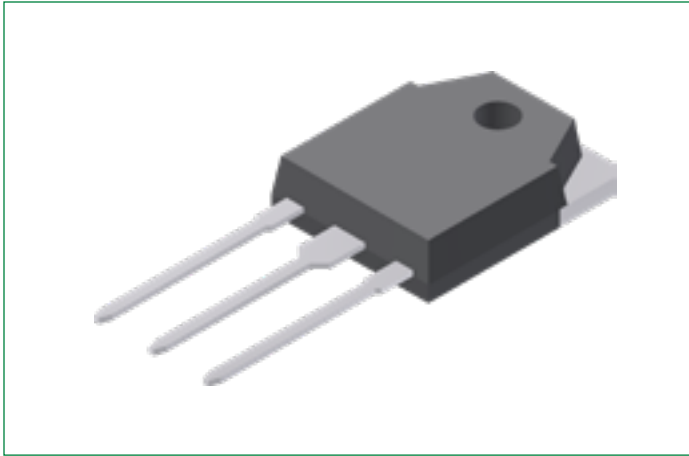


# DSA120C150QB

## 150 V, 2x 60 A Schottky Rectifier Diode

RoHS

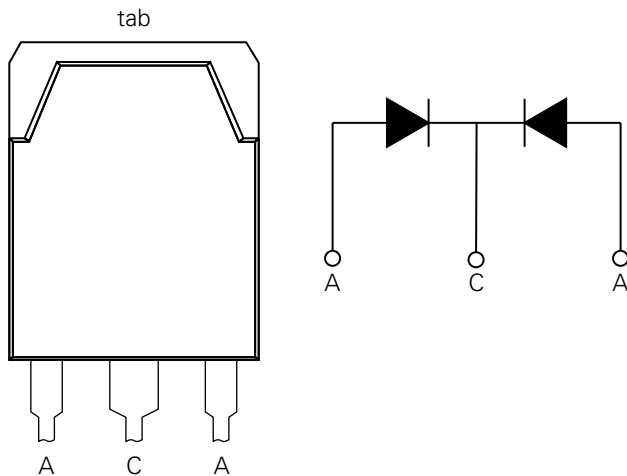
Pb



### 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 |
|----------------|--------|------|
| $V_{RRM}$      | 150    | V    |
| $I_{FAV}$      | 2 x 60 | A    |
| $V_F$          | 0.85   | V    |

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

| Symbol    | Characteristics                                       | Condition                                                          | Max.             | Units |
|-----------|-------------------------------------------------------|--------------------------------------------------------------------|------------------|-------|
| $V_{RRM}$ | Peak Repetitive Reverse Voltage                       | —                                                                  | 150              | V     |
| $V_{RWM}$ | Working Peak Reverse Voltage                          |                                                                    |                  |       |
| $V_R$     | DC Blocking Voltage                                   |                                                                    |                  |       |
| $I_{FAV}$ | Average Rectified Forward Current                     | 50% duty cycle @ $T_C = 150^\circ\text{C}$ , rectangular wave form | 60 (Per Leg)     | A     |
|           |                                                       |                                                                    | 120 (Per Device) |       |
| $I_{FSM}$ | Peak One Cycle Non-Repetitive Surge Current (Per Leg) | 10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$                | 800              | A     |
| $P_{tot}$ | Total power dissipation                               | $T_C = 25^\circ\text{C}$                                           | 375              | 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> | @ 60 A, Pulse, $T_{VJ} = 25^\circ\text{C}$                                   | —    | 0.93 | V     |
| $V_{F2}$ |                                             | @ 60 A, Pulse, $T_{VJ} = 125^\circ\text{C}$                                  | —    | 0.85 | V     |
| $I_{R1}$ | Reverse Current (Per Leg)*                  | @ $V_R = \text{rated } V_R$ , $T_{VJ} = 25^\circ\text{C}$                    | —    | 0.90 | mA    |
| $I_{R2}$ |                                             | @ $V_R = \text{rated } V_R$ , $T_{VJ} = 125^\circ\text{C}$                   | —    | 5    | mA    |
| $C_T$    | Junction Capacitance                        | @ $V_R = 24\text{ V}$ , $T_C = 25^\circ\text{C}$<br>$f_{SIG} = 1\text{ MHz}$ | 500  | —    | 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        | $^\circ\text{C}$ |
| $M_D$      | Mounting Torque                              | —            | Min 0.8<br>Max 1.2 | Nm               |
| $F_C$      | Mounting force with clip                     | —            | Min 20<br>Max 120  | N                |
| $R_{thJC}$ | Maximum Thermal Resistance Junction to Case  | DC operation | 0.40               | 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

