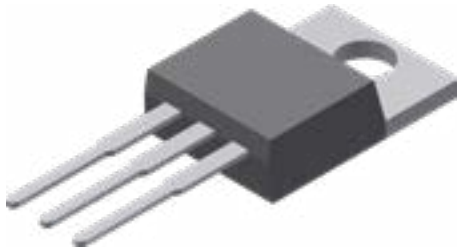


DSB60C45PB

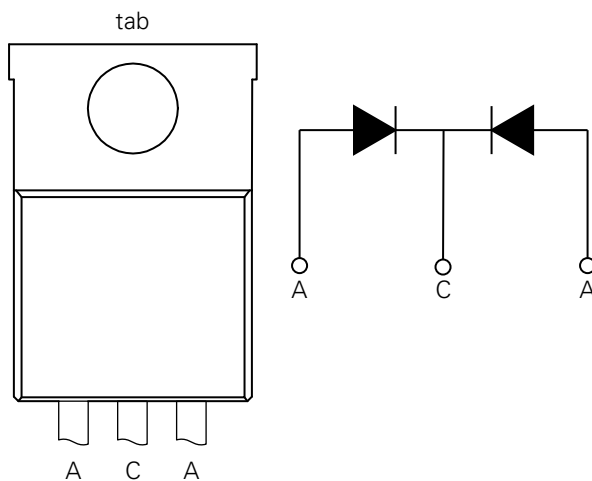
45 V, 60 A Schottky Rectifier Diode

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 94 V-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

Product Summary

| Characteristic | Value | Unit |
|----------------|--------|------|
| V_{RRM} | 45 | V |
| I_{FAV} | 2 x 30 | A |
| V_F | 0.64 | V |

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

| Symbol | Characteristics | Condition | Max. | Units |
|-----------|---|---|---------------------------------|-------|
| V_{RRM} | Peak Repetitive Reverse Voltage | - | 45 | V |
| V_{RWM} | Working Peak Reverse Voltage | | | |
| V_R | DC Blocking Voltage | | | |
| I_{FAV} | Average Rectified Forward Current | 50% duty cycle @ $T_C = 125^\circ\text{C}$, rectangular wave form | 30 (Per Leg) 60 (Per Device) | A |
| I_{FSM} | Peak One Cycle Non-Repetitive Surge Current (Per Leg) | 10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$ | 490 | A |
| P_{tot} | Total Power Dissipation | $T_C = 25^\circ\text{C}$ | 145 | 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 | @ 30 A, Pulse, $T_{VJ} = 25^\circ\text{C}$ | – | 0.67 | V |
| V_{F2} | | @ 30 A, Pulse, $T_{VJ} = 125^\circ\text{C}$ | – | 0.64 | V |
| I_{R1} | Reverse Current (Per Leg) ¹ | @ $V_R = \text{rated } V_R$, $T_{VJ} = 25^\circ\text{C}$ | – | 10 | mA |
| I_{R2} | | @ $V_R = \text{rated } V_R$, $T_{VJ} = 100^\circ\text{C}$ | – | 100 | mA |
| C_T | Junction Capacitance (Per Leg) | @ $V_R = 5 \text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1 \text{ MHz}$ | 967 | – | pF |

Note 1: Pulse width < 300 μs , duty cycle < 2%**Thermal-Mechanical Specifications**

| Symbol | Characteristics | Condition | Specification | Units |
|------------|--|--------------|--------------------|------------------|
| T_{VJ} | 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_{thJC} | Maximum Thermal Resistance Junction to Case | DC operation | 0.85 | K/W |
| R_{thJS} | Typical Thermal Resistance Junction to Heat Sink | – | 0.5 | K/W |
| wt | Approximate Weight | – | 2 | g |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

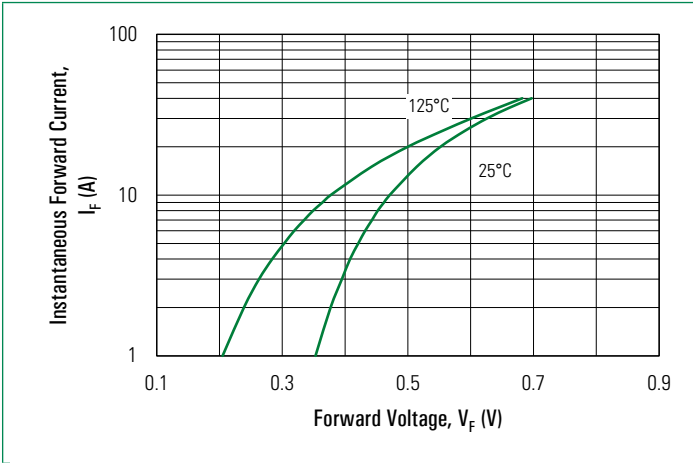


Fig. 2. Typical Reverse Characteristics

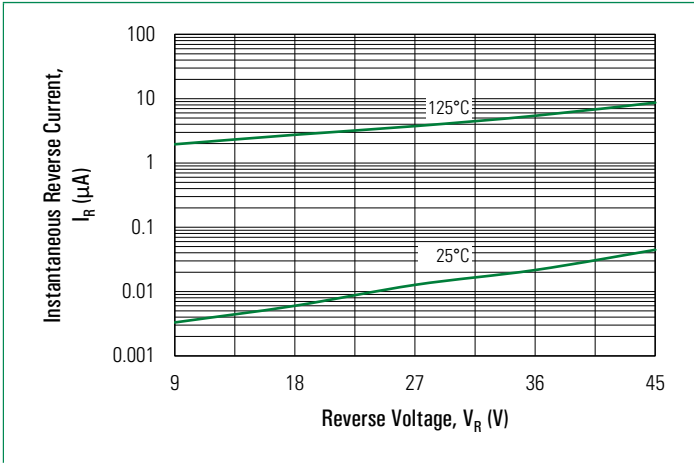
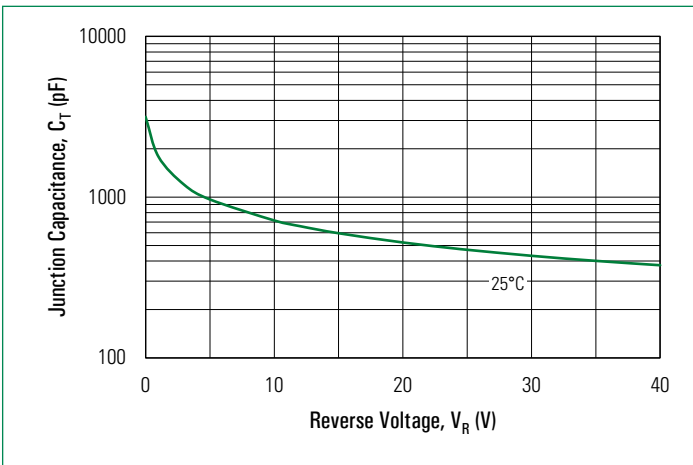
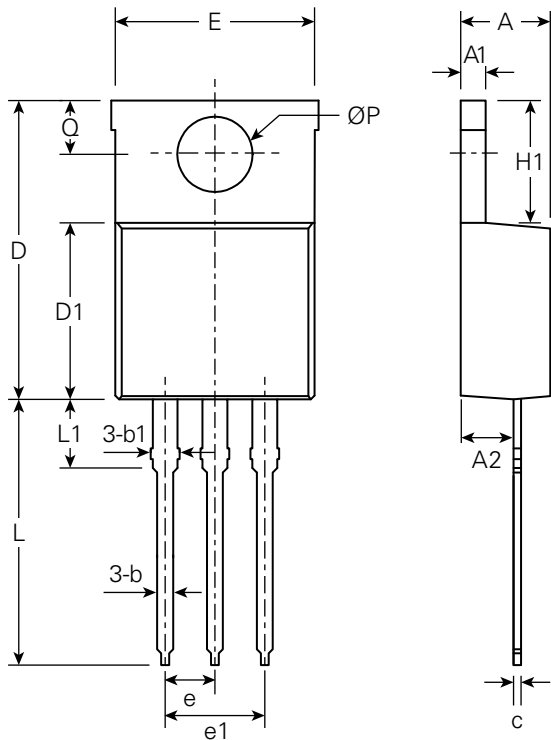


Fig. 3. Typical Junction Capacitance

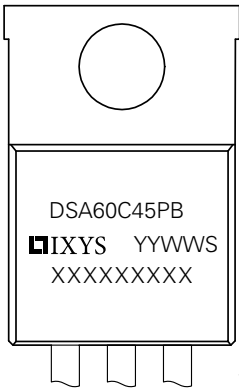


Part Outline Drawing (TO-220-3L AB)



| 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

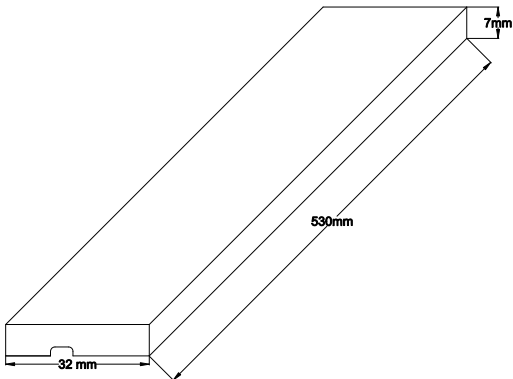


- D = Diode
- S = Schottky Diode
- B Ultra Low V_F
- 60 = Current Rate (60 A)
- C Common Cathode
- 45 = Voltage Rating (45 V)
- PB = Package Code (TO-220AB)
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXXXXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|-------------|------------|--------------|--------------|
| DSB60C45PB | DSB60C45PB | Tube | 50 pcs/ tube |

Packing Specifications



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Part of:

