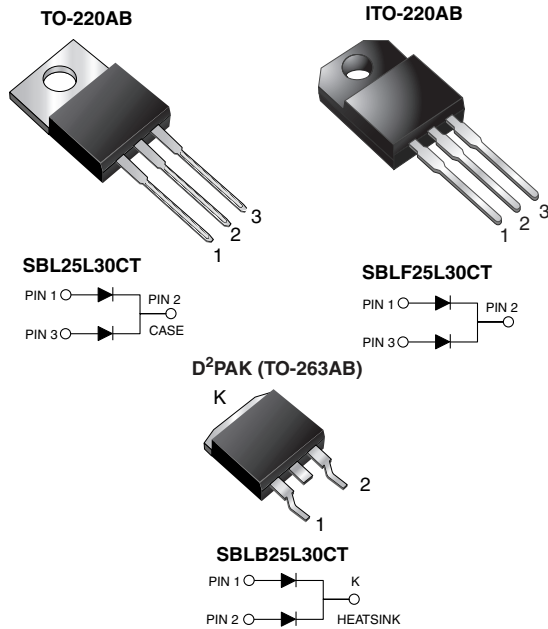




**THE DATASHEET OF
SBLB25L30CTHE3_A/P**



Dual Low V_F Common Cathode Schottky Rectifier



FEATURES

- Power pack
- Low power loss, high efficiency
- Very 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 and ITO-220AB package)
- AEC-Q101 qualified available
- Automotive ordering code:
Base P/NHE3 (for ITO-220AB)
Base P/NHM3 (for D²PAK (TO-263AB) package)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
Available

TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, switching mode power supplies, freewheeling diodes, OR-ing diodes, DC/DC converters, and polarity protection application.

MECHANICAL DATA

Case: TO-220AB, ITO-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, ...)

Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

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

E3 and M3 suffix meets JESD 201 class 1A whisker test, HE3 and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS | |
|-------------------------|--|
| $I_{F(AV)}$ | 2 x 12.5 A |
| V_{RRM} | 30 V |
| I_{FSM} | 180 A |
| V_F | 0.39 V |
| T_J max. | 150 °C |
| Package | TO-220AB, ITO-220AB, D ² PAK (TO-263AB) |
| Circuit configuration | Common cathode |



| MAXIMUM RATINGS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | |
|--|--|--|------------------|
| PARAMETER | SYMBOL | SBL25L30CT SBLB25L30CT SBLF25L30CT | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 30 | V |
| Maximum average forward rectified current at $T_C = 95\text{ }^\circ\text{C}$ | total device $I_{F(AV)}$ per diode | 25 | A |
| | | 12.5 | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 180 | |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |
| Isolation voltage (ITO-220AB only) from terminal to heatsink, $t = 1\text{ min}$ | V_{AC} | 1500 | V |

| ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | |
|--|-------------|-----------------|-----------------------------------|------|----|
| PARAMETER | SYMBOL | TEST CONDITIONS | VALUE | UNIT | |
| Maximum instantaneous forward voltage | $V_F^{(1)}$ | 12.5 A | $T_J = 125\text{ }^\circ\text{C}$ | 0.39 | V |
| | | | $T_J = 25\text{ }^\circ\text{C}$ | 0.49 | |
| Maximum instantaneous reverse current at DC blocking voltage per diode | $I_R^{(2)}$ | Rated V_R | $T_J = 25\text{ }^\circ\text{C}$ | 0.90 | mA |
| | | | $T_J = 100\text{ }^\circ\text{C}$ | 50 | |
| | | | $T_J = 125\text{ }^\circ\text{C}$ | 100 | |

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
(2) Pulse test: pulse width $\leq 40\text{ ms}$

| THERMAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|-----------------|------------|-------------|-------------|--------------------|
| PARAMETER | SYMBOL | SBL25L30CT | SBLF25L30CT | SBLB25L30CT | UNIT |
| Typical thermal resistance from junction to case per diode | $R_{\theta JC}$ | 1.5 | 4.0 | 1.5 | $^\circ\text{C/W}$ |

| ORDERING INFORMATION | | | | | |
|-------------------------------|-----------------------------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB | SBL25L30CT-E3/45 | 1.85 | 45 | 50/tube | Tube |
| ITO-220AB | SBLF25L30CT-E3/45 | 1.99 | 45 | 50/tube | Tube |
| D ² PAK (TO-263AB) | SBLB25L30CT-M3/I | 1.35 | I | 800/reel | Tape and reel |
| ITO-220AB | SBLF25L30CTHE3_A/P ⁽¹⁾ | 1.99 | P | 50/tube | Tube |
| D ² PAK (TO-263AB) | SBLB25L30CTHM3/I ⁽¹⁾ | 1.35 | I | 800/reel | Tape and reel |

Note

- (1) AEC-Q101 qualified, available in ITO-220AB and D²PAK (TO-263AB)



RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)

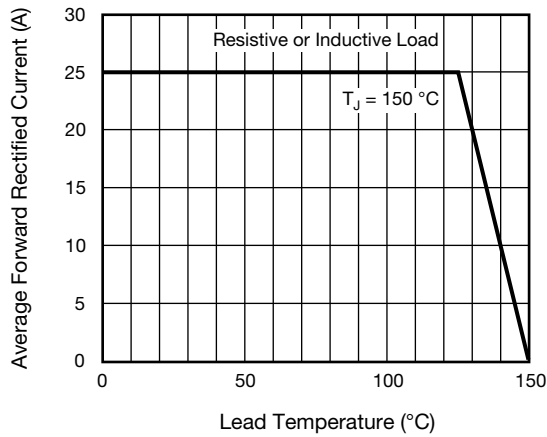


Fig. 1 - Forward Current Derating Curve

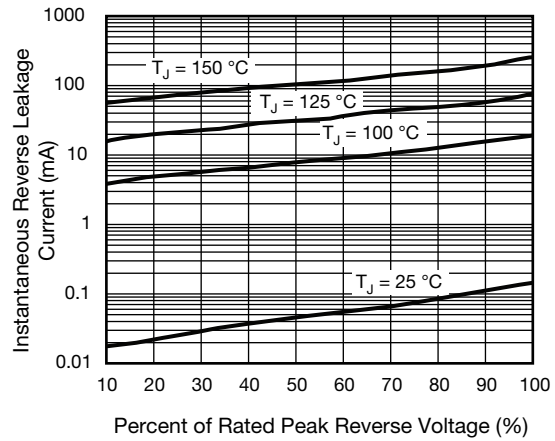


Fig. 4 - Typical Reverse Characteristics Per Diode

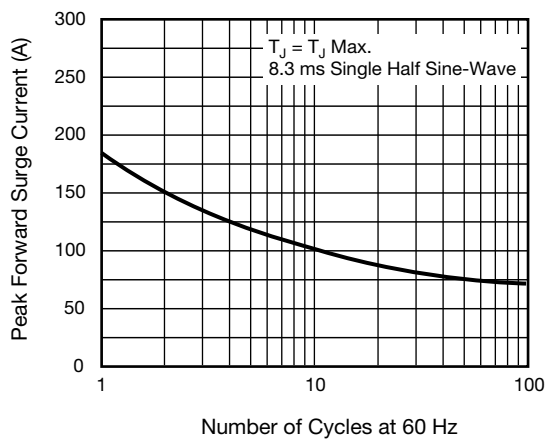


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

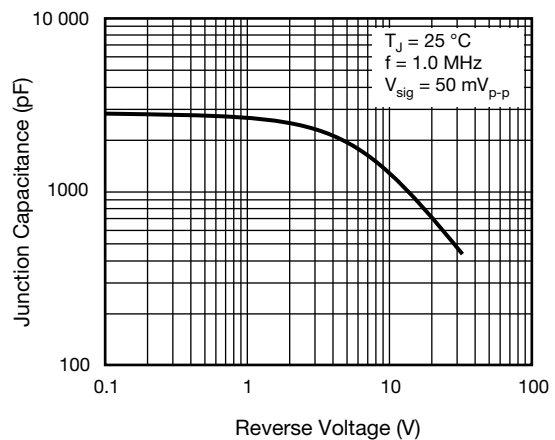


Fig. 5 - Typical Junction Capacitance Per Diode

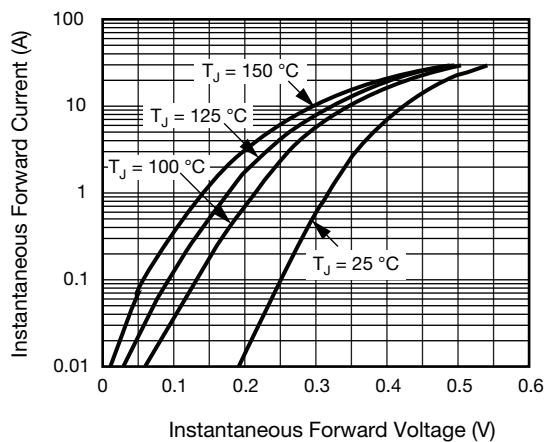


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

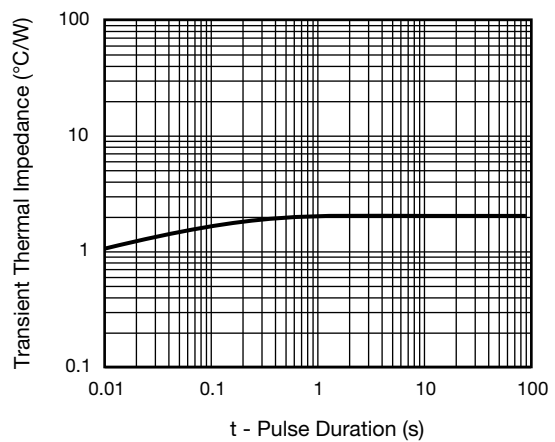
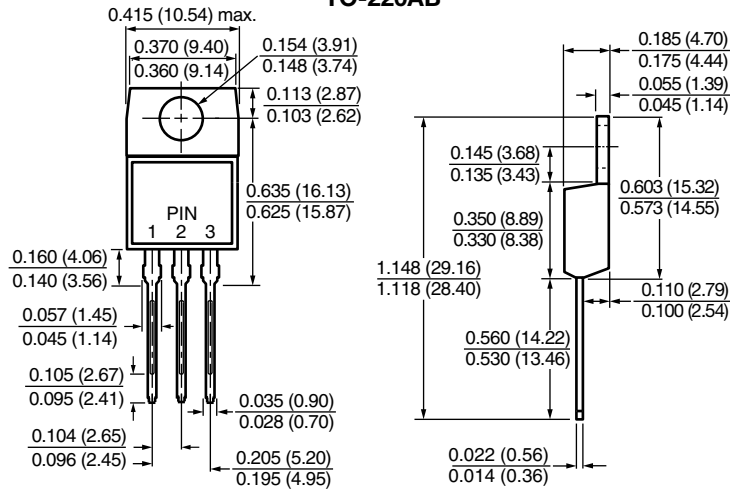


Fig. 6 - Typical Transient Thermal Impedance Per Diode

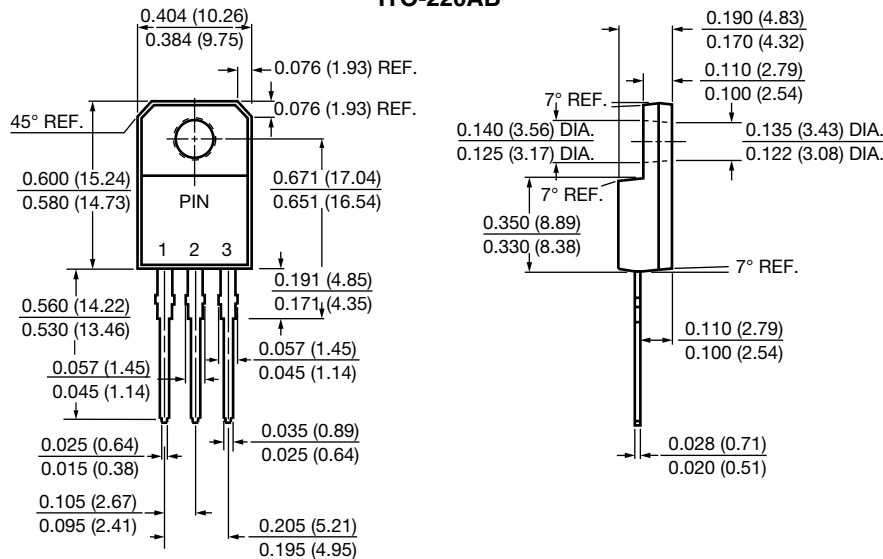


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

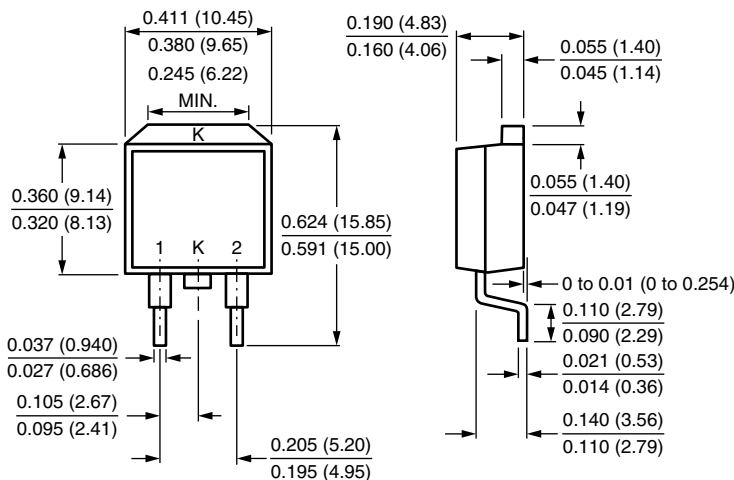
TO-220AB



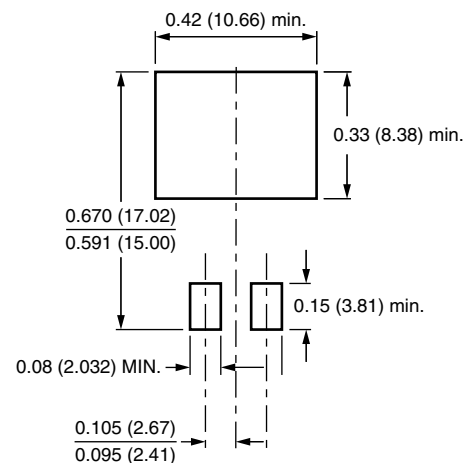
ITO-220AB



D²PAK (TO-263AB)



Mounting Pad Layout





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