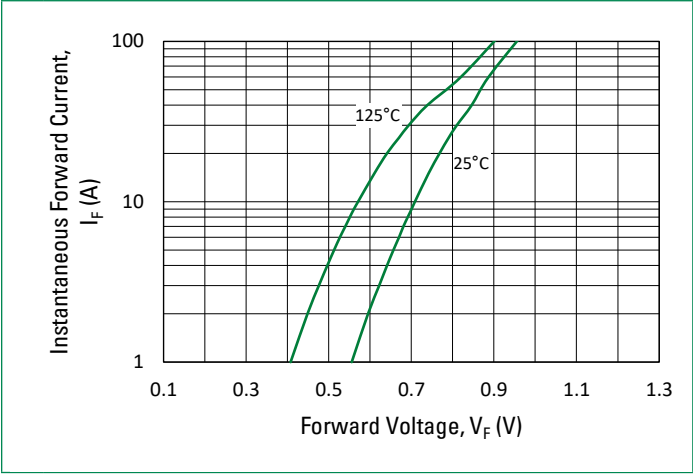


Fig. 2. Typical Reverse Characteristics

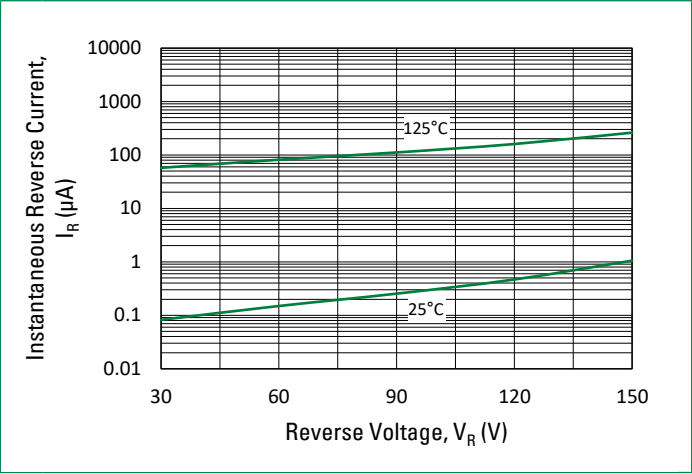
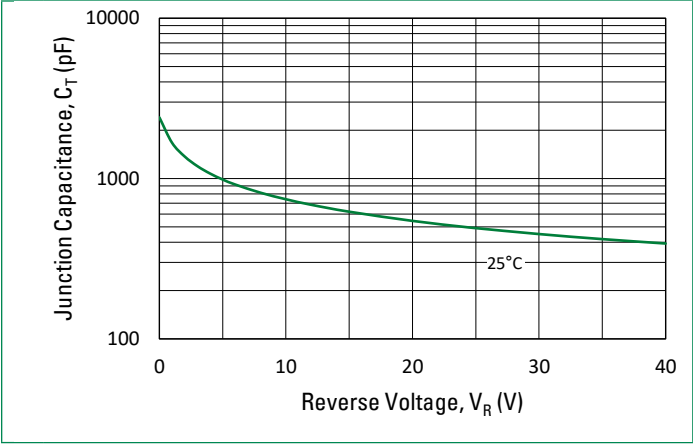
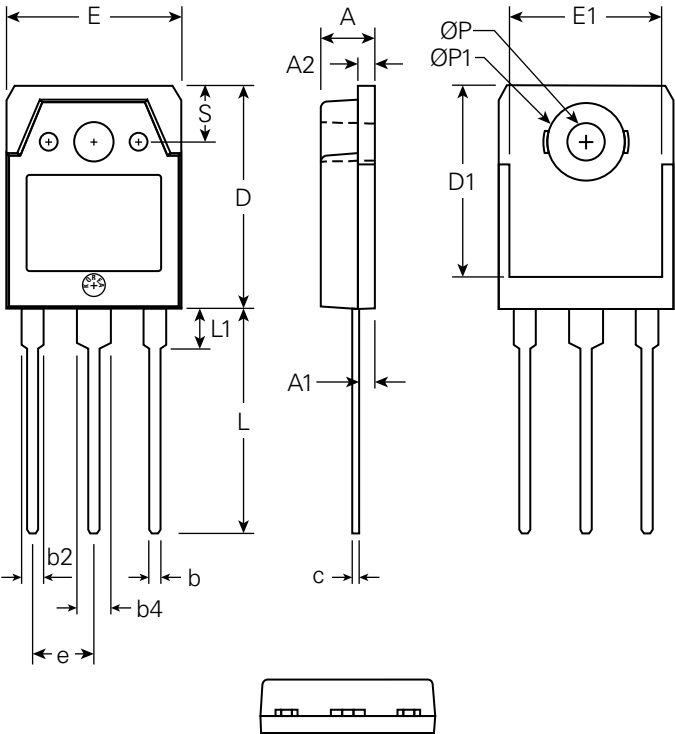


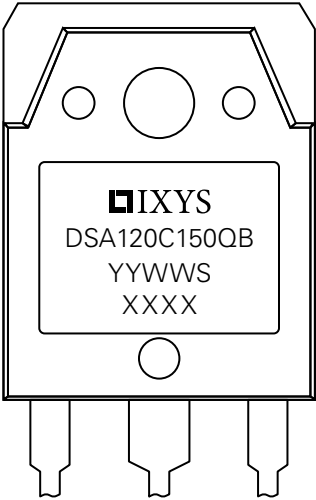
Fig. 3. Typical Junction Capacitance





| 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  |
| ØP     | 0.126     | –       | 0.134 | 3.20        | –       | 3.40  |
| ØP1    | 0.272     | –       | 0.280 | 6.90        | –       | 7.10  |
| S      | 0.193     | –       | 0.201 | 4.90        | –       | 5.10  |

Part Number and Marking

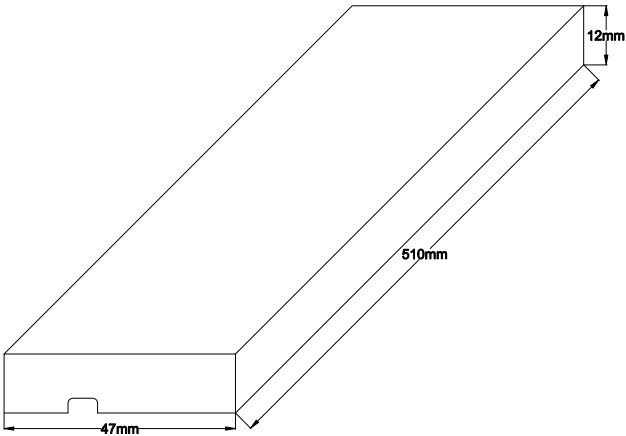


- DS = Schottky Diode
- A = Product Generation
- 120 = Current Rate
- C = Common Cathode
- 150 = Voltage Rating
- QB = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXX = Lot Number

Ordering Information

| Part Number  | Marking      | Packing Mode  | M.O.Q |
|--------------|--------------|---------------|-------|
| DSA120C150QB | DSA120C150QB | Tube (30 pcs) | –     |

Packing Specifications



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Part of:

