

## 主要元件

# 发动机控制单元 - 12 V / 24 V



发动机冷却  
(BLDC)



尾气排放  
控制系统

### VISHAY 优势

通过 AEC 认证

耐高温

高可靠性

小尺寸

长寿命

高抗振性

## 发动机冷却 (BLDC)



### ALUMINUM CAPACITORS

**SMD Aluminum Capacitors, High Temperature Up to 150 °C, Low ESR**



[260 CLA-V](#)

- High ripple current up to 1400 mA at 150 °C, capacitance up to 3300  $\mu$ F
- Useful life up to 2000 h at 150 °C, high vibration capability

### MOSFETs

**N-Channel MOSFETs in 8 mm x 8 mm PowerPAK®, 40 V, 160 A, 1.2 m $\Omega$**

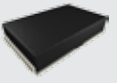


[SQJQ100EL](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Ultra-low  $R_{DS(on)}$ , thermally enhanced PowerPAK® 8x8L replaces D<sup>2</sup>PAK in less than half of the area

### RESISTORS

**Power Metal Strip® SMD Resistors, High Power (7 W), Low Value (Down to 0.001  $\Omega$ )**



[WSHM2818](#)

- Very high power rating of 7 W in small 2818 package
- Very low resistance values, 0.001  $\Omega$  to 0.10  $\Omega$ , with tolerance of 1 %

### NON-LINEAR RESISTORS

**SMD Glass-Protected NTC Thermistors**



[NTCS...e3](#)

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

### INDUCTORS

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



[IHLP-6767GZ-5A](#)

- Lowest DCR/ $\mu$ H in this package size
- High temperature up to 155 °C, shielded construction

### CERAMIC CAPACITORS

**AEC-Q200 Qualified, Broad Range of Sizes and Working Voltages, C0G (NPO), X7R, and X8R**



[VJ...31X RoHS Automotive MLCCs](#)

- RoHS and Green compliant parts available
- AgPd termination available for epoxy bonding

### MOSFETs

**N-Channel MOSFETs in 8 mm x 8 mm PowerPAK®, 40 V, 200 A, 1.7 m $\Omega$**



[SQJQ402E](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Low  $R_{DS(on)}$ , logic level MOSFET, PowerPak® 8x8L replaces D<sup>2</sup>PAK in less than half of the area

### CERAMIC CAPACITORS

**High Operating Temperature, Automotive Grade Leaded MLCC Capacitors**



[HOTcap® K...H, A...R, K...R](#)


- High-reliability MLCC insert with wet build process
- 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

## 尾气排放控制系统



MOSFETs

**N-Channel MOSFETs as Known Good Die (KGD) Rated at 60 V, 71 mΩ**




[SQC462BKGD](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Efficient KGD packaging allows high power density and reduced parasitics

MOSFETs

**P-Channel MOSFETs as Known Good Die (KGD) Rated at -60 V, 14 mΩ**




[SQC461KGD](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Efficient KGD packaging allows high power density and reduced parasitics

RECTIFIERS

**Schottky Diode Chips, 15 V to 150 V, Up to 3 A**




[SC036H100S6B](#)

- Wafers in box, sawn on film, Al or Ag top metal

DIODES

**Surface Mount PAR® TVS, 11 V to 48 V Breakdown Voltage**



[SM8S10](#)

- AEC-Q101 qualified and high power up to 6600 W (10 x 1000 μs)
- Meet ISO7637-2 surge specification (varied by test conditions)

RESISTORS

**Power Metal Strip® SMD Resistors, High Temperature (275 °C), High Power (1 W)**

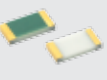


[WSLT2010...18](#)

- High temperature for harsh environments, resistance values down to 0.01 Ω
- Power Metal Strip® construction offers high reliability in critical applications

RESISTORS

**Precision High-Temperature (215 °C) Thin Film Resistors, Low TCR with ± 5 ppm/°C**

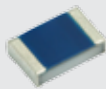


[PLTT0603](#)

