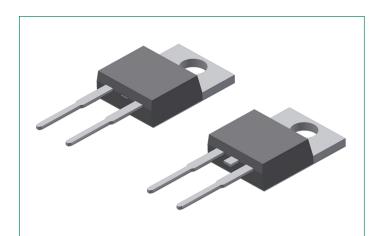
DSA30I100PA

100 V, 30 A Schottky Rectifier Diode



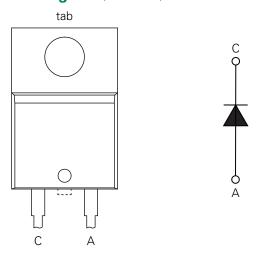




Features:

- 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-220AC)



C: Cathode; A: Anode; tab: Cathode

Applications:

1

- Rectifiers in Switch Mode Power Supplies (SMPS)
- Free wheeling diode in low voltage converters

Product Summary

| Characteristic | | Value | Unit | |
|----------------|--------|-------|------|--|
| V _R | RM | 100 | V | |
| I | AV | 30 | А | |
| V | , E | 0.78 | V | |

DSA30I100PA Diode **Datasheet**

Maximum Ratings ($T_A = 25$ °C unless otherwise specified)

| Symbol | Characteristics | Condition | Max. | Units |
|------------------|---|---|------|-------|
| V _{RRM} | Peak Repetitive Reverse Voltage | | | |
| V _{RWM} | Working Peak Reverse Voltage | _ | 100 | V |
| V_{R} | DC Blocking Voltage | | | |
| l _{FAV} | Average Rectified Forward Current | 50% duty cycle @T _c = 150°C, rectangular wave form | 30 | А |
| I _{FSM} | Peak One Cycle Non-Repetitive Surge Current | 10 ms, Half Sine pulse, T _{VJ} = 25°C | 340 | А |
| P _{tot} | Total Power Dissipation | T _C = 25°C | 175 | W |

Electrical Characteristics ($T_A = 25$ °C unless otherwise specified)

| Symbol | Characteristics | Conditions | Тур. | Max. | Units |
|-----------------|-----------------------------------|--|------|------|-------|
| V _{F1} | Forward Voltage Drani | @ 30 A, Pulse, T _{vJ} = 25°C | _ | 0.95 | V |
| V _{F1} | Forward Voltage Drop ¹ | @ 30 A, Pulse, T _{VJ} = 125°C | _ | 0.78 | V |
| I _{R1} | Reverse Current* | $@V_R = rated V_R, T_{VJ} = 25^{\circ}C$ | _ | 450 | μΑ |
| I _{R2} | neverse Current | $@V_R = rated V_R, T_{VJ} = 125^{\circ}C$ | _ | 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 $< 300 \mu s$, duty cycle < 2%

Thermal-Mechanical Specifications

| Symbol | Characteristics | Condition | Specification | Units |
|----------------------------|--|--------------|--------------------|-------|
| T _{VJ} | Junction Temperature | _ | -55 to +175 | °C |
| T _o | Operation temperature | _ | -55 to +150 | °C |
| T_{stg} | Storage Temperature | _ | -55 to +150 | °C |
| $M_{\scriptscriptstyle D}$ | Mounting torque | _ | Min 0.4 Max 0.6 | Nm |
| F _c | Mounting force with clip | _ | Min 20 Max 60 | N |
| R _{thJC} | Maximum Thermal Resistance Junction to Case | DC operation | 0.85 | K/W |
| R _{thCS} | Typical Thermal Resistance Junction to Heat Sink | _ | 0.5 | K/W |
| wt | Approximate Weight | - | 1.6 | g |



DSA30I100PA Diode **Datasheet**

Characteristic Curves

Fig. 1. Typical Forward Characteristics

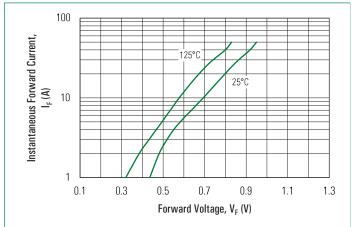


Fig. 2. Typical Reverse Characteristics

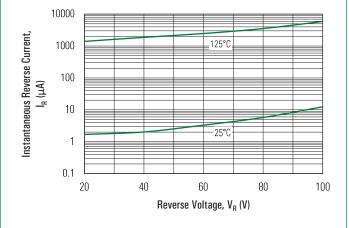
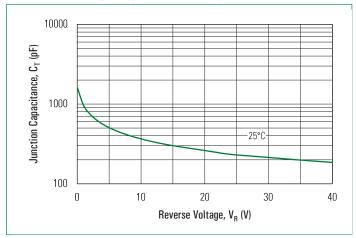


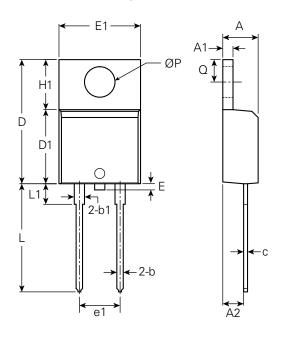
Fig. 3. Typical Junction Capacitance





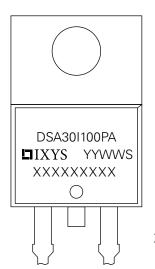
DSA30I100PA Diode **Datasheet**

Part Outline Drawing (TO-220AC)



| Complete | Inches | | | Millimeters | | |
|----------|--------|---------|-------|-------------|---------|-------|
| Symbol | Min. | Typical | Max. | Min. | Typical | Max. |
| A | 0.14 | _ | 0.19 | 3.56 | _ | 4.83 |
| A1 | 0.02 | _ | 0.06 | 0.51 | _ | 1.40 |
| A2 | 0.08 | _ | 0.11 | 2.03 | _ | 2.92 |
| b | 0.01 | _ | 0.04 | 0.38 | _ | 1.02 |
| b1 | 0.04 | _ | 0.07 | 1.14 | _ | 1.78 |
| С | 0.12 | - | 0.02 | 0.31 | _ | 0.61 |
| D | 0.56 | _ | 0.65 | 14.22 | _ | 16.51 |
| D1 | 0.33 | _ | 0.37 | 8.38 | _ | 9.42 |
| Е | _ | _ | 0.07 | _ | _ | 1.78 |
| E1 | 0.38 | 0.40 | 0.42 | 9.65 | 10.16 | 10.67 |
| e1 | _ | 0.20 | _ | _ | 5.08 | _ |
| H1 | 0.23 | _ | 0.27 | 5.84 | _ | 6.86 |
| L | 0.50 | _ | 0.58 | 12.70 | _ | 14.73 |
| L1 | _ | _ | 0.25 | _ | _ | 6.35 |
| Q | 0.10 | _ | 0.135 | 2.54 | _ | 3.43 |
| ØP | - | 0.14 | - | _ | 3.56 | - |

Part Number and Marking



DS = Schottky Diode

A = Product Generation

30 = Current Rating

I = Single Part

100 = Voltage Rating

PA = Package Code

YY = Year

WW = Work Week

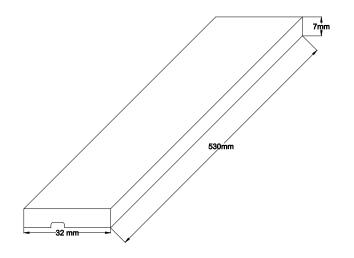
S = Plant Location Code

XXXXXXXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | M.O.Q | |
|-------------|-------------|---------------|-------|--|
| DSA30I100PA | DSA30I100PA | Tube (50 pcs) | - | |

Packing Specifications



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Part of:



