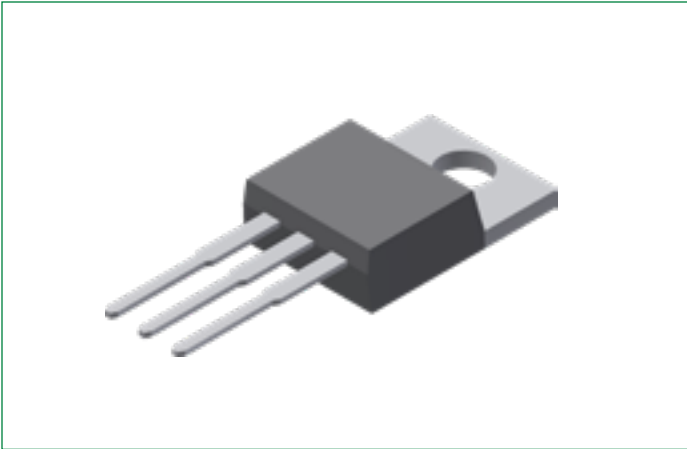


DSB30C30PB

30 V, 30 A Schottky Rectifier Diode

RoHS

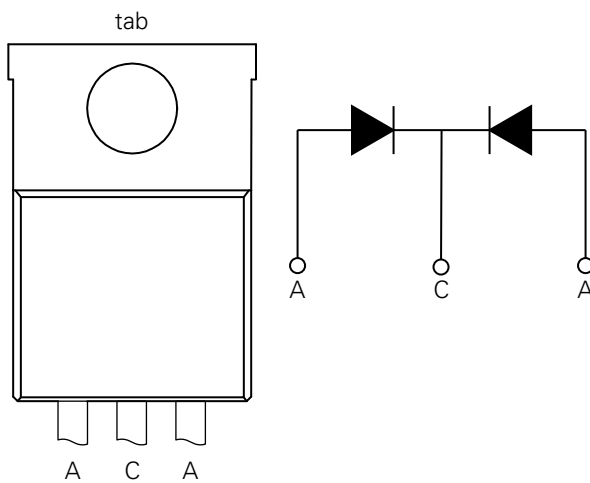
Pb



Features and Advantages:

- Very low V_f
- Extremely low switching losses
- Low I_{rm} values
- Improved thermal behavior
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Terminals finish: 100% Pure Tin
- This is a Pb – Free Device
- Epoxy meets UL 94V-0

Pinout Diagram (TO-220-3L AB)



C: Cathode; **A:** Anode; **tab:** Cathode

Applications:

- Rectifiers in Switch Mode Power Supplies (SMPS)
- Free wheeling diode in low voltage converters

Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Symbol | Characteristics | Condition | Max. | Units |
|-------------|---|--|--------------------------------|-------|
| V_{RRM} | Peak Repetitive Reverse Voltage | - | 30 | V |
| V_{RWM} | Working Peak Reverse Voltage | | | |
| V_R | DC Blocking Voltage | | | |
| $I_{F(AV)}$ | Average Rectified Forward Current | 50% duty cycle @ $T_C=135^\circ\text{C}$, rectangular wave form | 15(Per Leg) 30 (Per Device) | A |
| I_{FSM} | Peak One Cycle Non-Repetitive Surge Current (Per Leg) | 10 ms, Half Sine pulse, $T_J=25^\circ\text{C}$ | 340 | A |
| P_{tot} | Total power dissipation | $T_C = 25^\circ\text{C}$ | 70 | W |

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Symbol | Characteristics | Conditions | Typ. | Max. | Units |
|----------|---|--|------|------|-------|
| V_{F1} | Forward Voltage Drop (Per Leg) ¹ | @ 15A, Pulse, $T_J = 25^\circ\text{C}$ | - | 0.55 | V |
| V_{F2} | | @ 15A, Pulse, $T_J = 125^\circ\text{C}$ | - | 0.44 | V |
| I_{R1} | Reverse Current (Per Leg) ¹ | @ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$ | - | 10 | mA |
| I_{R2} | | @ $V_R = \text{rated } V_R, T_J = 100^\circ\text{C}$ | - | 40 | mA |
| C_T | Junction Capacitance (Per Leg) | @ $V_R = 5\text{ V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$ | 661 | - | pF |

