

DSA15IM200UC

200 V, 15 A Schottky Rectifier Diode

RoHS

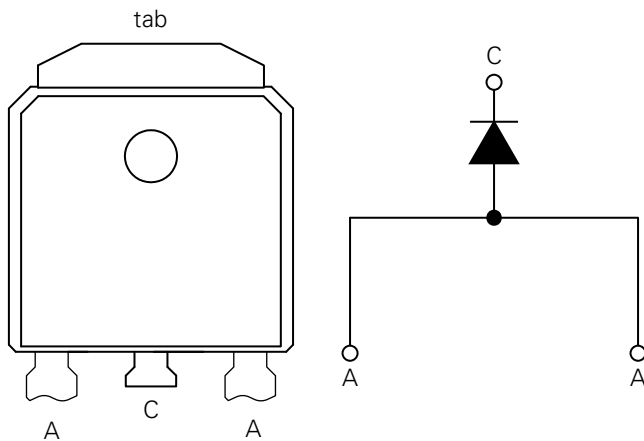
Pb



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

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 | | | |
| $I_{F(AV)}$ | Average Rectified Forward Current | 50% duty cycle @ $T_C=150^\circ\text{C}$, rectangular wave form | 15 | A |
| I_{FSM} | Peak One Cycle Non-Repetitive Surge Current | 10 ms, Half Sine pulse, $T_J=25^\circ\text{C}$ | 200 | A |
| P_{tot} | Total power dissipation | $T_C=25^\circ\text{C}$ | 75 | W |

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

| Symbol | Characteristics | Conditions | Typ. | Max. | Units |
|----------|-----------------------------------|---|------|------|---------------|
| V_{F1} | Forward Voltage Drop ¹ | @ 15A, Pulse, $T_J = 25^\circ\text{C}$ | – | 0.94 | V |
| V_{F2} | | @ 15A, Pulse, $T_J = 125^\circ\text{C}$ | – | 0.78 | V |
| I_{R1} | Reverse Current* | @ $V_R = \text{rated } V_{R'}$, $T_J = 25^\circ\text{C}$ | – | 250 | μA |
| I_{R2} | | @ $V_R = \text{rated } V_{R'}$, $T_J = 125^\circ\text{C}$ | – | 2.5 | mA |
| C_T | Junction Capacitance | @ $V_R = 24\text{V}$, $T_C = 25^\circ\text{C}$, $f_{SIG} = 1\text{MHz}$ | 100 | – | pF |

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

Thermal-Mechanical Specifications

| Symbol | Characteristics | Condition | Specification | Units |
|-----------------|--|--------------|------------------|--------------------|
| T_J | 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 Max 60 | N |
| $R_{\theta JC}$ | Maximum Thermal Resistance Junction to Case | DC operation | 2 | $^\circ\text{C/W}$ |
| $R_{\theta CS}$ | Typical Thermal Resistance Case to Heat Sink | – | 0.50 | $^\circ\text{C/W}$ |
| wt | Approximate Weight | – | 0.39 | g |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

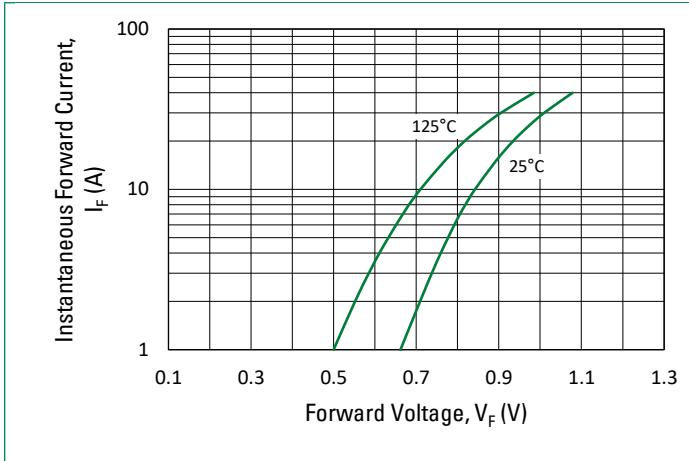


Fig. 2. Typical Reverse Characteristics

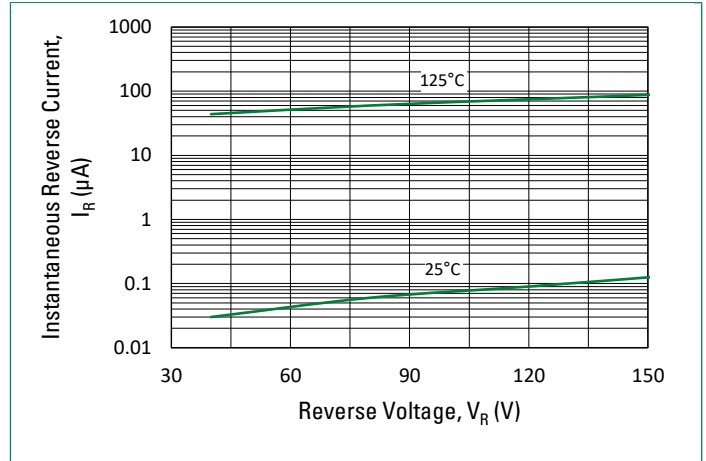
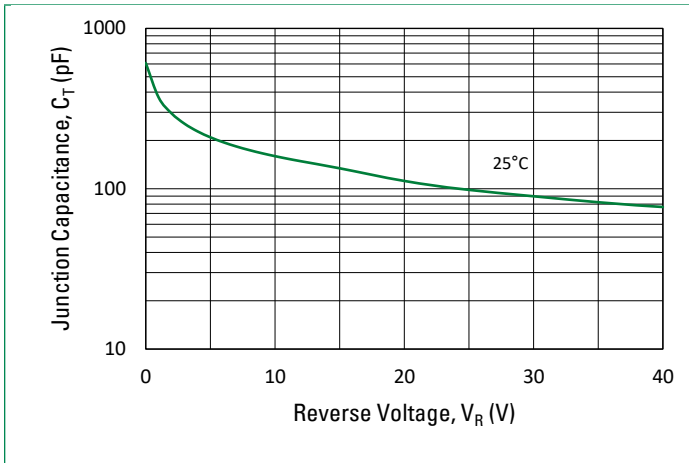
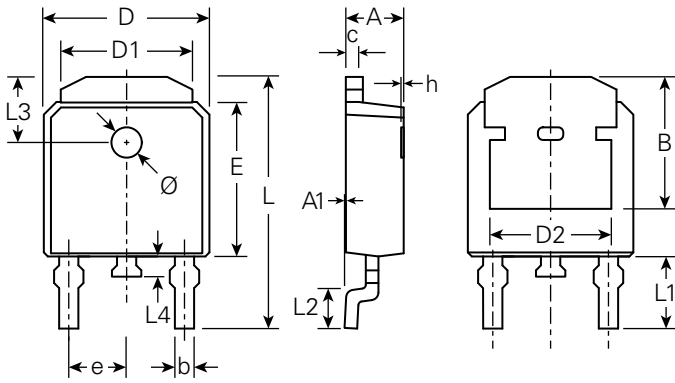


Fig. 3. Typical Junction Capacitance

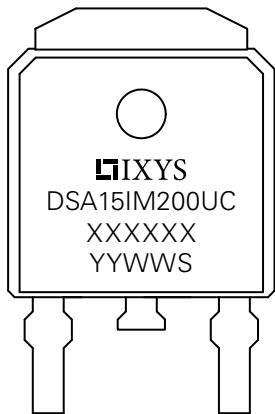


Part Outline Drawing (TO-252AA)



| 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

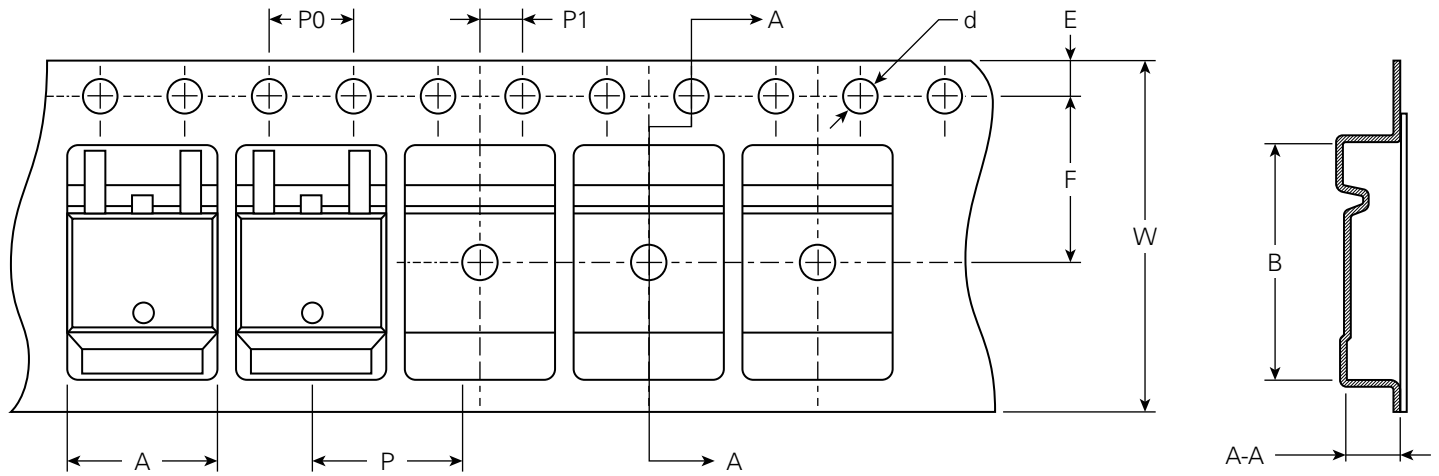


- DS = Schottky Diode
- A = Low VF
- 15 = Current Rate (15A)
- IM = Single Diode
- 200 = Voltage Rating (200V)
- UC = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|------------------|--------------|--------------|----------------|
| DSA15IM200UC-TRL | DSA15IM200UC | 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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