



## パワートレイン

### 噴射制御と燃料ポンプ向けの主要部品



#### THE VISHAY ADVANTAGE

- AEC準拠
- 高温動作対応
- 高信頼性
- 薄型
- 長寿命
- 高電圧対応SMD構成部品

直接噴射制御



圧電注入制御



燃料ポンプ制御  
(BLDC)





## 直接噴射制御



<b>ALUMINUM CAPACITORS</b> <b>SMD Aluminum Capacitors, High Temperature Up to 150 °C, Low ESR</b>  <a href="#">260 CLA-V</a>  <ul style="list-style-type: none"> <li>High ripple current up to 1400 mA at 150 °C, capacitance up to 3300 µF</li> <li>Useful life up to 2000 h at 150 °C, high vibration capability</li> </ul>	<b>RESISTORS</b> <b>Precision Thin Film Chip Resistor Arrays, Superior Moisture Resistivity</b>  <a href="#">ACAS0612 AT Precision</a>  <ul style="list-style-type: none"> <li>Resistance ratio up to 1:20, superior tracking stability over lifetime</li> <li>Relative TCR to ± 5 ppm/K (tracking), AEC-Q200 qualified, sulfur-resistant</li> </ul>	<b>MOSFETs</b> <b>Dual N-Channel MOSFETs in 5 mm x 6 mm PowerPAK® SO-8L Rated at 60 V, 12 mΩ</b>  <a href="#">SQJB60EP</a>  <ul style="list-style-type: none"> <li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li> <li>Dual configuration in thermally enhanced PowerPAK® SO-8L saves board space</li> </ul>
<b>RECTIFIERS</b> <b>200 V, 2 x 3 A Fred Pt® Hyperfast Rectifiers</b>  <a href="#">VS-6CSH02HM3</a>  <ul style="list-style-type: none"> <li>Hyperfast recovery time, <math>t_{rr} = 27</math> ns, reduced <math>Q_{rr}</math>, and soft recovery</li> <li>Low forward voltage drop and low leakage current</li> </ul>	<b>RECTIFIERS</b> <b>200 V, 2 x 3 A Fred Pt® Hyperfast Rectifiers</b>  <a href="#">VS-8DKH02</a>  <ul style="list-style-type: none"> <li>Dual 5x6 (FlatPAK™) package</li> <li><math>T_j = 175</math> °C</li> </ul>	<b>DIODES</b> <b>Surface-Mount PAR® TVS, 600 W, 6.8 V to 51 V</b>  <a href="#">TA6Fxx</a>  <ul style="list-style-type: none"> <li>Very low-profile DO-221AC (SlimSMA™) package - typical height of 0.95 mm</li> <li><math>T_j = 185</math> °C</li> </ul>
<b>RESISTORS</b> <b>Power Metal Strip® SMD Resistors, Wide Terminal, 1 mΩ to 3 mΩ, 1 W</b>  <a href="#">WSL0612</a>  <ul style="list-style-type: none"> <li>Low EMF, high temperature up to 170 °C</li> </ul>	<b>INDUCTORS</b> <b>Low-Profile, High-Current IHLP® Inductors</b>  <a href="#">IHLP-5050FD-5A</a>  <ul style="list-style-type: none"> <li>Excellent high-temperature performance and noise filtering</li> </ul>	<b>CERAMIC CAPACITORS</b> <b>AEC-Q200 Qualified, Broad Range of Sizes and Working Voltages, C0G (NPO), X7R, and X8R</b>  <a href="#">VJ...31X RoHS Automotive MLCCs</a>  <ul style="list-style-type: none"> <li>RoHS and Green compliant parts available</li> <li>AgPd termination available for epoxy bonding</li> </ul>
<b>MOSFETs</b> <b>N-Channel MOSFETs in 5 mm x 6 mm PowerPAK® SO-8L Rated at 80 V, 7 mΩ</b>  <a href="#">SQJA80EP</a>  <ul style="list-style-type: none"> <li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li> <li>Ultra-low <math>R_{DS(on)}</math>, thermally enhanced PowerPAK® 8x8L replaces D²PAK in less than half of the area</li> </ul>	<b>NON-LINEAR RESISTORS</b> <b>SMD Glass-Protected NTC Thermistors</b>  <a href="#">NTCS...e3</a>  <ul style="list-style-type: none"> <li>Standard series, AEC-Q200 compliant</li> <li>Glass-protected with soft terminations</li> </ul>	<b>MOSFETs</b> <b>Dual N-Channel MOSFETs in 5 mm x 6 mm PowerPAK® SO-8L Rated at 40 V, 9.66 mΩ</b>  <a href="#">SQJB42EP</a>  <ul style="list-style-type: none"> <li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li> <li>Dual configuration in thermally enhanced PowerPAK® SO-8L saves board space</li> </ul>



## 圧電注入制御



<b>RESISTORS</b> <b>Professional High-Temperature Mini-MELF Resistors</b>  <a href="#">MMA 0204 HT</a> <ul style="list-style-type: none"><li>Operating temperature up to 175°C, power handling of 500 mW</li><li>AEC-Q200 qualified, high overall stability <math> \Delta R/R  \leq 0.1\%</math>, intrinsically sulfur-resistant</li></ul>	<b>MOSFETs</b> <b>N-Channel MOSFETs in DPAK Package Rated at 300 V, 10 A, 330 mΩ</b>  <a href="#">SQD10N30-330H</a> <ul style="list-style-type: none"><li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li><li>Up to 300 V operation in DPAK package</li></ul>	<b>RECTIFIERS</b> <b>600 V, 2 A FRED Pt® Ultrafast Rectifiers</b>  <a href="#">VS-2EFU06HM3</a> <ul style="list-style-type: none"><li>SMF (DO-219AB) package, operating temperature up to 175 °C</li><li>Pulse current up to 30 A (6 ms)</li></ul>
<b>RESISTORS</b> <b>Power Metal Strip® SMD Resistors, 0.5 mΩ to 500 mΩ, 1 W</b>  <a href="#">WSL2512</a> <ul style="list-style-type: none"><li>2512 package size, also available in 2816 with 2 W</li></ul>	<b>INDUCTORS</b> <b>High-Isolation Flyback Transformers in Press-Fit and SMD Versions</b>  <a href="#">Customized Transformers</a> <ul style="list-style-type: none"><li>Customized solutions up to kW ranges</li></ul>	<b>INDUCTORS</b> <b>Low-Profile, High-Current IHLP® Inductors</b>  <a href="#">IHLP-5050FD-5A</a> <ul style="list-style-type: none"><li>Excellent high-temperature performance and noise filtering</li></ul>
<b>NON-LINEAR RESISTORS</b> <b>SMD Glass-Protected NTC Thermistors</b>  <a href="#">NTCS...e3</a> <ul style="list-style-type: none"><li>Standard series, AEC-Q200 compliant</li><li>Glass-protected with soft terminations</li></ul>	<b>INDUCTORS</b> <b>Low-Profile, High-Current IHLP® Inductors</b>  <a href="#">IHLP-2525CZ-5A</a> <ul style="list-style-type: none"><li>Excellent high-temperature performance for DC/DC converter input and output filters</li></ul>	<b>CERAMIC CAPACITORS</b> <b>AEC-Q200 Qualified, Broad Range of Sizes and Working Voltages, C0G (NPO), X7R, and X8R</b>  <a href="#">VJ...31X RoHS Automotive MLCCs</a> <ul style="list-style-type: none"><li>RoHS and Green compliant parts available</li><li>AgPd termination available for epoxy bonding</li></ul>
<b>DIODES</b> <b>Unidirectional and Bidirectional Power SMD TVS Diodes, SMA Package, Up to 400 W</b>  <a href="#">SMAJxx</a> <ul style="list-style-type: none"><li>DO-214AC (SMA) package, high-voltage clamping</li><li>6.4 V to 231 V</li></ul>	<b>ALUMINUM CAPACITORS</b> <b>Radial Miniature, High-Voltage, Up to 450 V with CR Up to 220 µF</b>  <a href="#">152RMH</a> <ul style="list-style-type: none"><li>High voltage applications, 105 °C long life</li><li>Miniaturized, ultra-high CV product per unit volume</li></ul>	<b>MOSFETs</b> <b>N-Channel MOSFETs in 5 mm x 6 mm PowerPAK®, 100 V, 32 A, 11 mΩ</b>  <a href="#">SQJ402EP</a> <ul style="list-style-type: none"><li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li><li>100 V MOSFETs for use in low-side flyback converters</li></ul>



