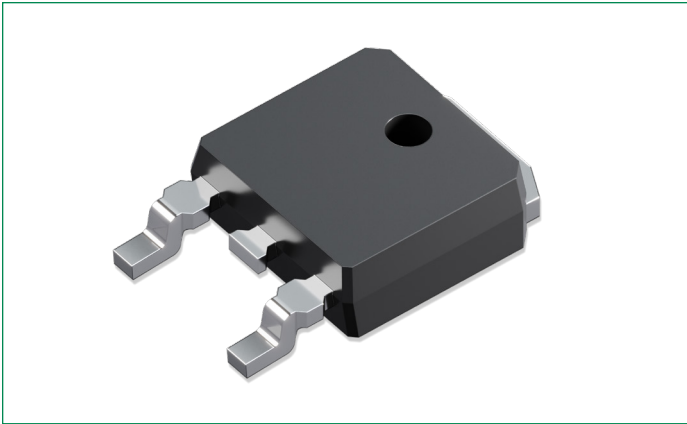


DSB15IM30UC

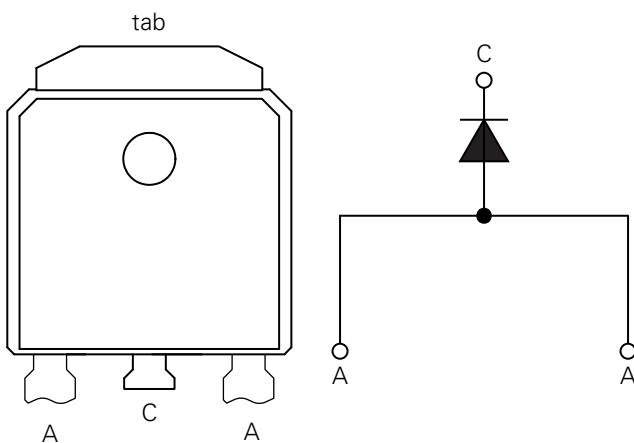
30 V, 15 A Schottky Rectifier Diode

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 94V-0

Pinout Diagram (TO-252AA)**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} | 30 | V |
| I_{FAV} | 15 | A |
| V_F | 0.44 | V |

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_{FAV} | Average Rectified Forward Current | 50% duty cycle @ $T_C = 130^\circ\text{C}$, rectangular wave form | 15 | A |
| I_{FSM} | Peak One Cycle Non-Repetitive Surge Current | 10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$ | 300 | A |
| P_{tot} | Total Power Dissipation | $T_C = 25^\circ\text{C}$ | 62 | W |

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

| Symbol | Characteristics | Conditions | Typ. | Max. | Units |
|----------|-----------------------------------|---|------|------|-------|
| V_{F1} | Forward Voltage Drop ¹ | @ 15 A, Pulse, $T_{VJ} = 25^\circ\text{C}$ | - | 0.51 | V |
| V_{F2} | | @ 15 A, Pulse, $T_{VJ} = 125^\circ\text{C}$ | - | 0.44 | V |
| I_{R1} | Reverse Current* | @ $V_R = \text{rated } V_R, T_{VJ} = 25^\circ\text{C}$ | - | 5 | mA |
| I_{R2} | | @ $V_R = \text{rated } V_R, T_{VJ} = 100^\circ\text{C}$ | - | 40 | mA |
| C_T | Junction Capacitance | @ $V_R = 24\text{ V}, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{ MHz}$ | 357 | - | 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 | $^\circ\text{C}$ |
| F_C | Mounting force with clip | - | Min 20 Max 60 | N |
| R_{thJC} | Maximum Thermal Resistance Junction to Case | DC operation | 2 | K/W |
| R_{thCS} | Typical Thermal Resistance Case to Heat Sink | - | 0.50 | K/W |
| wt | Approximate Weight | - | 0.39 | g |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

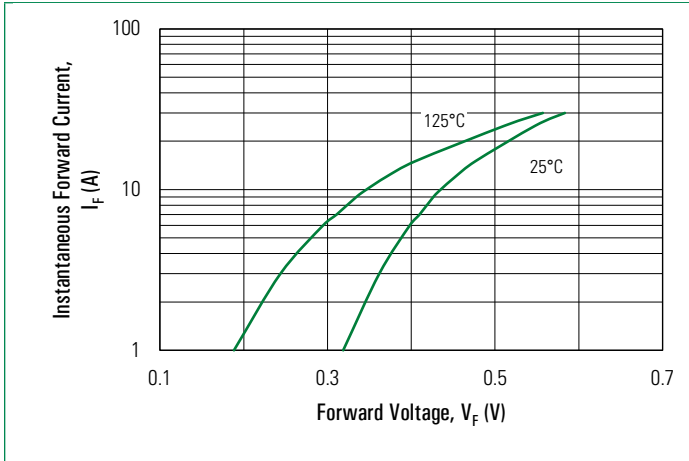


Fig. 2. Typical Reverse Characteristics

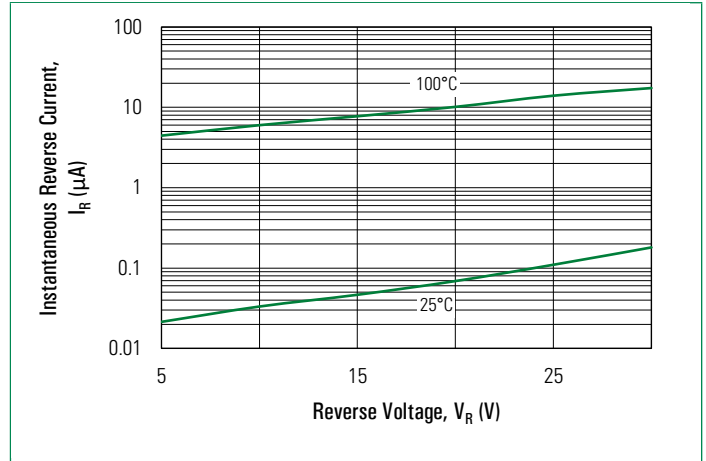
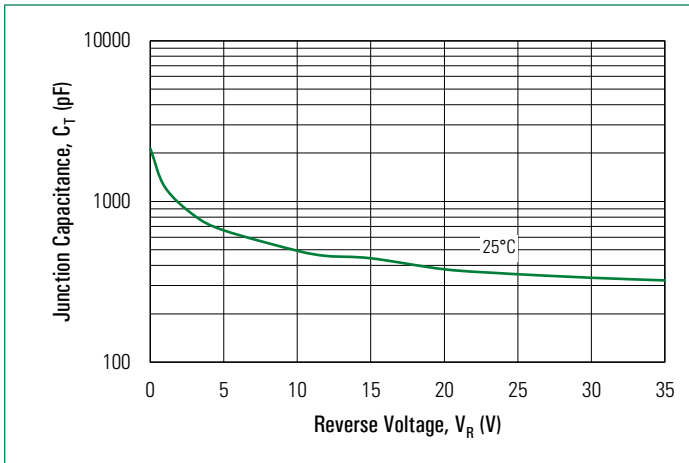
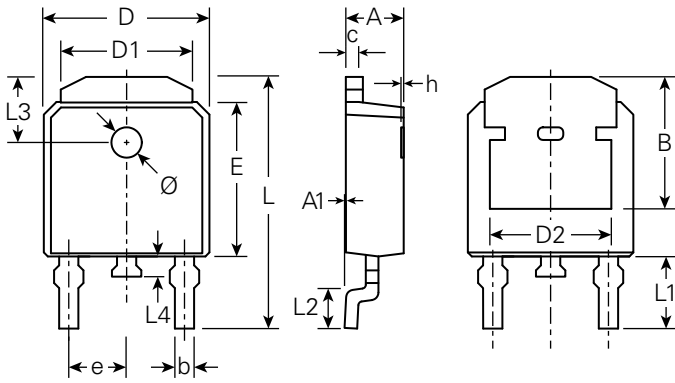


Fig. 3. Typical Junction Capacitance

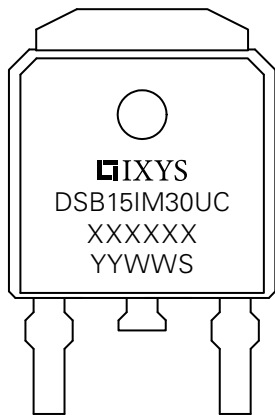


Part Outline Drawing (TO-252AA)



| Symbol | Inches | | | Millimeters | | |
|--------|-----------|---------|-------|-------------|---------|-------|
| | Min. | Typical | Max. | Min. | Typical | Max |
| A | 0.085 | - | 0.094 | 2.18 | - | 2.39 |
| A1 | - | - | 0.005 | - | - | 0.13 |
| b | 0.025 | - | 0.035 | 0.64 | - | 0.89 |
| c | 0.018 | - | 0.035 | 0.46 | - | 0.89 |
| D | 0.250 | - | 0.264 | 6.35 | - | 6.73 |
| D1 | 0.195 | - | 0.215 | 4.95 | - | 5.46 |
| D2 | 0.170 | - | - | 4.32 | - | - |
| E | 0.235 | 0.240 | 0.245 | 5.97 | 6.10 | 6.22 |
| e | 0.090 BSC | | | 2.29 BSC | | |
| L | 0.370 | - | 0.410 | 9.40 | - | 10.41 |
| L1 | 0.114 | | | 2.90 REF | | |
| L2 | 0.055 | 0.060 | 0.070 | 1.40 | 1.52 | 1.78 |
| L3 | 0.063 REF | | | 1.60 REF | | |
| L4 | - | - | 0.040 | - | - | 1.02 |
| Ø | 0.043 | - | 0.051 | 1.10 | - | 1.30 |

Part Number and Marking

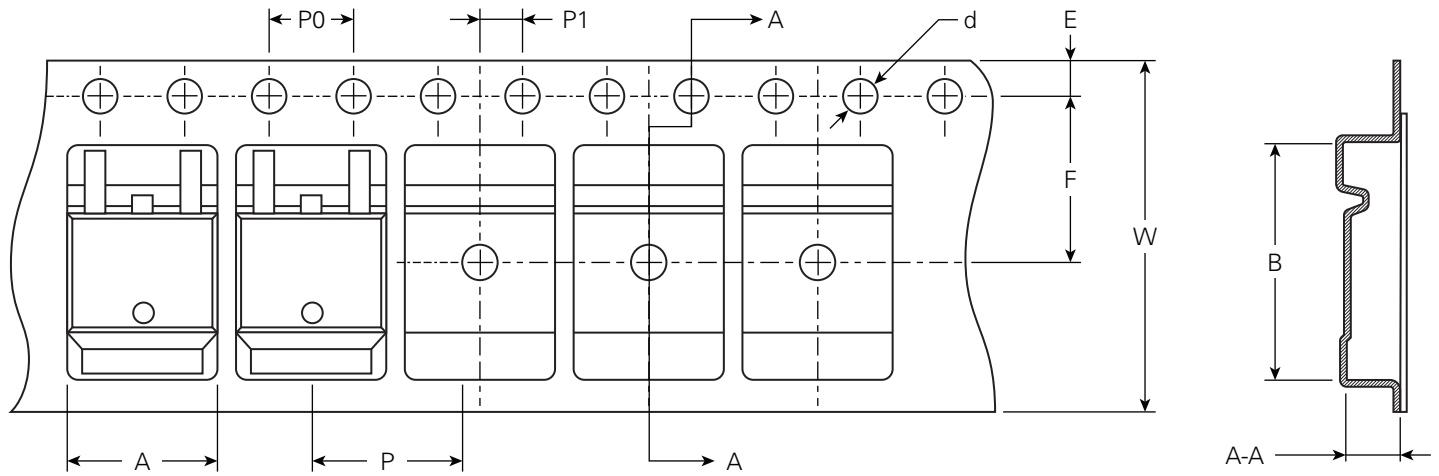


- DS = Schottky Diode
- B = Ultra Low VF
- 15 = Current Rate (15 A)
- IM = Single Diode
- 30 = Voltage Rating (30 V)
- UC = Package Code (TO-252)
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|-----------------|-------------|--------------|----------------|
| DSB15IM30UC-TRL | DSB15IM30UC | Reel | 2500 pcs/ reel |

Carrier Tape Specification (TO-252AA)



| Symbol | Inches | | | Millimeters | | |
|--------|--------|---------|--------|-------------|---------|-------|
| | Min. | Typical | Max. | Min. | Typical | Max. |
| A | 0.267 | - | 0.276 | 6.80 | - | 7.00 |
| B | 0.409 | - | 0.417 | 10.40 | - | 10.60 |
| C | 0.102 | - | 0.110 | 2.60 | - | 2.80 |
| d | Ø0.057 | - | Ø0.065 | Ø1.45 | - | Ø1.65 |
| E | 0.065 | - | 0.073 | 1.65 | - | 1.85 |
| F | 0.291 | - | 0.299 | 7.40 | - | 7.60 |
| P0 | 0.154 | - | 0.161 | 3.90 | - | 4.10 |
| P | 0.311 | - | 0.319 | 7.90 | - | 8.10 |
| P1 | 0.075 | - | 0.083 | 1.90 | - | 2.10 |
| W | 0.626 | - | 0.642 | 15.90 | - | 16.30 |

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Part of:

