

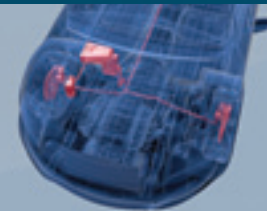
アクティブセーフティ用主部品



THE VISHAY ADVANTAGE

- AEC準拠
- 高温動作性能
- 薄型
- 高信頼性
- 長寿命

強化された
電気ブレーキ (EEB)



電子スタビリティ
プログラム (ESP)
ビークルスタビリティ
コントロール (VSC)



電気式駐車ブレーキ
(EPB)
統合駐車ブレーキ
(IPB)



運転者支援システム
(ADAS)





最先端電気式ブレーキ (EEB)



RESISTORS

Thin Film Resistors, 4.7 Ω to 3.01 MΩ, 0402 to 1210 Case Sizes, 50 V to 200 V



[TNPW e3](#)

- Excellent stability $|\Delta R/R| \leq 0.05\%$ after 1000 h at 70 °C, 0402 to 1210 case sizes

MOSFETs

N-Channel MOSFETs in 8 mm x 8 mm PowerPAK®, 40 V, 160 A, 1.2 mΩ



[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 D²PAK in less than half of the area

INDUCTORS

Power SMD IHLP® Storage Inductors, 0.22 μH to 22μH



[IHLP5050FD-5A](#)

- Soft saturation, high rated current, temperature up to 155 °C

RESISTORS

Power Metal Strip® SMD Resistors, 4-Terminal, Low Value (Down to 0.0001 Ω)



[WSK1216](#)

- High power rating of 3 W to 5 W with TCR of 20 ppm/K
- Very low resistance values, 0.0001 Ω to 0.004 Ω, 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

SMD Low-Profile, High-Current IHLP® Inductors, 0.22 μH to 33 μH



[IHLP-3232DZ-5A](#)

- High-temperature (up to +155 °C), high-current shielded inductors

INDUCTORS

Low-Profile, High-Current IHLP® Inductors



[IHLP-4040DZ-5A](#)

- Excellent high-current performance for noise filters
- High-temperature operation up to 155 °C

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

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 μF
- Useful life up to 2000 h at 150 °C, high vibration capability

MOSFETs

N-channel MOSFET in Reverse DPAK Rated at 40 V, 3.8 mΩ



[SQR50N04-3m8 GE3](#)


- AEC-Q101 Qualified, 100 % UIS & RG tested with up to 175 °C operation
- Reverse DPAK package allows excellent heat transfer and is good for high current application such as park brake

電子スタビリティ プログラム(ESP) ビークルスタビリティ コントロール(VSC)



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 µF
- Useful life up to 2000 h at 150 °C, high vibration capability

RESISTORS

SMD Thick Film Resistors, High Stability, Sulfur-Resistant



[RCA0603](#)

- TCR = 50 ppm/K to 200 ppm/K

MOSFETS

N-Channel MOSFETs in 8 mm x 8 mm PowerPAK®, 40 V, 160 A, 1.2 mΩ




[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 D²PAK in less than half of the area

MOSFETS

Dual N-Channel MOSFETs in 8 mm x 8 mm PowerPAK®, 40 V, 100 A, 3.9 mΩ




[SQJQ900E](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- High power density dual PowerPAK® 8x8L offers significant reduction in PCB area

MOSFETS

N-Channel MOSFETs in 5 mm x 6 mm PowerPAK® SO-8L Rated at 40 V, 3.0 mΩ




[SQJA46EP](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Thermally enhanced PowerPAK® SO-8L replaces DPAK in less than half of the area

INDUCTORS

Low-Profile, High-Current IHLP® Inductors




[IHLP-2525CZ-5A](#)

- Excellent high-temperature performance for DC/DC converter input and output filters

RESISTORS

Power Metal Strip® SMD Resistors, Wide Terminal, 1 mΩ to 3 mΩ, 1 W




[WSL0612](#)

- Low EMF, high temperature up to 170 °C

RECTIFIERS

1A, 200 V FRED Pt® Hyperfast Rectifiers




[VS-1EFH02HM3](#)

- Hyperfast recovery time, $t_{rr} = 25$ ns, reduced Q_{rr} , and soft recovery
- DO-219AB (SMF) package, high T_j of 175 °C

INDUCTORS

Low-Profile, High-Current IHLP® Inductors



[IHLP-4040DZ-5A](#)

- Excellent high-current performance for noise filters
- High-temperature operation up to 155 °C

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

TANTALUM CAPACITORS

Solid Tantalum Surface-Mount Chip Capacitors, Molded Case, Automotive Grade



[TH3 / TH4](#)

- High-temperature molded tantalum capacitors, HI-TMP®, TH4 = up to 175 °C, TH3 = up to 150 °C




電気式駐車ブレーキ(EPB) 統合駐車ブレーキ(IPB)



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 μF
- Useful life up to 2000 h at 150 °C, high vibration capability

MOSFETs

Dual N-Channel MOSFETs in 8 mm x 8 mm PowerPAK®, 40 V, 100 A, 3.9 mΩ



[SQJQ900E](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- High power density dual PowerPAK® 8x8L offers significant reduction in PCB area

INDUCTORS

Shielded EMI Filter Up to 190 A I_{DCR}, 2.2μH, Ultra-Low DCR (0.22 mΩ)




[IHXL-2000VZ-5A](#)

- Very high-current and high-temperature operation for filters and energy storage

RESISTORS

Power Metal Strip® SMD Resistors, 4-Terminal, Low Value (Down to 0.0001 Ω)




[WSK1216](#)

