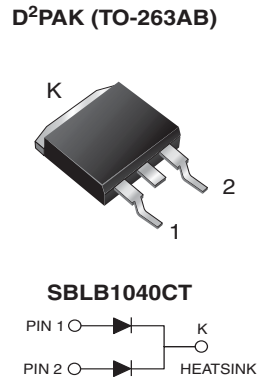
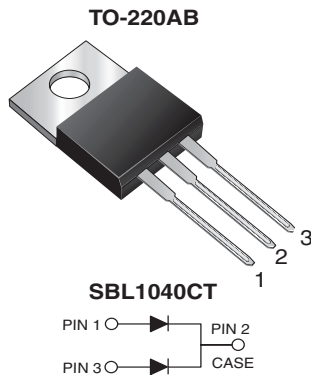


Dual Common Cathode Schottky Rectifier



FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D²PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB package)
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

DESIGN SUPPORT TOOLS

[click logo to get started](#)

3D
Models
Available

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, and polarity protection application.

| PRIMARY CHARACTERISTICS | |
|-------------------------|---|
| $I_{F(AV)}$ | 2 x 5 A |
| V_{RRM} | 40 V |
| I_{FSM} | 175 A |
| V_F | 0.55 V |
| T_J max. | 125 °C |
| Package | TO-220AB, D ² PAK (TO-263AB) |
| Circuit configuration | Common cathode |

MECHANICAL DATA

Case: TO-220AB, D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-E3 - RoHS-compliant, commercial grade
 Base P/NHE3_X - RoHS-compliant, AEC-Q101 qualified
 ("_X" denotes revision code, e.g. A, B, ...)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

| MAXIMUM RATINGS ($T_C = 25\text{ °C}$ unless otherwise noted) | | | |
|--|---------------------------|-------------|------|
| PARAMETER | SYMBOL | SBL1040CT | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 40 | V |
| Working peak reverse voltage | V_{RWM} | 28 | |
| Maximum DC blocking voltage | V_{DC} | 40 | |
| Maximum average forward rectified current at $T_C = 107\text{ °C}$ | total device per diode | $I_{F(AV)}$ | 10 |
| | | $I_{F(AV)}$ | 5.0 |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 175 | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -40 to +125 | °C |



ELECTRICAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | TEST CONDITIONS | VALUE | UNIT |
|--|-------------------------------|----------------------|-------------------------|------|
| Maximum instantaneous forward voltage per diode | V _F ⁽¹⁾ | 5.0 A | 0.55 | V |
| Maximum instantaneous reverse current at DC blocking voltage per diode | I _R ⁽²⁾ | Rated V _R | T _C = 25 °C | 0.5 |
| | | | T _C = 100 °C | 50 |

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | SBL | SBLB | UNIT |
|--------------------------------------|------------------|-----|------|------|
| Typical thermal resistance per diode | R _{θJC} | 3.0 | 3.0 | °C/W |

ORDERING INFORMATION (Example)

| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|----------|----------------------------------|-----------------|--------------|---------------|---------------|
| TO-220AB | SBL1040CT-E3/45 | 1.85 | 45 | 50/tube | Tube |
| TO-263AB | SBLB1040CT-E3/45 | 1.35 | 45 | 50/tube | Tube |
| TO-263AB | SBLB1040CT-E3/81 | 1.35 | 81 | 800/reel | Tape and reel |
| TO-263AB | SBLB1040CTHE3_B/P ⁽¹⁾ | 1.35 | P | 50/tube | Tube |
| TO-263AB | SBLB1040CTHE3_B/I ⁽¹⁾ | 1.35 | I | 800/reel | Tape and reel |

Note

- (1) AEC-Q101 qualified, available in D²PAK (TO-263AB) package only



RATINGS AND CHARACTERISTICS CURVES (T_C = 25 °C unless otherwise noted)