- Gold terminations, Special Passivation Method (SPM)

NON-LINEAR RESISTORS

**Platinum SMD Flat Chip Temperature Sensors**




[PTS AT Series](#)

- Standard characteristics according to IEC 60751
- Short reaction times down to 2 s (in air)

NON-LINEAR RESISTORS

**AEC-Q200 Qualified, Broad Range of Sizes and Working Voltages, C0G (NPO), X7R, and X8R**




[VJ...31X RoHS Automotive MLCCs](#)

- RoHS and Green compliant parts available
- AgPd termination available for epoxy bonding

CERAMIC CAPACITORS

**High Operating Temperature, Automotive Grade Leaded MLCC Capacitors**



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# 聚焦 SQ Rugged 系列汽车级 MOSFET

## 专用汽车级工艺流程，减少缺陷

Vishay Siliconix SQ 系列 AEC-Q101 认证功率 MOSFET 采用专为汽车应用而优化的特殊工艺制造。这些汽车级功率 MOSFET 采用低导通电阻 N 沟道和 P 沟道 TrenchFET® 技术，额定最大结温 175 °C。

封装类型包括传统 D<sup>2</sup>PAK (TO-263)、DPAK (TO-252)、SO-8、TSOP-6、SOT-23、SC-70 和节省空间的创新型 PowerPAK® 封装，尺寸范围为 2 mm x 2 mm (小) 至 8 mm x 8 mm (大)。8 mm x 8 mm PowerPAK® 8x8L 封装提供低至 1.2mΩ 的导通电阻和大电流耐受能力，尺寸不到 D<sup>2</sup>PAK 封装的一半，可显著节省电路板空间。5 mm x 6 mm PowerPAK® SO-8L 封装提供低至 3 mΩ 的导通电阻和低至 1.5 °C/W 的热阻，尺寸不到 DPAK 封装的一半。另外该封装还提供双对称和不对称配置，允许按照具体应用对高边和低边 MOSFET 进行优化。3 mm x 3 mm PowerPAK® 1212-8 封装的导通电阻与电流耐受能力与 SO-8 封装相似，但尺寸仅为后者的三分之一。另外该封装还提供双配置，并具有适合自动光学检查 (AOI) 的可润湿侧翼。尺寸更小的 2 mm x 2 mm PowerPAK® SC-70 封装提供类似于大尺寸 TSOP-6 和 SOT-23 封装的低导通电阻和电流耐受能力。此外，Vishay 还提供已知良品裸片 (KGD) 的包装，裸片经单一化 (singulated) 和测试后进行编带卷盘封装，以保证高质量和可靠的性能。

欲知有关这些和其他汽车级 MOSFET 的更多详细信息，敬请访问 <http://www.vishay.com/mosfets/automotive-mosfets/>

<p><b>D<sup>2</sup>PAK</b></p>  <p>15.88 x 10.41 x 4.83</p>	<p><b>DPAK / 反向 DPAK</b></p>  <p>10.41 x 6.73 x 2.38</p>	<p><b>PowerPAK® 8x8L</b></p>  <p>8.0 x 8.0 x 1.9</p>	<p><b>PowerPAK® SO-8L</b></p>  <p>6.15 x 5.13 x 1.14</p>	<p><b>SO-8</b></p>  <p>5.0 x 6.2 x 1.75</p>
<p><b>PowerPAK® 1212</b></p>  <p>3.3 x 3.3 x 1.2</p>	<p><b>TSOP-6</b></p>  <p>3.1 x 2.98 x 1.1</p>	<p><b>SOT-23</b></p>  <p>3.04 x 2.64 x 1.12</p>	<p><b>SC-70</b></p>  <p>2.2 x 2.4 x 1.1</p>	<p><b>PowerPAK® SC-70</b></p>  <p>2.15 x 2.15 x 0.8</p>

长 x 宽 x 高 (mm)