

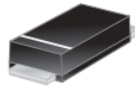
Product Summary (@ T_A = +25°C)

| V _{RRM} (V) | I _O (A) | V _{F(MAX)} (V) | I _{R(MAX)} (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/>

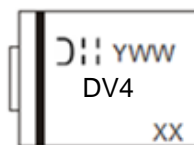
Mechanical Data

- 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_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 | V _{RRM} | 40 | V |
| Working Peak Reverse Voltage | V _{RWM} | 40 | |
| DC Blocking Voltage | V _{RM} | 40 | |
| Average Rectified Output Current | I _O | 3 | A |
| Non-Repetitive Peak Forward Surge Current 1ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 65 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Thermal Resistance, Junction to Ambient (Note 6) | R _{θJA} | 51 | °C/W |
| Thermal Resistance, Junction to Case (Note 6) | R _{θJC} | 28 | |
| Operating and Storage Temperature Range | T _J , T _{STG} | -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_A = +25°C, unless otherwise specified.)

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

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

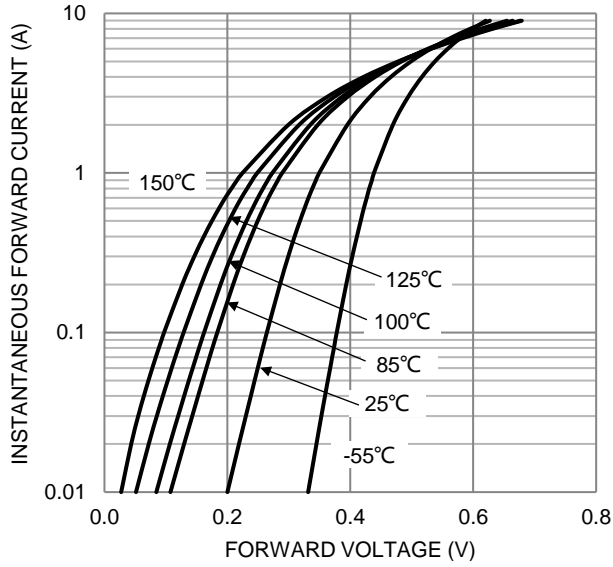


Figure 1. Typical Forward Characteristics

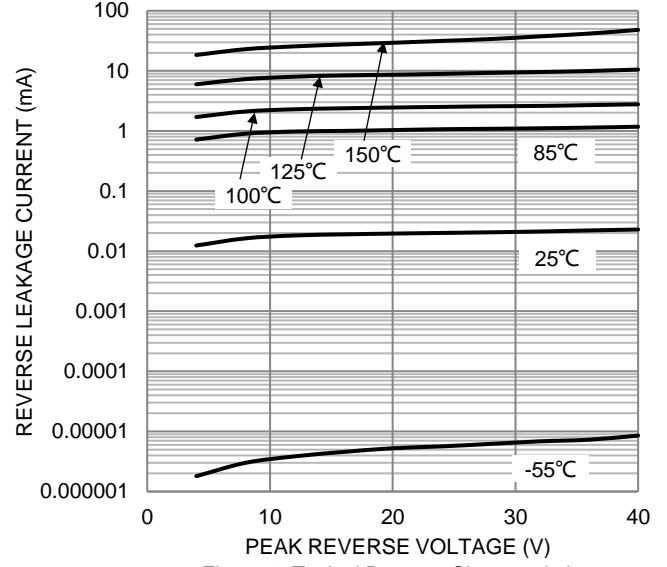


Figure 2. Typical Reverse Characteristics

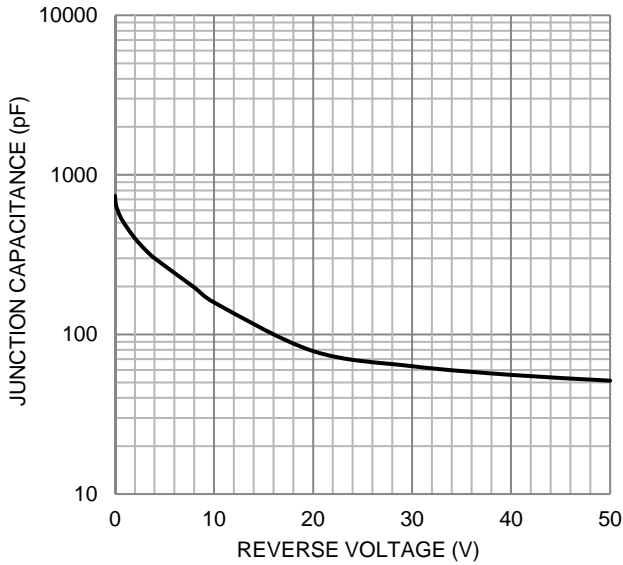


Figure 3. Total Capacitance vs. Reverse Voltage

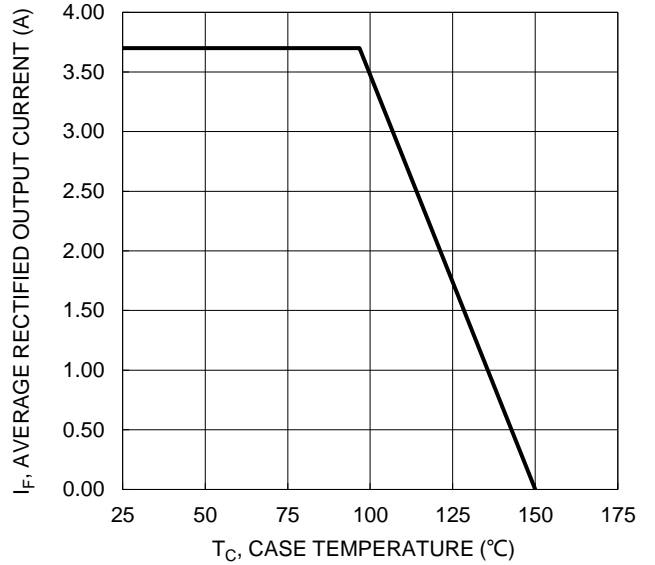
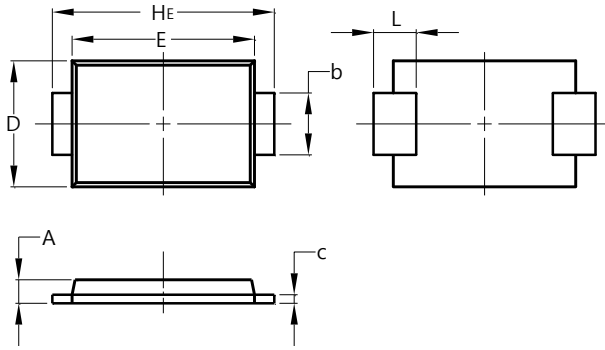


Figure 4. DC Forward Current Derating

Package Outline Dimensions

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

SMAF

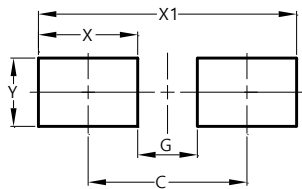


| SMAF | | |
|-----------------------------|------|------|
| Dim | Min | Max |
| A | 0.90 | 1.10 |
| b | 1.25 | 1.65 |
| c | 0.10 | 0.40 |
| D | 2.25 | 2.95 |
| E | 3.95 | 4.60 |
| HE | 4.80 | 5.60 |
| L | 0.50 | 1.50 |
| All Dimensions in mm | | |

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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