

主要元件 纯电动汽车 (FEV)



VISHAY 优势

- 通过 AEC 认证
- 耐高温
- 高可靠性
- 采用 SMD 封装的新型高压被动元件
- 高压半导体
- 瞬态电压抑制能力

电机驱动
(DC/AC)



电池管理
和 DC/DC



车载
充电器




电机驱动 (DC/AC)



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

NON-LINEAR RESISTORS

NTC Thermistors, Low Thermal Gradient Lug Sensors




[NTCALUG02A](#)

- Low thermal gradient surface temperature sensor
- High insulation voltage

MODULES

Trench FS IGBT Modules



[VS-GC30C065TB](#)

- Optimized for use with FRED Pt® Gen 4 ultrafast diodes
- Low collector-to-emitter voltages, extremely low conduction losses

RESISTORS

Surface-Mount Molded Dividers, High-Voltage




[CDMx](#)

- High voltage up to 3000 V, sulfur-resistant
- Automotive compliant terminations, wide range of resistance values and ratios

**Preliminary*

INDUCTORS

EMI Filters with Flat Copper Wire as SMD or Leaded Up to 260 A




[Customized EMI Filters](#)

- Customized solutions for 48 V applications, low DCR, high current

FILM CAPACITORS

High Performance DC-Link Capacitors for Automotive Traction Applications (EV/HEV)



[MKP1849](#)

- High voltage, high capacitance, high ripple current

RESISTORS

Wirebondable Gate Resistors for IGBT Applications




[IGBR](#)

- Back-contact resistors for single wirebond assembly with power ratings up to 4 W
- Available case sizes from 0202 to 2010

FILM CAPACITORS

Metallized Polypropylene DC-Link Film Capacitors, 450 V_{DC} to 1000 V_{DC}




[MKP1848S](#)

- OBC and HEV inverter DC link
- High ripple current and high capacitance up to 100 µF

RECTIFIERS

600 V, 30 A Hyperfast Rectifiers



[VS-ETH3006SHM3](#)

- TO-263AB (D²PAK) power package optimized for fast battery charging systems and main inverter applications up to 20 kW

电池管理和 DC/DC

<p>CERAMIC CAPACITORS</p> <p>X1/Y2 AC Line Rated Ceramic Disc Capacitors for Automotive Applications</p>  <p>AY2</p> <ul style="list-style-type: none"> • AEC-Q200 qualified, X1/Y2 safety rating according to IEC 60384-14, 3rd edition • Proven to withstand 3000 temperature cycles from -55 °C to +125 °C 	<p>RESISTORS</p> <p>Long-Side Termination Thick Film Resistors, 250 mW to 2 W in 0406 to 1225 sizes, 1 Ω - 1 mΩ</p>  <p>RCL e3</p> <ul style="list-style-type: none"> • Operating temperature up to 155 °C , TCR = 100 ppm/K to 200 ppm/K 	<p>MOSFETS</p> <p>Dual N-Channel MOSFETs in 5 mm x 6 mm PowerPAK SO-8L, 40 V, 33 mΩ</p>  <p>SQJ946EP</p> <ul style="list-style-type: none"> • AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation • Optimized for high-frequency DC/DC applications, lower switching losses
<p>RESISTORS</p> <p>High Pulse Load Carbon Film MELF Resistors, Pulse Handling Up to 3 kW, ESD Up to 16 kV</p>  <p>CMB 0207</p> <ul style="list-style-type: none"> • 1.0 W rated dissipation in MELF 0207 package • Resistance from 2.2 Ω to 1.5 MΩ 	<p>RESISTORS</p> <p>Thin Film Chip Resistors, Resistance = 1 Ω to 10 mΩ, TCR = 25 ppm/K to 50 ppm/K</p>  <p>MCT 0603 AT</p> <ul style="list-style-type: none"> • Tolerance = 0.5 % to 1 % • Power rating 125 mW 	<p>RESISTORS</p> <p>SMD Power Resistors, 35 W, 10 mΩ to 550 KΩ, Non-Inductive</p>  <p>D2TO35</p> <ul style="list-style-type: none"> • TO-263 package, TCR = 150 ppm/K • AEC-Q200 qualified
<p>DIODES</p> <p>400 W PAR® TVS Diodes, Voltage = 6.8 V to 43 V, T_j = 185 °C</p>  <p>TPSMA6.8</p> <ul style="list-style-type: none"> • DO-214AC (SMA) package to protect ICs, MOSFETs, and signal lines of sensor units against voltage transients induced by inductive load switching and lightning 	<p>RESISTORS</p> <p>Power Metal Strip® Battery Shunt Resistors, Very Low Values (100 μΩ, 125 μΩ, and 250 μΩ)</p>  <p>WSBS8518</p> <ul style="list-style-type: none"> • High power to resistor size ratio • Low thermal EMF, < 3 μV / °C, for accurate current sensing 	<p>NON-LINEAR RESISTORS</p> <p>NTC Thermistors, Mini Lug Sensors</p>  <p>NTCALUG03</p> <ul style="list-style-type: none"> • Robust surface temperature sensors • AEC-Q200 compliant, UL recognized
<p>DIODES</p> <p>500 mW Zener diodes in < 0.6 mm low-profile MicroSMF package</p>  <p>PLZ Series Zener Diode</p> <ul style="list-style-type: none"> • Excellent stability for voltage stabilization and reference voltage generation • AEC-Q101 qualified versions available 		

车载充电器



CERAMIC CAPACITORS

X1/Y2 AC Line Rated Ceramic Disc Capacitors for Automotive Applications




[AY2](#)

- AEC-Q200 qualified, X1/Y2 safety rating according to IEC 60384-14, 3rd edition
- Proven to withstand 3000 temperature cycles from -55 °C to +125 °C

RESISTORS

Power Resistors, 100 W, 15 mΩ to 1 MΩ, Non-Inductive



[LTO100](#)

- TO-247 package, TCR = 150 ppm/K
- AEC-Q200 qualified

RESISTORS

Wirebondable Gate Resistor for IGBT Applications




[IGBR](#)

- Back-contact resistors for single wirebond assembly with power rating up to 4 W
- Available case sizes from 0202 to 2010

INDUCTORS

High Isolation as Press-Fit or SMD Version Flyback Transformers

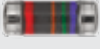


[Customized Transformers](#)

- Customized solutions up to kW ranges

RESISTORS

High Pulse Load Carbon Film MELF Resistors, Pulse Handling Up to 3 kW, ESD Up to 16 kV

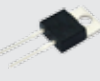


[CMB 0207](#)

- 1.0 W rated dissipation in MELF 0207 package
- Resistance from 2.2 Ω to 1.5 MΩ

RECTIFIERS

15 A, 1200 V FRED Pt® Hyperfast Rectifiers




[VS-15ETU12HN3](#)

- AEC-Q101 qualified, hyperfast and soft recovery time with reduced Q_{rr} in TO-220AC package
- 175 °C maximum operating temperature

NON-LINEAR RESISTORS

NTCALUG, Custom Capabilities NTC LUG Ring Tongue




[NTCALUG](#)

- Minimum breakdown voltages: 500 V_{AC} Up to 3000 V_{AC}

MODULES

Press-Fit Semiconductor Power Modules for IGBT or MOSFET Drives




[EMIPAK-1B / 2B](#)

- 600 V to 650 V, or lower voltages upon customer request

RESISTORS

SMD Power Resistors, 35 W, 10 mΩ to 550 kΩ, Non-Inductive




[D2TO35](#)

- TO-263 package, TCR = 150 ppm/K
- AEC-Q200 qualified

RESISTORS

Surface-Mount Molded Dividers, High-Voltage



[CDMx](#)

- High voltage up to 3000 V, sulfur-resistant
- Automotive compliant terminations, wide range of resistance values and ratios

*Preliminary

INDUCTORS

1 kW to 3 kW Standard Power Planar Transformers and Custom Power Planar Inductors




[Planar Series](#)

- Planar and flat wire designs available for improved efficiency

FILM CAPACITORS

Interference Suppression Film Capacitors, MKP Radial Potted Type

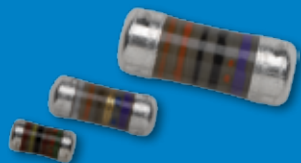


[MKP339](#)

- RFI X2 capacitor for standard across-the-line applications
- Automotive grade, AEC-Q200 compliant

聚焦 MELF 电阻器

全球最可靠及可预见的高性能薄膜电阻器



25 年来, Vishay MELF 电阻器成功满足汽车业的苛刻要求。它们提供优异的 SMD 电阻器性能, 如精度、稳定性、可靠性和耐脉冲负载性能。MELF 电阻器的圆柱状结构提供相对于安装空间的最佳额定功率和耐脉冲负载性能。持续的技术进步使其长期稳定性和耐湿性不断改进, 并达到 +175 °C 的高工作温度。

主要性能优势:

- 器件行为可预测
- 零缺陷理念
- 适应恶劣的工作环境
- 长期稳定性
- 耐湿性
- MM_HV 系列工作电压可达 1 kV
- 温度循环试验 (可达 2000 次循环), 无铅封装工艺
- 绝缘电压可达 500 V

认证

- EN 140401-803
- AEC-Q200

所有产品完全无铅并符合全球汽车申报物质清单 (GADSL) 规定, 包括完全符合 RoHS 指令。

温度系数、容差及稳定性

电阻温度系数低至 ± 5 ppm/K, 公差低至 $\pm 0.02\%$ 。长期稳定性使高精度 MELF 电阻器在工作 8000 小时后仍具有 $< \pm 0.05\%$ 的优异的最大阻值变化率 ($\Delta R/R$)。

耐脉冲负载性能

MELF 电阻器的另一个优点是其在各种过载条件下的可靠性。MELF 电阻器的金属膜技术和圆柱状结构使其耐脉冲负载性能优于标准厚膜和薄膜片式电阻器。另外, MELF 电阻器还可采用先进的碳膜技术, 1206 焊盘尺寸的 ESD 等级可达 6 kV, 2512 焊盘尺寸的防电涌等级可达 10 kV。如下图所示, 厚膜扁平片式电阻器失效的脉冲负载远低于薄膜扁平片式电阻器, 而薄膜和碳膜 MELF 电阻器的表现则优于这两种电阻器。

如有技术问题, 请联系: melf@vishay.com