Note 1: Pulse width < 300 μs , duty cycle < 2%

Thermal-Mechanical Specifications

| Symbol | Characteristics | Condition | Specification | Units |
|-----------------|--|--------------|--------------------|--------------------|
| T_J | Junction Temperature | - | -55 to +150 | $^\circ\text{C}$ |
| T_O | Operation temperature | - | -55 to +125 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | - | -55 to +150 | $^\circ\text{C}$ |
| M_D | Mounting torque | - | Min 0.4 Max 0.6 | Nm |
| F_C | Mounting force with clip | - | Min 20 Max 60 | N |
| $R_{\theta JC}$ | Maximum Thermal Resistance Junction to Case | DC operation | 1.75 | $^\circ\text{C/W}$ |
| $R_{\theta JS}$ | Typical Thermal Resistance Junction to Heat Sink | - | 0.5 | $^\circ\text{C/W}$ |
| wt | Approximate Weight | - | 2 | g |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

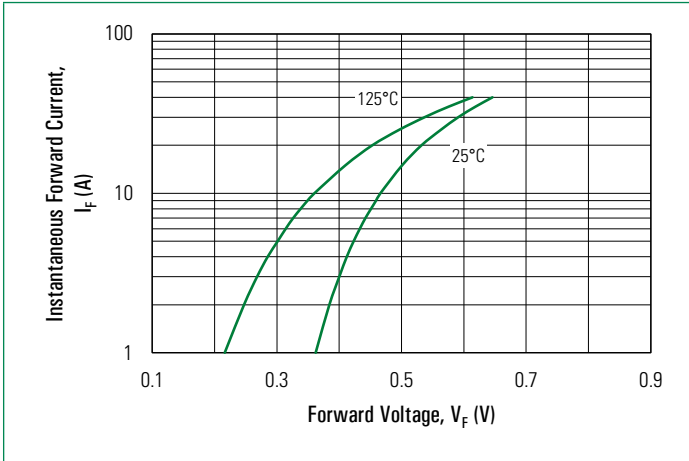


Fig. 2. Typical Reverse Characteristics

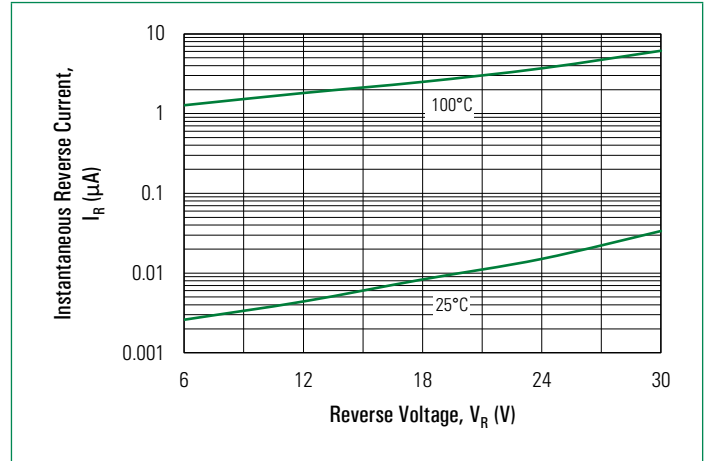
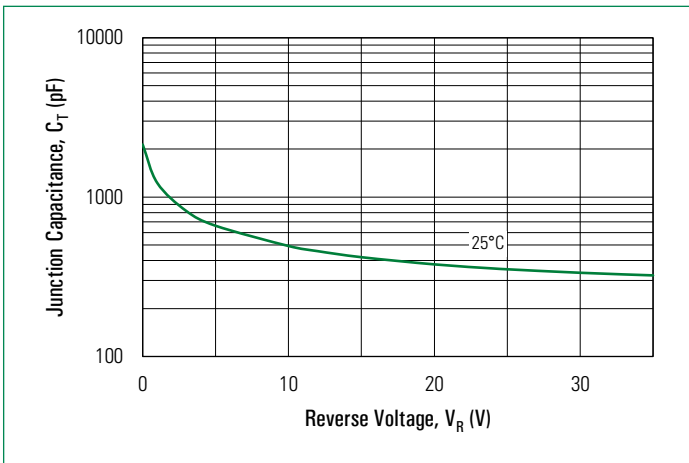
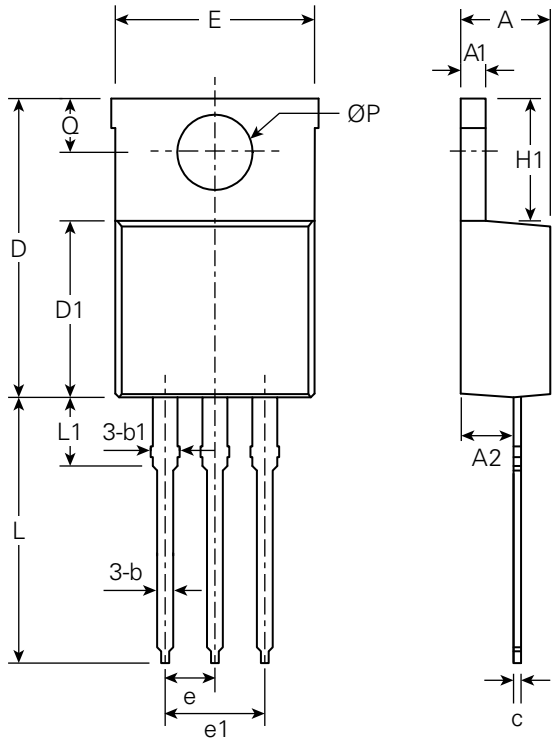


Fig. 3. Typical Junction Capacitance

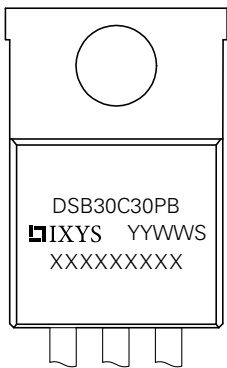


Part Outline Drawing (TO-220-3L AB)



| Symbol | Inches | | | Millimeters | | |
|--------|--------|---------|-------|-------------|---------|-------|
| | Min. | Typical | Max. | Min. | Typical | Max. |
| A | 0.140 | – | 0.190 | 3.56 | – | 4.83 |
| A1 | 0.020 | – | 0.055 | 0.51 | – | 1.40 |
| A2 | 0.080 | – | 0.115 | 2.03 | – | 2.92 |
| b | 0.015 | – | 0.040 | 0.38 | – | 1.02 |
| b1 | 0.045 | – | 0.070 | 1.14 | – | 1.78 |
| c | 0.012 | – | 0.024 | 0.31 | – | 0.61 |
| D | 0.560 | – | 0.650 | 14.22 | – | 16.51 |
| D1 | 0.330 | – | 0.371 | 8.38 | – | 9.42 |
| E | 0.380 | – | 0.420 | 9.65 | – | 10.67 |
| e | – | 0.100 | – | – | 2.54 | – |
| e1 | – | 0.200 | – | – | 5.08 | – |
| H1 | 0.230 | – | 0.270 | 5.84 | – | 6.86 |
| L | 0.500 | – | 0.580 | 12.70 | – | 14.73 |
| L1 | – | – | 0.250 | – | – | 6.35 |
| ØP | – | 0.140 | – | – | 3.56 | – |
| Q | 0.100 | – | 0.135 | 2.54 | – | 3.43 |

Part Number and Marking

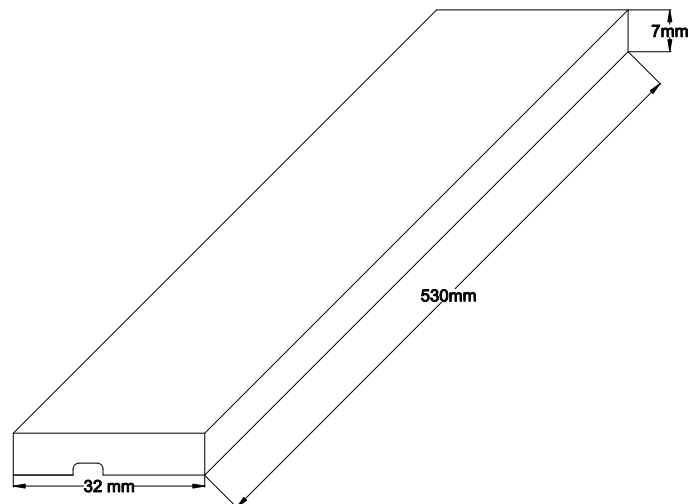


- D = Diode
- S = Schottky Diode
- B Ultra Low VF
- 30 = Current Rate (30A)
- C Common Cathode
- 30 = Voltage Rating (30V)
- PB = Package Code (TO-220AB)
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXXXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|-------------|------------|--------------|--------------|
| DSB30C30PB | DSB30C30PB | Tube | 50 pcs/ tube |

Packing Specifications



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