- High power rating of 3 W to 5 W with TCR of 20 ppm/K
- Very low resistance values, 0.0001 Ω to 0.004 Ω, with tolerance of 1 %

MOSFETs

N-Channel MOSFETs in 5 mm x 6 mm PowerPAK® SO-8L Rated at 40 V, 3.0 mΩ




[SQJA46EP](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Thermally enhanced PowerPAK® SO-8L replaces DPAK in less than half of the area

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, 160 A, 1.2 mΩ




[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 D²PAK in less than half of the area

INDUCTORS

Low-Profile, High-Current IHLP® Inductors



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

- Lowest DCR/μH in this package size
- High temperature up to 155 °C, shielded construction

TANTALUM CAPACITORS

Solid Tantalum Surface-Mount Chip Capacitors, Molded Case, Automotive Grade



[TH3 / TH4](#)


- High-temperature molded tantalum capacitors, HI-TMP®, TH4 = up to 175 °C, TH3 = up to 150 °C



運転者支援システム(ADAS)

MOSFETs

Dual N-Channel MOSFETs in 5 mm x 6 mm PowerPAK®, 40 V, 11 mΩ / 22 mΩ




[SQJ942EP](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Optimized for high-frequency DC/DC applications, lower switching losses

INDUCTORS

Low-Profile, High-Current IHLP® Inductors




[IHLP-1616BZ-A1](#)

- Shielded construction, lowest DCR/μH in this package size
- Excellent DC/DC energy storage up to 5 MHz

DIODES

SMD Power ESD Diodes, Up to ± 30 kV, I_{FSM} = 50 A




[SMFxx](#)

- SMF package: 3.5 mm x 1.9 mm
- Breakdown voltage = 6.4 V to 64.4 V

OPTOELECTRONICS

Integrated Proximity and Ambient Light Sensors with I²C Interface




[VCNL4020X01](#)

- Low-profile QFN SMD package, 16 bit resolution, proximity distance up to 200 mm
- Suitable for extended detection range, gesture function with external emitters

MOSFETs

Dual N-Channel MOSFETs in 5 mm x 6 mm PowerPAK®, 12 V, 2.7 mΩ / 7.4 mΩ




[SQJ202EP](#)

- AEC-Q101 qualified, 100 % UIS and RG tested with up to 175 °C operation
- Low-voltage, high-frequency synchronous buck applications, lower switching losses

RECTIFIERS

Surface-Mount Schottky Barrier Rectifiers




[MSS1P4](#)

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

INDUCTORS

Low-Profile, High-Current IHLP® Inductors



[IHLP-2525CZ-5A](#)

- Excellent high-temperature performance for DC/DC converter input and output filters

RESISTORS

Precision Thin Film Resistor Arrays, Superior Moisture Resistivity, TCR ± 0.05



[ACAS 0606 AT](#)

- Arbitrary resistance ratio up to 1:20, superior tracking stability over lifetime
- Relative TCR down to ± 5 ppm/K (tracking), AEC-Q200 qualified

TANTALUM CAPACITORS

Solid Tantalum Chip Capacitors, High CV Leadframeless Molded, Automotive Grade



[TP8](#)

- Smallest AEC-Q200 qualified tantalum capacitors with case sizes as small as 0603

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

INDUCTORS

High-Curent SMD Inductors with E-Field Shielding and 155 °C Operating Temperature




[IHL-3232DD-5A](#)

- Excellent EMI protection, double-shielded

MOSFETs

Dual N-channel MOSFET in Small 2 mm x 2 mm SC-70 Package Rated at 20 V, 28 mΩ



[SQ1912AEEH-T1 GE3](#)

- AEC-Q101 Qualified, 100 % UIS & RG tested with up to 175 °C operation
- Compact part for use in sync buck power supply for camera system

IHLP®インダクタ損失計算ツールの特長

ビシエイ社のIHLP損失計算ツールは、回路の動作条件に応じて設計者が最適なIHLPの選択を支援する無料ツールです。このツールは、コア(鉄損)およびACとDCの銅損を含む、インダクタ損失のシミュレーションを提供します。温度上昇や最終温度も、推定損失に基づき算出されます。設計者はこのツールで複数のインダクタをサイズ、インダクタンス値などの項目で比較することができるため選定作業が容易になります。

この計算ツールはバック、ブースト、バック/ブースト式コンバータに対応します。

計算ツールには10個の入力項目(入力電圧、出力電圧、スイッチ(FET)電圧降下、ダイオード(またはsync FET)電圧降下、出力電流、周波数、周囲温度、インダクタンス値)があり、これらの入力値を基に計算を行います。インダクタンス値は左側のラジオボタンから選ぶことができます。

注:本ツールはシミュレーションのみですので、必ず実際の回路で設計を検証をしてください。

アクセスはこちらから:www.vishay.com/inductors/calculator-home-list/

ユーザーガイドはこちらから:www.vishay.com/doc?49421

重要な設計基準

IHLPインダクタの推奨最大部品温度は125 °Cです。周辺温度を除算することで、部品の最大許容温度上昇が算出できます。この数値が40 °C以上であれば、許容上昇温度を40 °Cに設定することを推奨します。リップル電流の推奨範囲はインダクタ電流に対して30 % ~ 50 %です。これは、インダクタのサイズとコスト、コンデンサのサイズとコストのトレードオフに基づきます。最大ピーク電流は選択したインダクタの最大値以下で設定することを推奨しますが、鉄粉材料のソフトな飽和特性を考えると最大値以上での設定も可能ですが慎重に行う必要があります。計算ツールは連続の伝導モードのみに対応します。非連続の伝導モードで提供される情報は、信頼性が低いいため、ユーザの判断を必要とします。