## 燃料ポンプ制御 (BLDC)



<p><b>ALUMINUM CAPACITORS</b> <b>SMD Aluminum Capacitors, High Temperature Up to 150 °C, Low ESR</b></p> <p><a href="#">260 CLA-V</a></p> <ul style="list-style-type: none"> <li>High ripple current up to 1400 mA at 150 °C, capacitance up to 3300 µF</li> <li>Useful life up to 2000 h at 150 °C, high vibration capability</li> </ul>	<p><b>MOSFETs</b> <b>N-Channel MOSFETs in 5 mm x 6 mm PowerPAK® SO-8L Rated at 40 V, 3.2 mΩ</b></p> <p><a href="#">SQJ444EP</a></p> <ul style="list-style-type: none"> <li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li> <li>Logic level <math>V_{th}</math>, low <math>R_{DS(on)}</math>, thermally enhanced PowerPAK® SO-8L replaces DPAK in less than half of the area</li> </ul>	<p><b>MOSFETs</b> <b>N-Channel MOSFETs in 5 mm x 6 mm PowerPAK® SO-8L Rated at 40 V, 3.0 mΩ</b></p> <p><a href="#">SQJA46EP</a></p> <ul style="list-style-type: none"> <li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li> <li>Thermally enhanced PowerPAK® SO-8L replaces DPAK in less than half of the area</li> </ul>
<p><b>RESISTORS</b> <b>Power Metal Strip® SMD Resistors, Very High Power (3 W), Low Value (to 0.0005 Ω)</b></p> <p><a href="#">WSLP2512</a></p> <ul style="list-style-type: none"> <li>Very high power rating of 3 W in 2512 package</li> <li>Extremely low resistance values from 0.0005 Ω to 0.01 Ω and tolerance of 1 %</li> </ul>	<p><b>RECTIFIERS</b> <b>1 A, 200 V FRED Pt® Hyperfast Rectifiers</b></p> <p><a href="#">VS-1EFH02HM3</a></p> <ul style="list-style-type: none"> <li>Hyperfast recovery time, <math>t_{rr} = 25</math> ns, reduced <math>Q_m</math>, and soft recovery</li> <li>DO-219AB (SMF) package, high <math>T_j</math> of 175 °C</li> </ul>	<p><b>RESISTORS</b> <b>Power Metal Strip® SMD Resistors, Wide Terminal, 1 mΩ to 6 mΩ, 6 W</b></p> <p><a href="#">WSL1020</a></p> <ul style="list-style-type: none"> <li>TCR &lt; 20 ppm/K, high-temperature performance up to 170 °C</li> </ul>
<p><b>MOSFETs</b> <b>Dual N-Channel MOSFETs in 8 mm x 8 mm PowerPAK®, 40 V, 100 A, 3.4 mΩ</b></p> <p><a href="#">SQJQ904E</a></p> <ul style="list-style-type: none"> <li>AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation</li> <li>High power density dual PowerPAK® 8x8L offers significant reduction in PCB area</li> </ul>	<p><b>NON-LINEAR RESISTORS</b> <b>SMD Glass-Protected NTC Thermistors</b></p> <p><a href="#">NTCS...e3</a></p> <ul style="list-style-type: none"> <li>Standard series, AEC-Q200 compliant</li> <li>Glass-protected with soft terminations</li> </ul>	<p><b>INDUCTORS</b> <b>Power SMD IHLP® Storage Inductors, E-Field Shielded, Inductance of 0.22 µH to 22 µH</b></p> <p><a href="#">IHLE-4040DD-5A</a></p> <ul style="list-style-type: none"> <li>Shielded housing provides excellent protection against EMI (B and E fields)</li> <li>Optimized for high frequency</li> </ul>
<p><b>CERAMIC CAPACITORS</b> <b>AEC-Q200 Qualified, Broad Range of Sizes and Working Voltages, C0G (NPO), X7R, and X8R</b></p> <p><a href="#">VJ...31X RoHS Automotive MLCCs</a></p> <ul style="list-style-type: none"> <li>RoHS and Green compliant parts available</li> <li>AgPd termination available for epoxy bonding</li> </ul>	<p><b>CERAMIC CAPACITORS</b> <b>High Operating Temperature, Automotive Grade Leaded MLCC Capacitors</b></p> <p><a href="#">HOTcap® K...H, A...R, K...R</a></p> <ul style="list-style-type: none"> <li>High-reliability MLCC insert with wet build process</li> <li>High operating temperature (up to 175 °C for K...H and up to 160 °C for A...R and K...R), rated voltages: 50 V, 100 V, 200 V</li> </ul>	