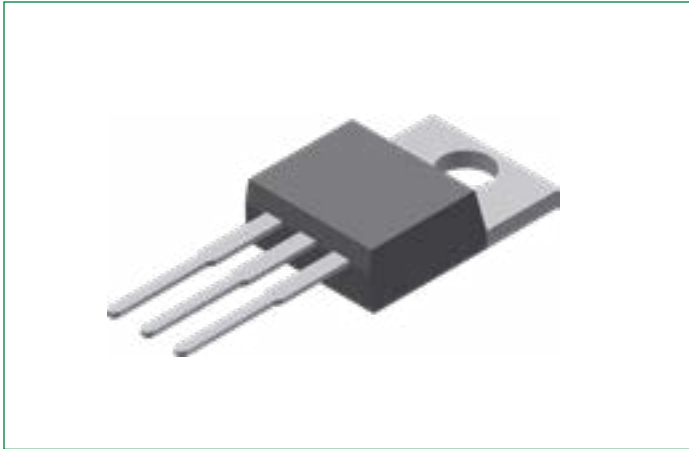


DSA30C100PB

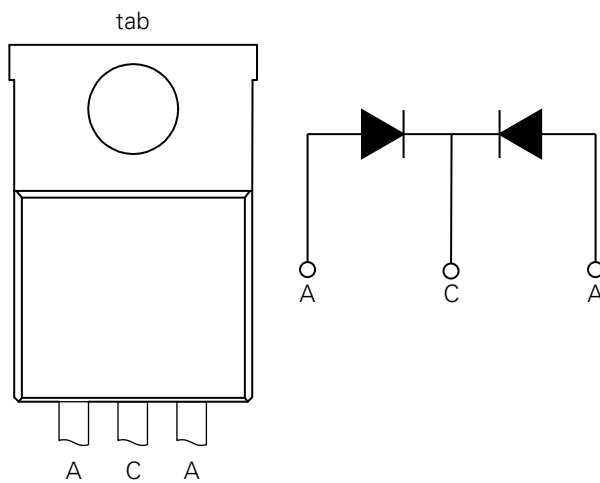
100 V, 30 A Schottky Rectifier Diode

RoHS

Pb

**Features:**

- 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} | 100 | V |
| I_{FAV} | 2 x 15 | A |
| V_F | 0.73 | V |

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

| Symbol | Characteristics | Condition | Max. | Units |
|-----------|---|---|---------------------------------|-------|
| V_{RRM} | Peak Repetitive Reverse Voltage | - | 100 | V |
| V_{RWM} | Working Peak Reverse Voltage | | | |
| V_R | DC Blocking Voltage | | | |
| I_{FAV} | Average Rectified Forward Current | 50% duty cycle @ $T_C = 155^\circ\text{C}$, 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, $T_{VJ} = 25^\circ\text{C}$ | 340 | A |
| P_{tot} | Total Power Dissipation | $T_C = 25^\circ\text{C}$ | 35 | 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 | @ 15 A, Pulse, $T_{VJ} = 25^\circ\text{C}$ | - | 0.91 | V |
| V_{F2} | | @ 15 A, Pulse, $T_{VJ} = 125^\circ\text{C}$ | - | 0.73 | V |
| I_{R1} | Reverse Current (Per Leg) ¹ | @ $V_R = \text{rated } V_R, T_{VJ} = 25^\circ\text{C}$ | - | 250 | μA |
| I_{R2} | | @ $V_R = \text{rated } V_R, T_{VJ} = 125^\circ\text{C}$ | - | 12.5 | mA |
| C_T | Junction Capacitance (Per Leg) | @ $V_R = 12 \text{ V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1 \text{ MHz}$ | 223 | - | pF |

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

Thermal-Mechanical Specifications

| Symbol | Characteristics | Condition | Specification | Units |
|------------|--|--------------|--------------------|------------------|
| T_{VJ} | Junction Temperature | - | -55 to +175 | $^\circ\text{C}$ |
| T_O | Operation temperature | - | -55 to +150 | $^\circ\text{C}$ |
| 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 | 1.75 | K/W |
| R_{thCS} | Typical Thermal Resistance Case to Heat Sink | - | 0.5 | K/W |
| wt | Approximate Weight | - | 2 | g |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

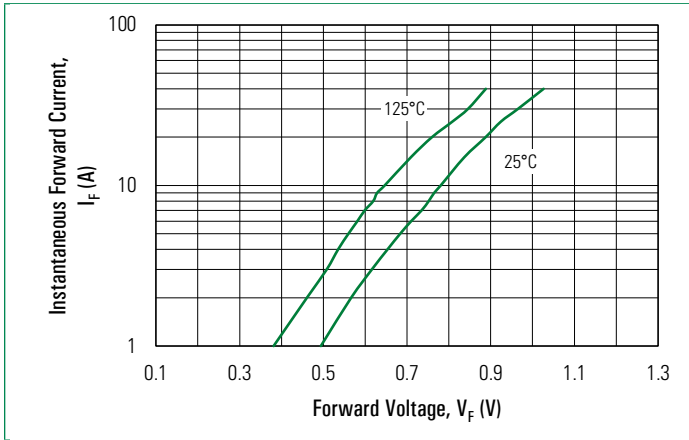


Fig. 2. Typical Reverse Characteristics

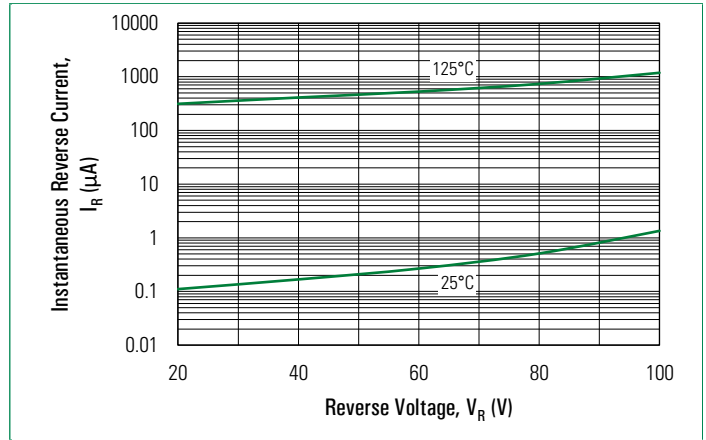
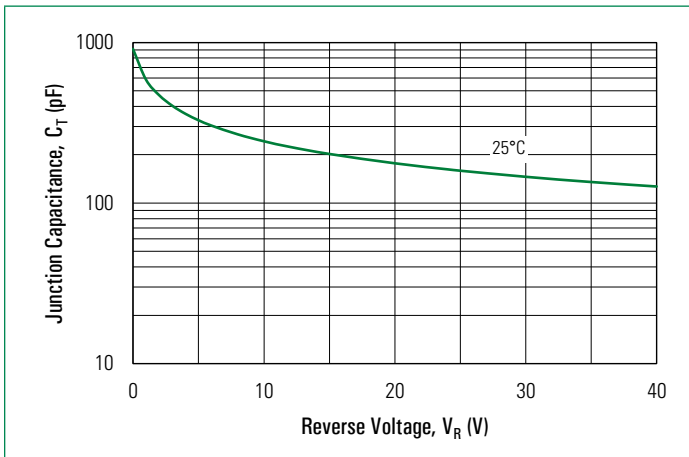


Fig. 3. Typical Junction Capacitance

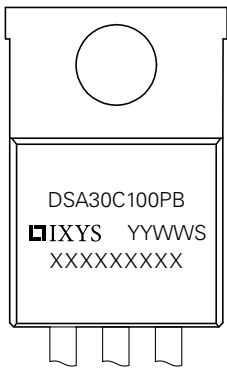


Part Outline Drawing (TO-220-3L AB)



| 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

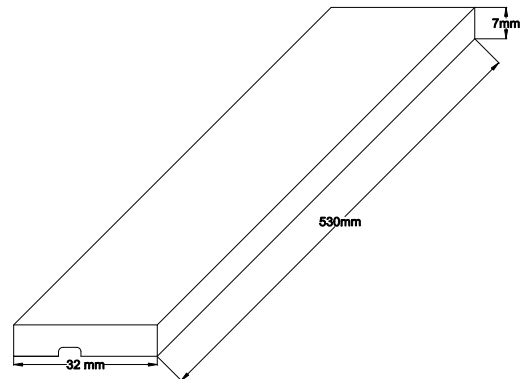


- D = Diode
- S = Schottky Diode
- A Low V_f
- 30 = Forward Current (30 A)
- C Common Cathode
- 100 = Reverse Voltage (100 V)
- PB = Package Code (TO-220AB)
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXXXXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|-------------|-------------|--------------|--------------|
| DSA30C100PB | DSA30C100PB | Tube | 50 pcs/ tube |

Packing Specifications



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Part of:

