

Product Summary (@ $T_A = +25^\circ\text{C}$)

| V_{RRM} (V) | I_o (A) | V_F (V) | I_R (μA) |
|---------------|-----------|-----------|-------------------------|
| 1000 | 1.0 | 1.1 | 5 |

Description and Applications

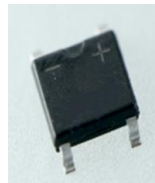
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

Features and Benefits

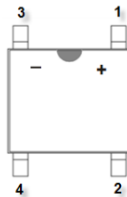
- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- High Current Capability
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

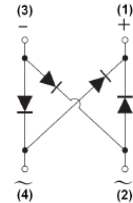
- Case: SOPA-4
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: As Marked on Body
- Weight: 0.10 grams (Approximate)



Top View



Pin Diagram

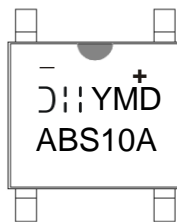


Internal Schematic

Ordering Information (Note 4)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|--------|-------------------|
| ABS10A-13 | Commercial | SOPA-4 | 5,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information


ABS10A = Product Type Marking Code

= Manufacturers' Code Marking

YMD = Date Code Marking

Y = Last Digit of Year (ex: 7 = 2017)

M = See Month/Code Table Below

D = Day 1 to 9 = 1 to 9; Day 10 to 31 = A to V

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | Value | Unit |
|--|--|-------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 1000 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 700 | V |
| Average Rectified Output Current (Note 6) @ T _A = +30°C | I _O | 1.0 | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 35 | A |
| I ² t Rating for Fusing (1ms < t < 8.3ms) | I ² t | 5.08 | A ² S |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element) | R _{θJA} | 66 | °C/W |
| Typical Thermal Resistance, Junction to Lead (Per Element) | R _{θJL} | 37 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|--------------------|-------|-----|----------|------|---|
| Reverse Breakdown Voltage (Note 7) | V _{(BR)R} | 1,000 | — | — | V | I _R = 5μA |
| Forward Voltage (Per Element) | V _F | — | — | 1.1 | V | I _F = 1.0A, T _A = +25°C |
| Leakage Current (Note 7) (Per Element) | I _R | — | — | 5 500 | μA | V _R = 1,000V, T _A = +25°C V _R = 1,000V, T _A = +125°C |
| Total Capacitance (Per Element) | C _T | — | 9 | — | pF | V _R = 4V, f = 1.0MHz |

- Notes:
5. Device mounted on FR-4 substrate, 1"×1", 2oz, single-sided, PC boards with 0.15"×0.26" copper pad.
 6. Device mounted on FR-4 substrate, 1"×1", 2oz, single-sided, PC boards with 0.56"×0.73" copper pad.
 7. Short duration pulse test used to minimize self-heating effect.

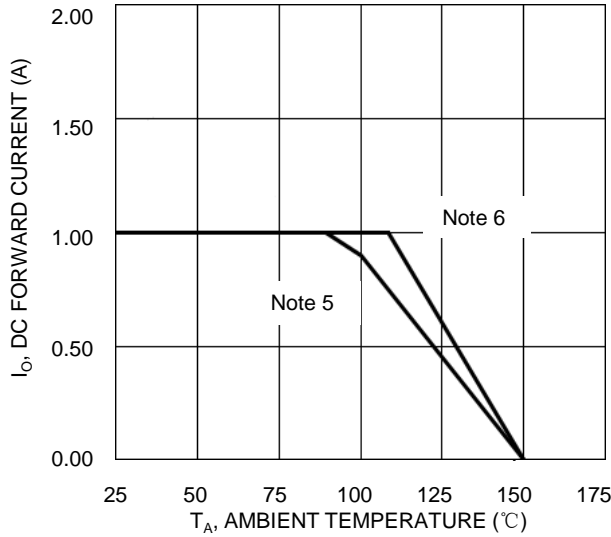


Figure 1. DC Forward Current Derating

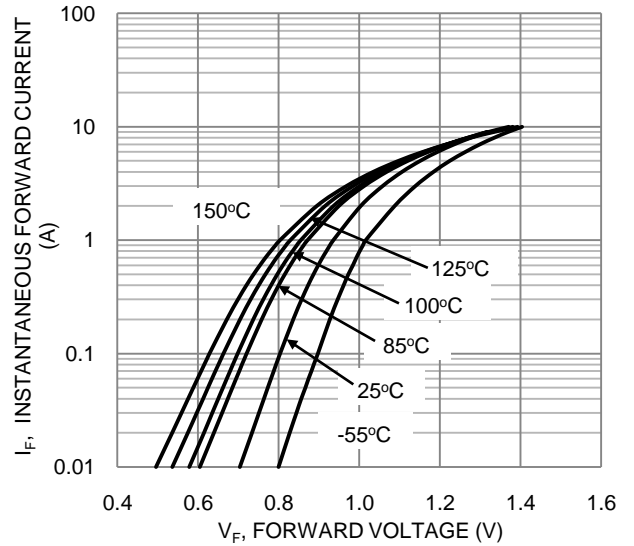


Figure 2. Typical Forward Characteristics

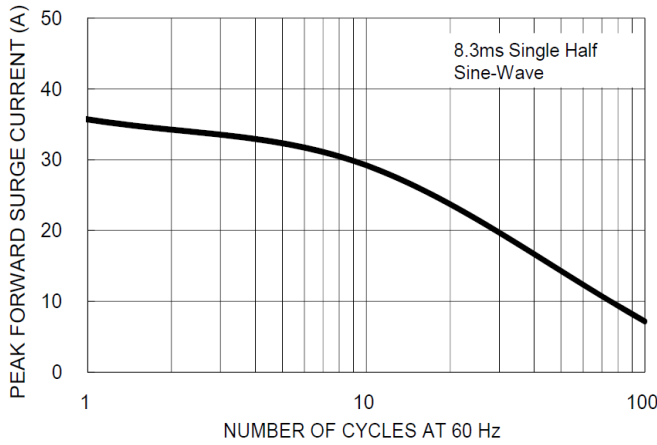


Figure 3. Maximum Non-repetitive Forward Surge Current

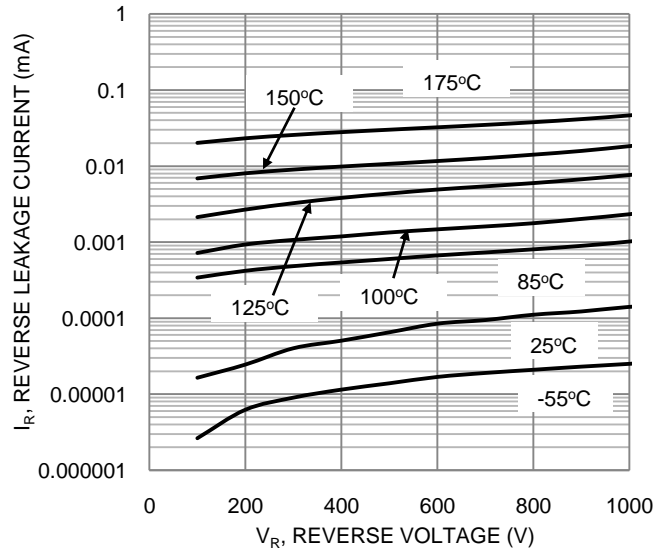


Figure 4. Typical Reverse Characteristics

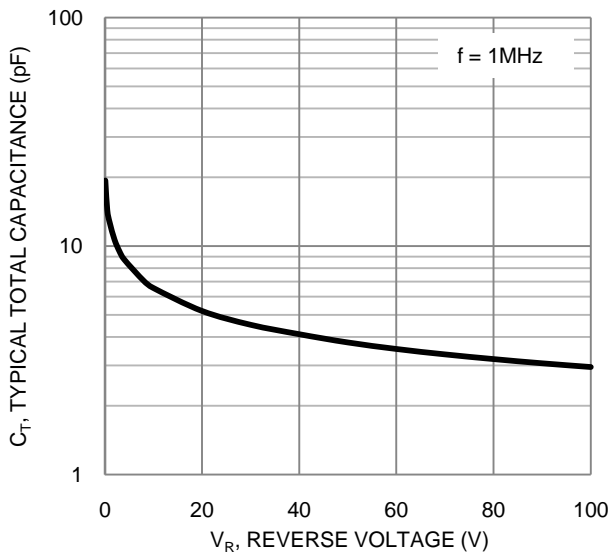
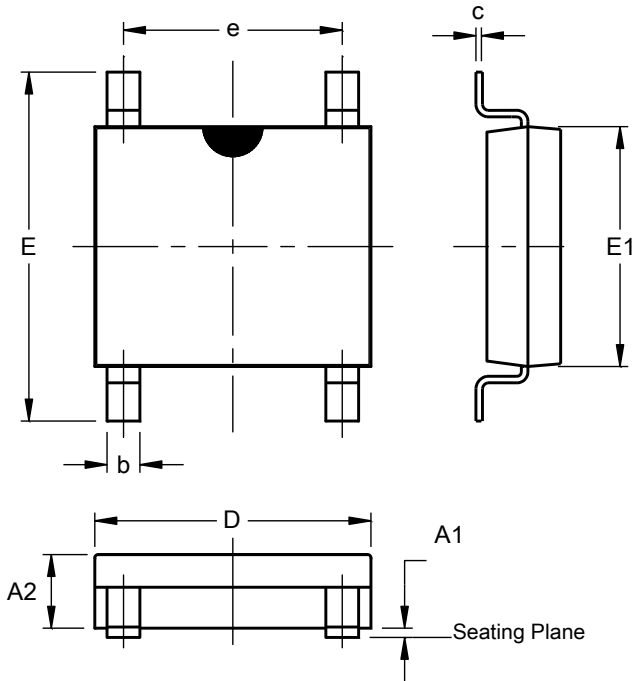


Figure 5. Typical Total Capacitance

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOPA-4



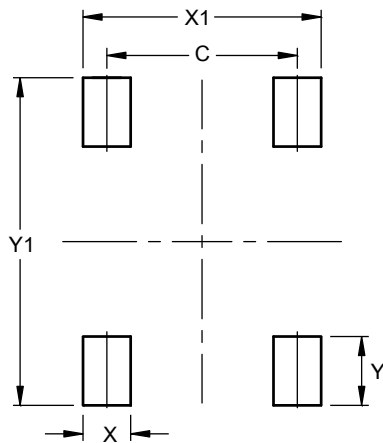
| SOPA-4 | | | |
|----------------------|------|------|-----|
| Dim | Min | Max | Typ |
| A1 | -- | 0.20 | -- |
| A2 | 1.20 | 1.50 | -- |
| b | 0.50 | 0.70 | -- |
| c | 0.15 | 0.25 | -- |
| D | 4.80 | 5.30 | -- |
| E | 6.00 | 6.80 | -- |
| E1 | 4.20 | 4.60 | -- |
| e | 3.80 | 4.20 | -- |
| All Dimensions in mm | | | |

NEW PRODUCT

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOPA-4



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 4.00 |
| X | 1.00 |
| X1 | 5.00 |
| Y | 1.45 |
| Y1 | 6.90 |

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