

**Product Summary** (@ T<sub>A</sub> = +25°C)

| V <sub>RRM</sub> (V) | I <sub>O</sub> (A) | V <sub>F(MAX)</sub> (V) | I <sub>R(MAX)</sub> (mA) |
|----------------------|--------------------|-------------------------|--------------------------|
| 40                   | 3                  | 0.50                    | 0.20                     |

**Applications**

For use in low-voltage, high-frequency inverters, freewheeling, DC-DC converters, and polarity applications.

- SMPS
- AC-DC
- DC-DC Converter
- Freewheeling Diodes
- Reverse Polarity Protection
- Blocking Diodes



SMAF



Device Symbol

**Features and Benefits**

- Low Leakage Current
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.**

<https://www.diodes.com/quality/product-definitions/>

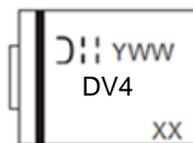
**Mechanical Data**

- Case: SMAF
- Case Material: Molded Plastic, "Green" Molding Compound. 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 Indicator: Cathode Band
- Weight: 0.036 grams (Approximate)

**Ordering Information** (Note 4)

| Part Number | Compliance | Package | Packaging          |
|-------------|------------|---------|--------------------|
| B340AXF-13  | Commercial | SMAF    | 10,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

**Marking Information** (Note 5)


DV4 = Product Type Marking Code  
 J!! = Manufacturer's Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 1 for 2021)  
 WW = Week Code (01 to 52)  
 XX = Foundry and Assembly Site

Note: 5. Device has a cathode band (as shown) and may also have a cathode notch.

### Maximum Ratings (@T<sub>A</sub> = +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   | V <sub>RRM</sub> | 40    | V    |
| Working Peak Reverse Voltage  | V <sub>RWM</sub> | 40    |      |
| DC Blocking Voltage   | V <sub>RM</sub>  | 40    |      |
| Average Rectified Output Current  | I <sub>O</sub>   | 3     | A    |
| Non-Repetitive Peak Forward Surge Current 1ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 65    | A    |

### Thermal Characteristics

| Characteristic                                   | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Thermal Resistance, Junction to Ambient (Note 6) | R <sub>θJA</sub>                  | 51          | °C/W |
| Thermal Resistance, Junction to Case (Note 6)    | R <sub>θJC</sub>                  | 28          |      |
| Operating and Storage Temperature Range          | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

Note: 6. Device mounted on FR-4 substrate, 0.4"×0.5", 2oz, single-sided, PC boards with 0.2"×0.25" copper pad. The heat generated must be less than the thermal conductivity from junction to case:  $dP_D / dT_J < 1/R_{\theta JC}$  or junction to ambient:  $dP_D / dT_J < 1/R_{\theta JA}$ .

### Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic           | Symbol         | Typ  | Max  | Unit | Test Condition                                 |
|--------------------------|----------------|------|------|------|--|
| Forward Voltage Drop     | V <sub>F</sub> | 0.45 | 0.50 | V    | I <sub>F</sub> = 3.0A, T <sub>J</sub> = +25°C  |
|                          |                | 0.39 | —    |      | I <sub>F</sub> = 3.0A, T <sub>J</sub> = +100°C |
| Leakage Current (Note 7) | I <sub>R</sub> | 0.02 | 0.20 | mA   | V <sub>R</sub> = 40V, T <sub>J</sub> = +25°C   |
|                          |                | 4    | 20   |      | V <sub>R</sub> = 40V, T <sub>J</sub> = +100°C  |

Note: 7. Short duration pulse test used to minimize self-heating effect.

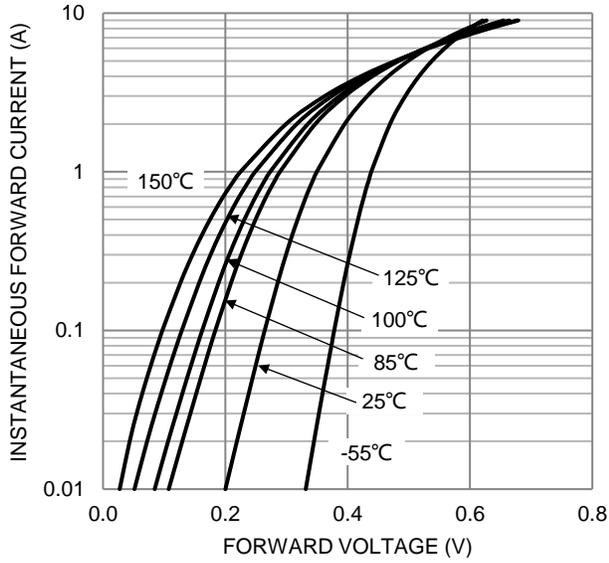


Figure 1. Typical Forward Characteristics

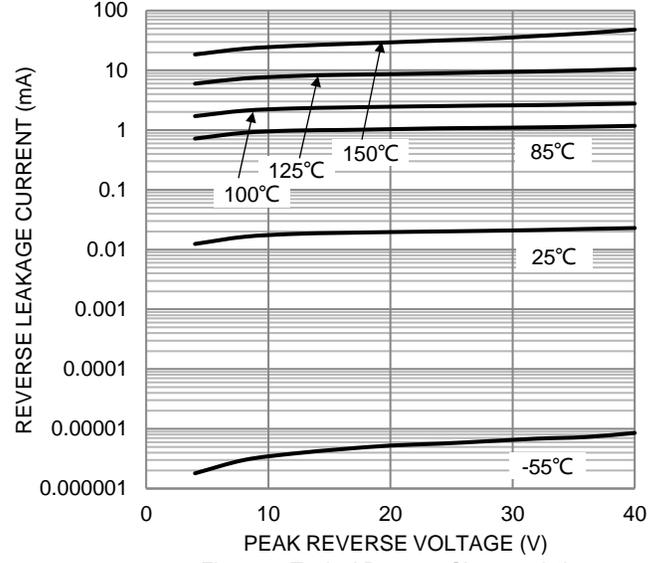


Figure 2. Typical Reverse Characteristics

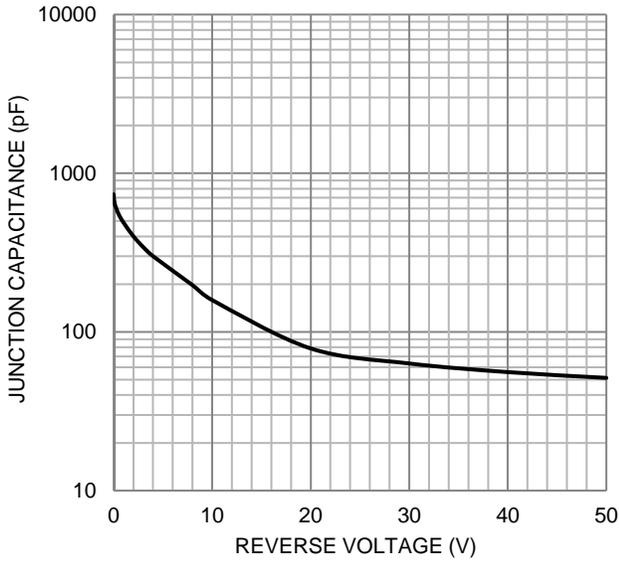


Figure 3. Total Capacitance vs. Reverse Voltage

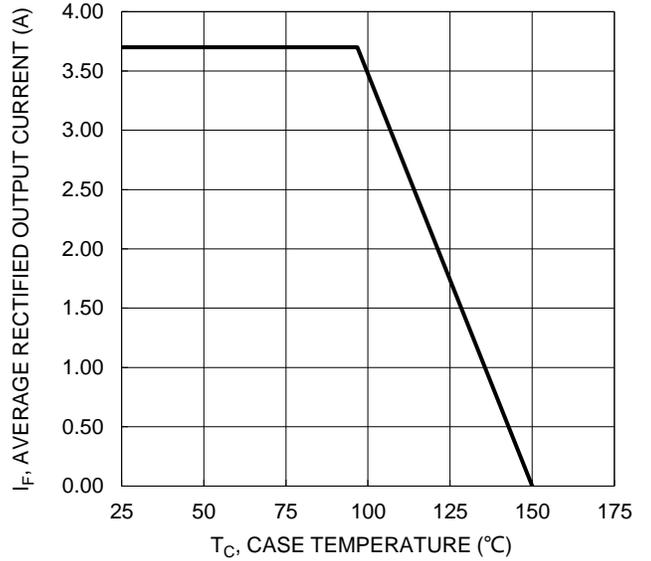
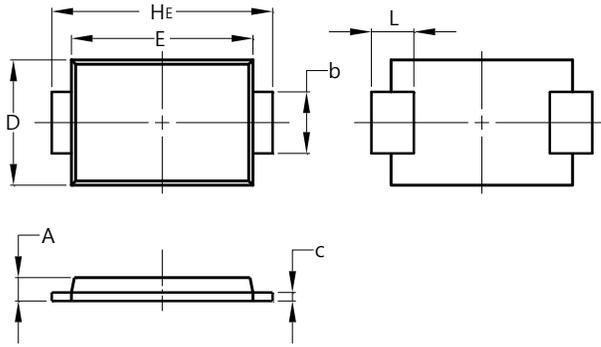


Figure 4. DC Forward Current Derating

**Package Outline Dimensions**

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

**SMAF**

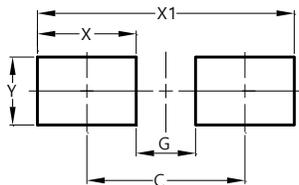


| SMAF                        |      |      |
|-----------------------------|------|------|
| Dim                         | Min  | Max  |
| A                           | 0.90 | 1.10 |
| b                           | 1.25 | 1.65 |
| c                           | 0.10 | 0.40 |
| D                           | 2.25 | 2.95 |
| E                           | 3.95 | 4.60 |
| HE                          | 4.80 | 5.60 |
| L                           | 0.50 | 1.50 |
| <b>All Dimensions in mm</b> |      |      |

**Suggested Pad Layout**

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

**SMAF**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.00          |
| G          | 1.50          |
| X          | 2.50          |
| X1         | 6.50          |
| Y          | 1.70          |

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