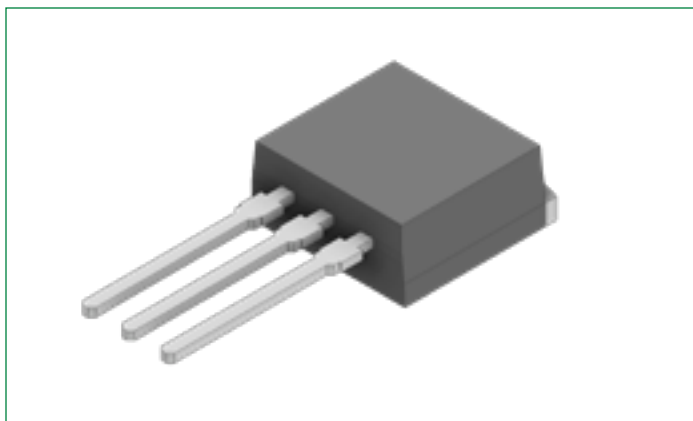


# DSA30C200IB

## 200 V, 30 A Schottky Rectifier Diode

RoHS

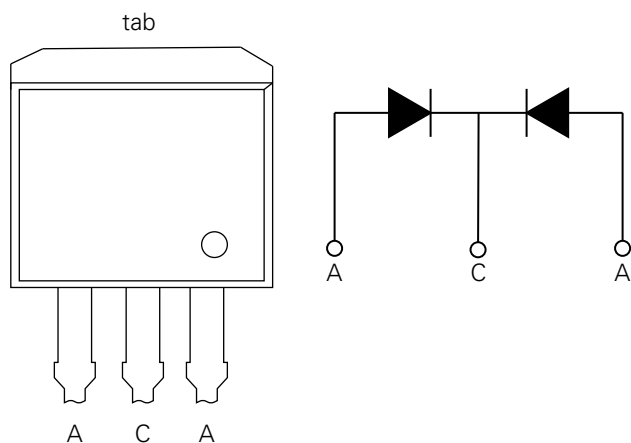
Pb



### 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-262)



**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 |
|----------------|--------|------|
| $V_{RRM}$      | 200    | V    |
| $I_{FAV}$      | 2 x 15 | A    |
| $V_F$          | 0.78   | V    |

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

| Symbol    | Characteristics                                       | Condition                                                          | Max.            | Units |
|-----------|-------------------------------------------------------|--------------------------------------------------------------------|-----------------|-------|
| $V_{RRM}$ | Peak Repetitive Reverse Voltage                       | —                                                                  | 200             | 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)    | A     |
|           |                                                       |                                                                    | 30 (Per Device) |       |
| $I_{FSM}$ | Peak One Cycle Non-Repetitive Surge Current (Per Leg) | 10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$                | 300             | A     |
| $P_{tot}$ | Total power dissipation                               | $T_{VJ} = 25^\circ\text{C}$                                        | 85              | 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) <sup>1</sup> | @ 15 A, Pulse, $T_{VJ} = 25^\circ\text{C}$                                   | —    | 0.94 | V             |
| $V_{F2}$ |                                             | @ 15 A, Pulse, $T_{VJ} = 125^\circ\text{C}$                                  | —    | 0.78 | V             |
| $I_{R1}$ | Reverse Current (Per Leg) <sup>1</sup>      | @ $V_R = \text{rated } V_R$ , $T_{VJ} = 25^\circ\text{C}$                    | —    | 250  | $\mu\text{A}$ |
| $I_{R2}$ |                                             | @ $V_R = \text{rated } V_R$ , $T_{VJ} = 125^\circ\text{C}$                   | —    | 2.5  | mA            |
| $C_T$    | Junction Capacitance (Per Leg)              | @ $V_R = 24\text{ V}$ , $T_C = 25^\circ\text{C}$<br>$f_{SIG} = 1\text{ MHz}$ | 100  | —    | pF            |

**Note 1:** Pulse width < 300  $\mu\text{s}$ , 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      | $^\circ\text{C}$ |
| $F_C$      | Mounting force with clip                     | —            | Min 20<br>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 | —            | 0.25             | K/W              |
| wt         | Approximate Weight                           | —            | 1.85             | g                |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

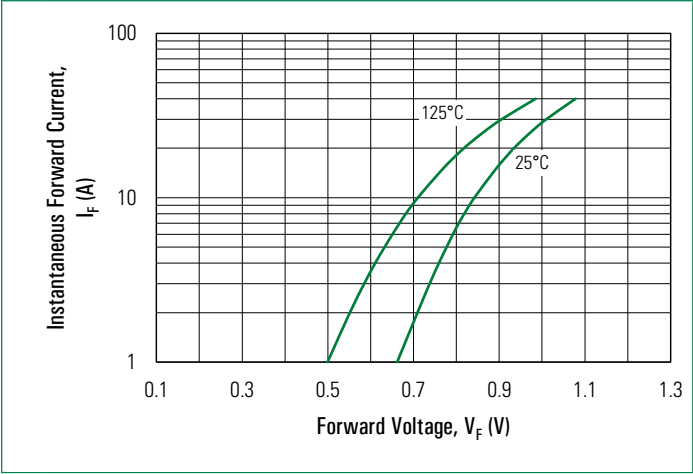


Fig. 2. Typical Reverse Characteristics

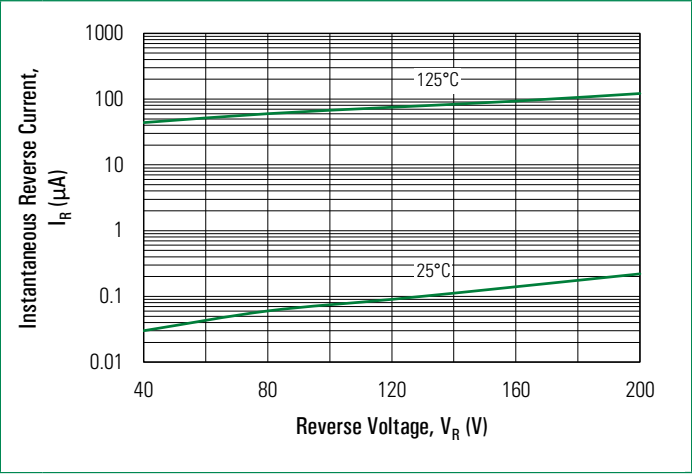
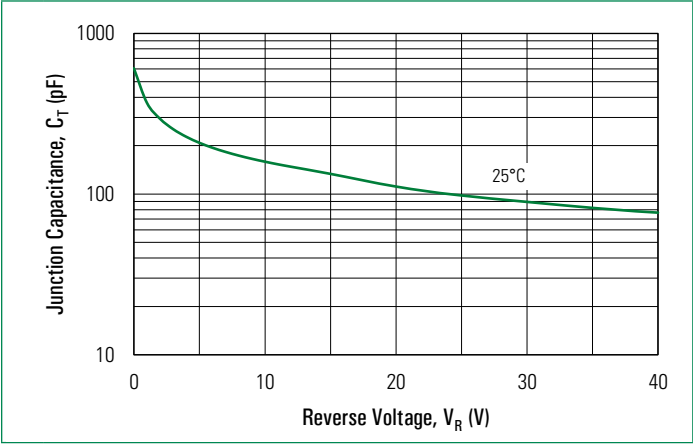
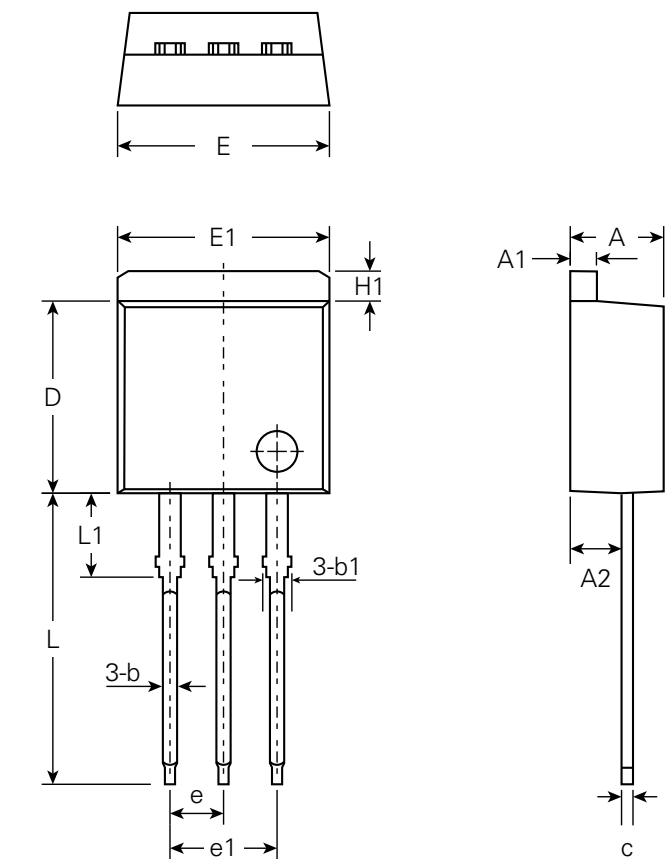


Fig. 3. Typical Junction Capacitance



Part Outline Drawing (TO-262)



| Symbol | Inches |         |       | Millimeters |         |       |
|--------|--------|---------|-------|-------------|---------|-------|
|        | Min.   | Typical | Max.  | Min.        | Typical | Max.  |
| A      | 0.159  | 0.174   | 0.190 | 4.06        | 4.44    | 4.83  |
| A1     | 0.044  | 0.05    | 0.055 | 1.14        | 1.27    | 1.40  |
| A2     | 0.079  | 0.094   | 0.109 | 2.03        | 2.41    | 2.79  |
| b      | 0.025  | 0.029   | 0.037 | 0.64        | 0.76    | 0.96  |
| b1     | 0.044  | 0.053   | 0.057 | 1.14        | 1.37    | 1.47  |
| c      | 0.014  | 0.022   | 0.025 | 0.36        | 0.56    | 0.64  |
| D      | 0.336  | 0.359   | 0.379 | 8.55        | 9.14    | 9.65  |
| E      | 0.379  | 0.394   | 0.405 | 9.65        | 10.03   | 10.31 |
| E1     | 0.379  | 0.394   | 0.405 | 9.65        | 10.03   | 10.29 |
| e      | –      | 0.1     | –     | –           | 2.54    | –     |
| e1     | –      | –       | –     | –           | –       | –     |
| H1     | –      | –       | 0.055 | –           | –       | 1.40  |
| L      | 0.5    | 0.544   | 0.579 | 12.7        | 13.82   | 14.73 |
| L1     | –      | 0.149   | –     | –           | 3.8     | –     |

Packing Specifications

Part Number and Marking

The diagram shows the marking on the diode package, which includes the IXYS logo, the part number DSA30C200IB, the date code YYWW, the lot number XXXXX, and a circular symbol.

D Diode

S = Schottky Diode

A = Low VF

30 = Forward Current

C = Common Cathode

200 = Reverse Voltage

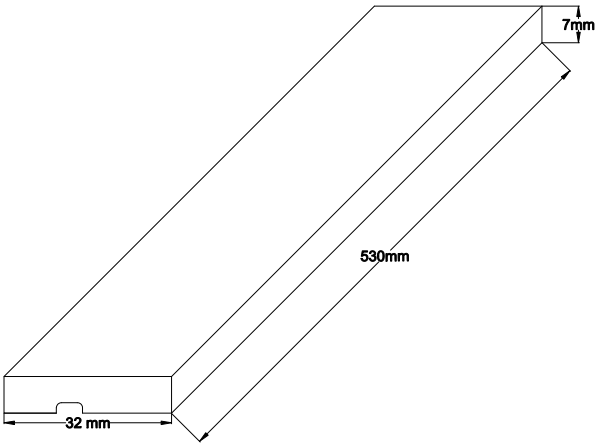
IB = Package Code (TO-262)

YY = Year

WW = Work Week

S = Plant Location Code

XXXXX = Lot Number



Ordering Information

| Part Number | Marking     | Packing Mode | Quantity     |
|-------------|-------------|--------------|--------------|
| DSA30C200IB | DSA30C200IB | Tube         | 50 pcs/ tube |

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Part of:

