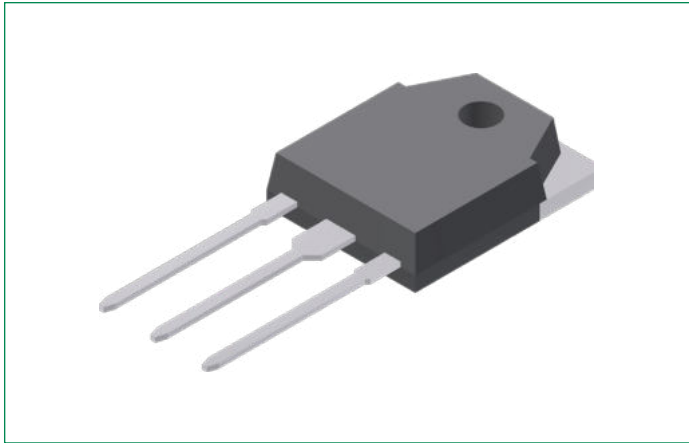


DSA50C100QB

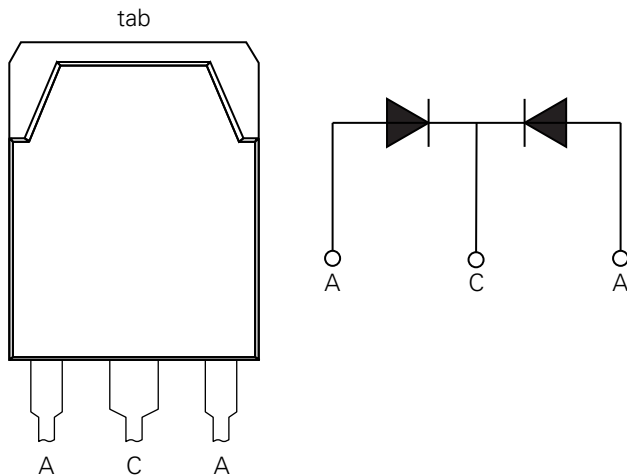
100 V, 2x 25 A Schottky Rectifier Diode

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-3P)**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 25 | A |
| V_F | 0.72 | 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 | 25 (Per Leg) 50 (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 | $T_C = 25^\circ\text{C}$ | 160 | 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 | @ 25 A, Pulse, $T_{VJ} = 25^\circ\text{C}$ | - | 0.90 | V |
| V_{F2} | | @ 25 A, Pulse, $T_{VJ} = 125^\circ\text{C}$ | - | 0.72 | V |
| I_{R1} | Reverse Current (Per Leg)* | @ $V_R = \text{rated } V_{R'}$, $T_{VJ} = 25^\circ\text{C}$ | - | 450 | μA |
| I_{R2} | | @ $V_R = \text{rated } V_{R'}$, $T_{VJ} = 125^\circ\text{C}$ | - | 15 | mA |
| C_T | Junction Capacitance | @ $V_R = 12\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$ | 334 | - | 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 0.8 Max 1.2 | Nm |
| F_C | Mounting force with clip | - | Min 20 Max 120 | N |
| R_{thJC} | Maximum Thermal Resistance Junction to Case | DC operation | 0.95 | K/W |
| R_{thCS} | Typical Thermal Resistance Case to Heat Sink | - | 0.30 | K/W |
| wt | Approximate Weight | - | 6.28 | g |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

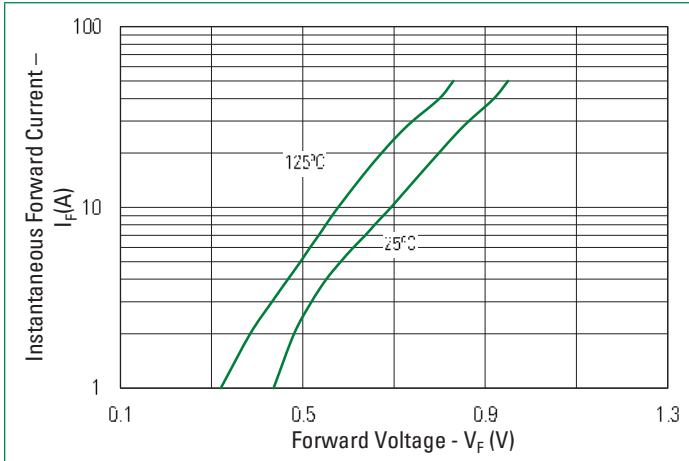


Fig. 2. Typical Reverse Characteristics

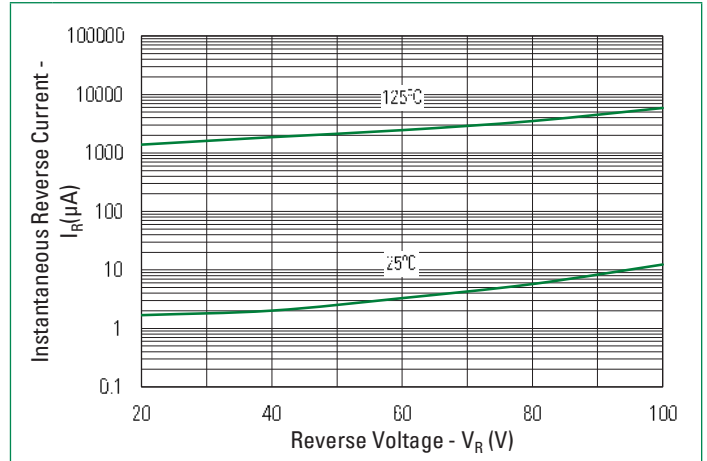
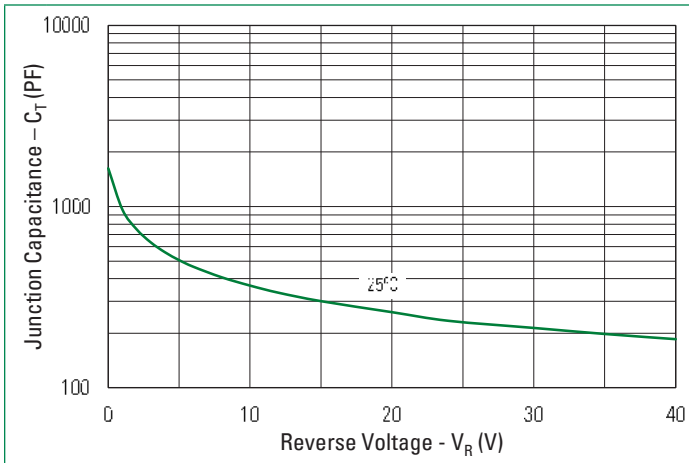
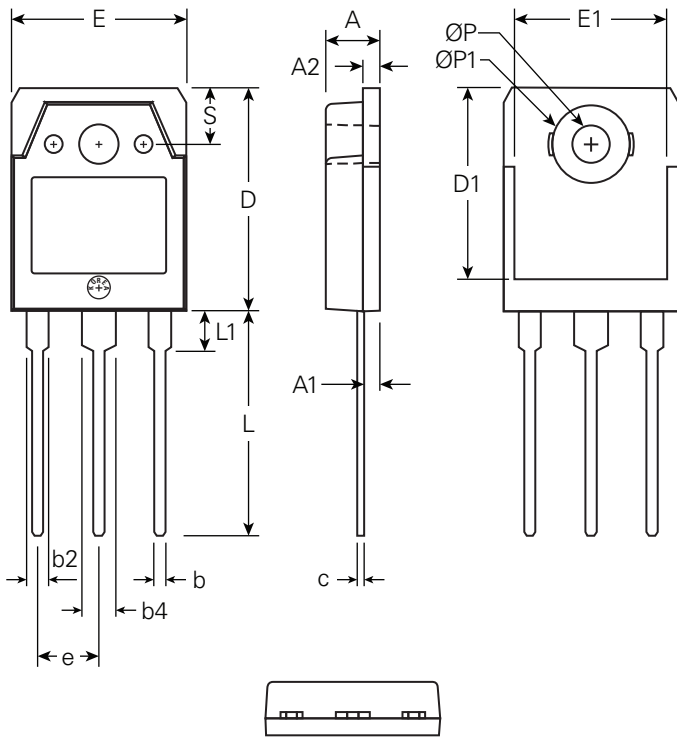


Fig. 3. Typical Junction Capacitance

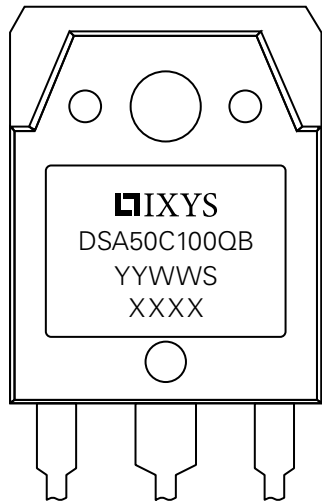


Part Outline Drawing (TO-3P)



| Symbol | Inches | | | Millimeters | | |
|--------|-----------|---------|-------|-------------|---------|-------|
| | Min. | Typical | Max. | Min. | Typical | Max. |
| A | 0.185 | - | 1.193 | 4.70 | - | 4.90 |
| A1 | 0.051 | - | 0.059 | 1.30 | - | 1.50 |
| A2 | 0.057 | - | 0.065 | 1.45 | - | 1.65 |
| b | 0.035 | - | 0.045 | 0.90 | - | 1.15 |
| b2 | 0.075 | - | 0.087 | 1.90 | - | 2.20 |
| b4 | 0.114 | - | 0.126 | 2.90 | - | 3.20 |
| c | 0.022 | - | 0.031 | 0.55 | - | 0.80 |
| D | 0.780 | - | 0.791 | 19.80 | - | 20.10 |
| D1 | 0.665 | - | 0.677 | 16.90 | - | 17.20 |
| E | 0.610 | - | 0.622 | 15.50 | - | 15.80 |
| E1 | 0.531 | - | 0.539 | 13.50 | - | 13.70 |
| e | 0.215 BSC | | | 5.45 BSC | | |
| L | 0.780 | - | 0.795 | 19.80 | - | 20.20 |
| L1 | 0.134 | - | 0.142 | 3.40 | - | 3.60 |
| Ø P | 0.126 | - | 0.134 | 3.20 | - | 3.40 |
| Ø P1 | 0.272 | - | 0.280 | 6.90 | - | 7.10 |
| S | 0.193 | - | 0.201 | 4.90 | - | 5.10 |

Part Number and Marking

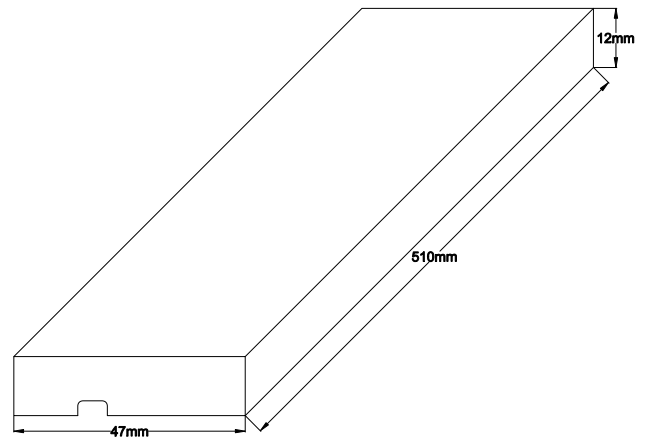


- DS = Schottky Diode
- A = Product Generation
- 50 = Current Rate
- C = Common Cathode
- 100 = Voltage Rating
- QB = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|-------------|---------------|-------|
| DSA50C100QB | DSA50C100QB | Tube (30 pcs) | - |

Packing Specifications



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