUCTORS

IHLP-5050FD

Low-Profile, High-Current IHLP® Inductor



Features

- AEC-Q200 qualified
- Shielded construction
- Handles high transient current spikes without saturation
- Ultra-low buzz noise due to composite construction

OPTOELECTRONICS

TCPT1300X01

Single-Channel Transmissive Sensor



Features

- Accurate position sensor for encoders
- Wide gap of 3 mm; compatible with mechanical tolerances
- Wide operating temperature range from - 40 °C to 105 °C; enhanced temperature release
- Unlimited floor life; moisture sensitivity Level 1 per J-STD-020

RESISTORS

CRCW-HP

Pulse-Proof, High-Power Chip Resistor



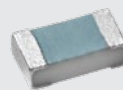
Features

- Combines high power ratings with small case sizes
- Superior anti-surge and pulse characteristics compared to standard resistors
- Saves space on PCB; suitable for densely populated PCBs
- 1 max in 0 Ω jumper is 2 to 3 times higher than in standard jumper

RESISTORS, NON-LINEAR

PTS Thin Film Chip

Platinum SMD Chip Temperature Sensor



Features

- Case sizes: 0603, 0805, and 1206
- Operating temperature: up to 155 °C
- Excellent long term stability: R₀ drift < 0.04 %

RECTIFIERS

MSS1P4

1 A, 40 V Surface-Mount Schottky in MicroSMP



Features

- Very low profile: typical height of 0.65 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- Meets MSL level 1, RoHS-compliant, halogen-free

Vishay Intertechnology's reputation for innovation, reliability, and quality is complemented by a decades-long record of service to the automotive industry.

Key Website Content

AEC-Qualified Products Overview
www.vishay.com/doc?49923

Automotive Grade Products Overview
www.vishay.com/doc?49924

Design Support Tools

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