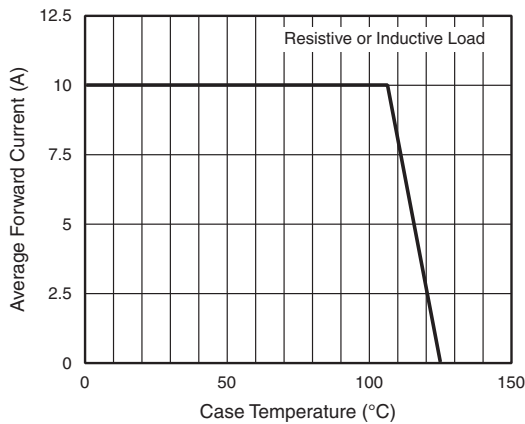


Fig. 1 - Forward Current Derating Curve

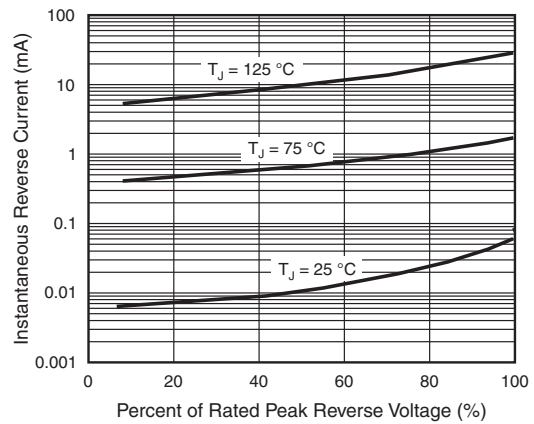


Fig. 4 - Typical Reverse Characteristics Per Diode

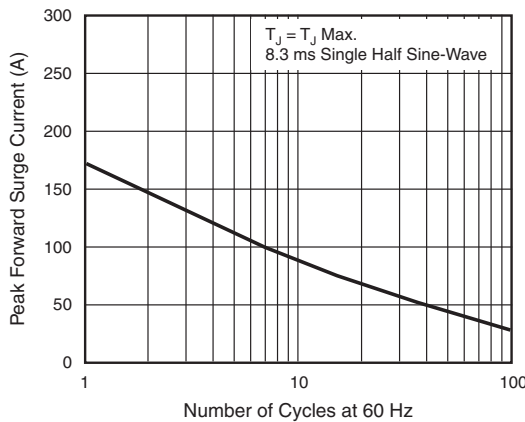


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

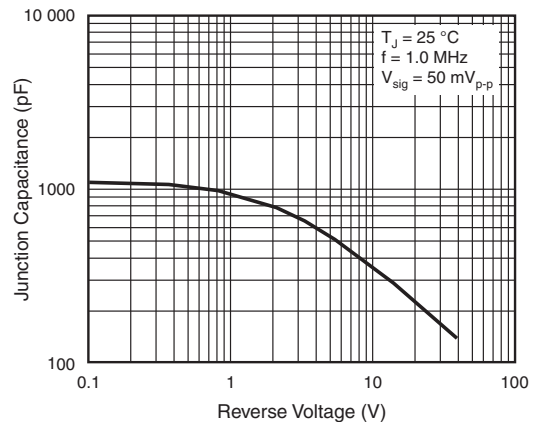


Fig. 5 - Typical Junction Capacitance Per Diode

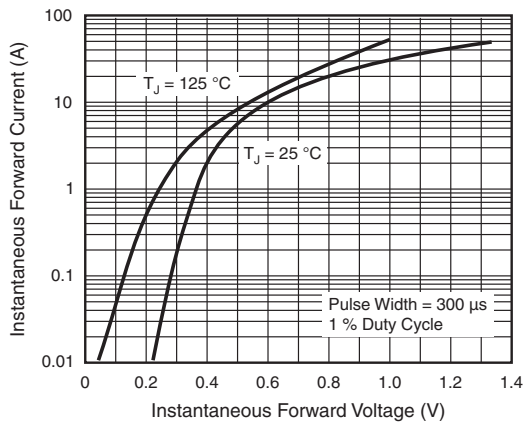


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

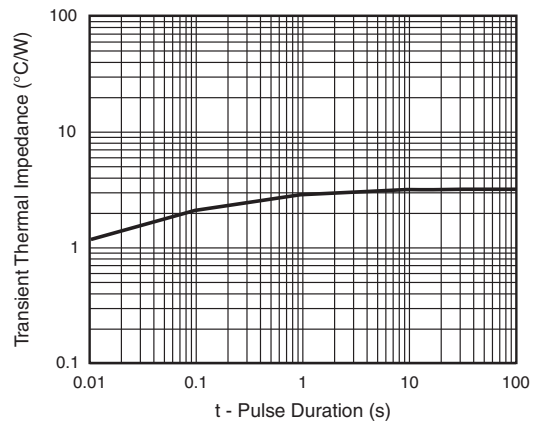
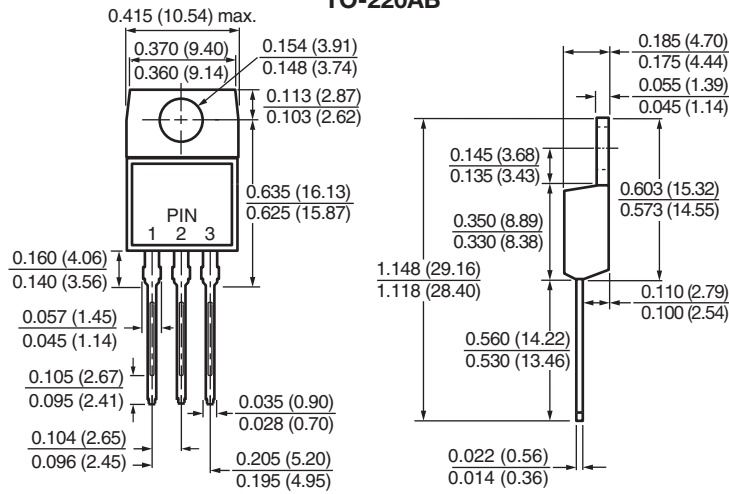


Fig. 6 - Typical Transient Thermal Impedance Per Diode

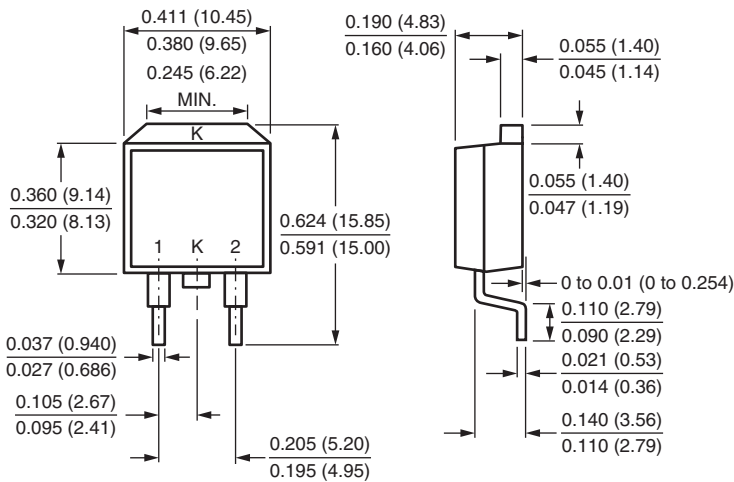


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

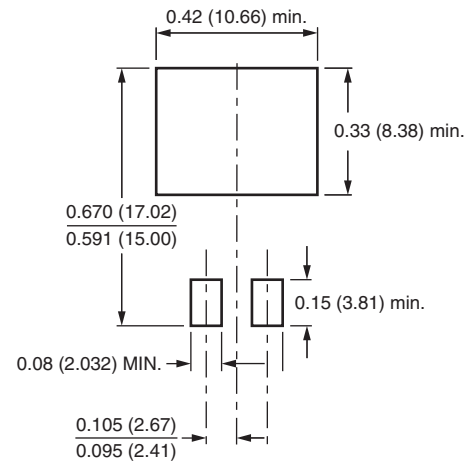
TO-220AB



D²PAK (TO-263AB)



Mounting Pad Layout





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