



**THE DATASHEET OF  
B340AF-13**



## Product Summary

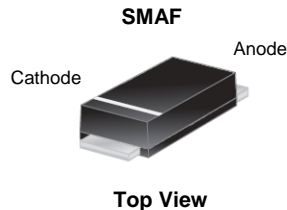
B340AF/B345AF

Part Number	V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F(MAX)</sub> (V) @ +25°C	I <sub>R(MAX)</sub> (mA) @ +25°C
B340AF	40	3	0.50	0.20
B345AF	45	3	0.50	0.30

## Description and Applications

The DIODES™ B340AF is a 3A 40V and DIODES™ B345AF is a 3A 45V single rectifier packaged in the low profile SMAF package. Providing low V<sub>F</sub> and excellent reverse leakage stability at high temperatures, this device is ideal for use in general rectification applications such as:

- Boost diodes
- Blocking diodes
- Recirculating diodes

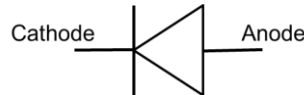


## Features and Benefits

- Reduced Low Forward Voltage Drop (V<sub>F</sub>); Better Efficiency and Cooler Operation
- Reduced High-temperature Reverse Leakage; Increased Reliability Against Thermal Runaway Failure in High Temperature Operation.
- **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-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

## Mechanical Data

- Package: SMAF
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.036 grams (Approximate)

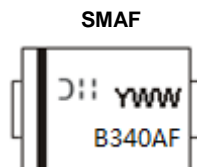


## Ordering Information (Note 4)

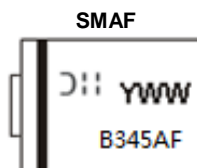
Part Number	Package	Packing	
		Qty.	Carrier
B340AF-13	SMAF	10,000	Tape & Reel
B345AF-13	SMAF	10,000	Tape & Reel

- 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



B340AF = Product Type Marking Code  
 JII = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 2 for 2022)  
 WW = Week Code (01 to 53)



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**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	B340AF	B345AF	Unit
Peak Repetitive Reverse Voltage	V <sub>R</sub> RM	40	45	V
Working Peak Reverse Voltage	V <sub>R</sub> WM			
DC Blocking Voltage	V <sub>R</sub> M			
Average Rectified Output Current	I <sub>O</sub>	3		A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	80		A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	35	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	6.0	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.47 0.43	0.50 —	V	I <sub>F</sub> = 3A, T <sub>J</sub> = +25°C I <sub>F</sub> = 3A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	B340AF	—	0.03	0.20	mA	V <sub>R</sub> = 40V, T <sub>J</sub> = +25°C
	B345AF	—	15 0.04 18.0	— 0.30 —		V <sub>R</sub> = 40V, T <sub>J</sub> = +125°C V <sub>R</sub> = 45V, T <sub>J</sub> = +25°C V <sub>R</sub> = 45V, T <sub>J</sub> = +125°C
Typical Capacitance	C <sub>T</sub>	—	120	—	pF	V <sub>R</sub> = 4.0V, f = 1MHz

Notes: 5. Device mounted on 2inch\*2inch Al board.  
6. Short duration pulse test used to minimize self-heating effect.

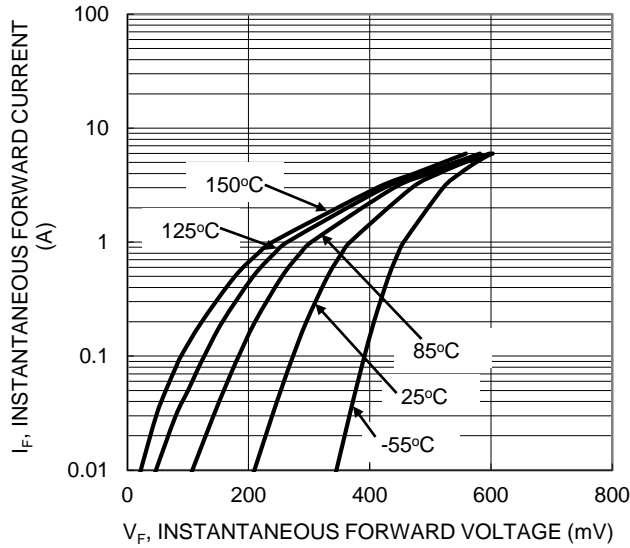


Figure 1. Typical Forward Characteristics

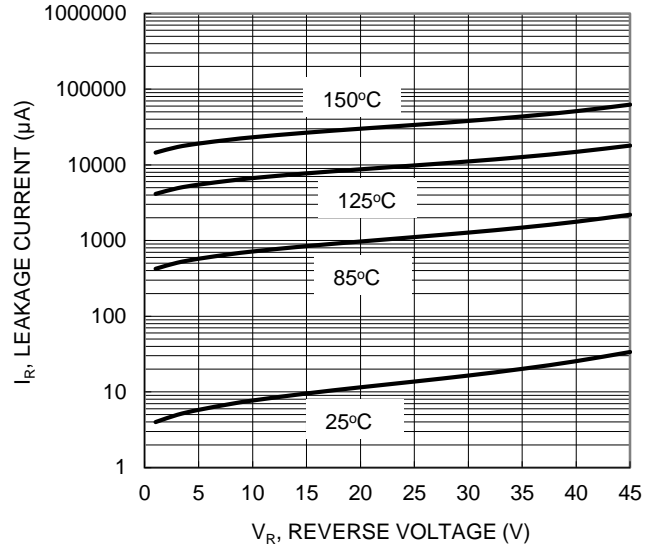


Figure 2. Typical Reverse Characteristics

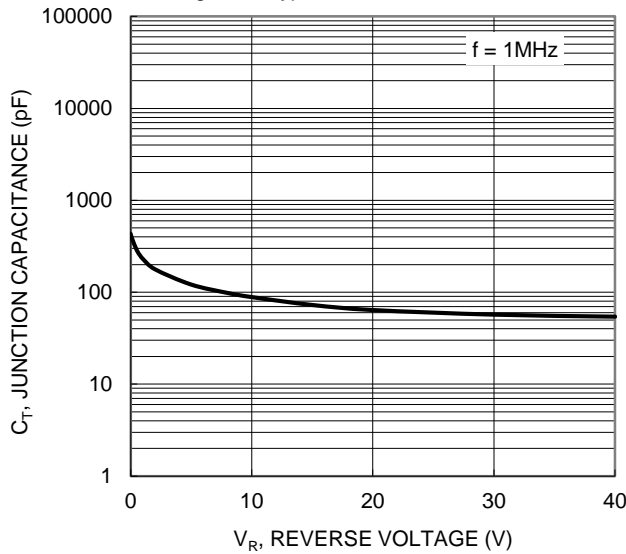


Figure 3. Typical Junction Capacitance

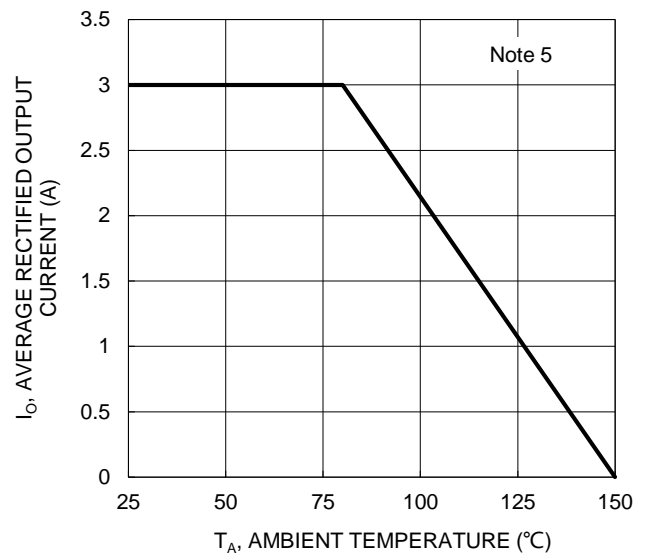


Figure 4. DC Forward Current Derating

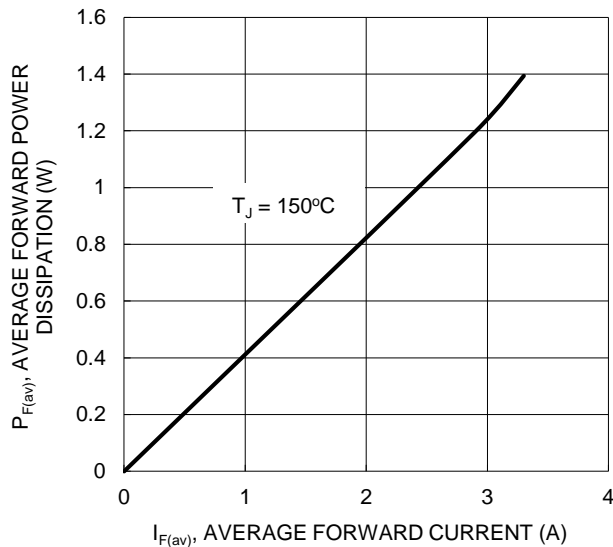


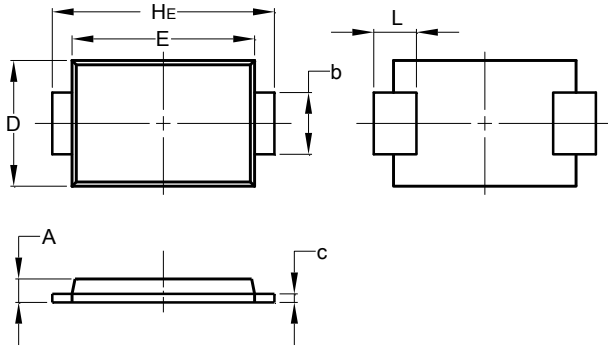
Figure 5. Forward Power Dissipation

Note: 5. Device mounted on 2inch\*2inch Al board.

## Package Outline Dimensions

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

### SMAF

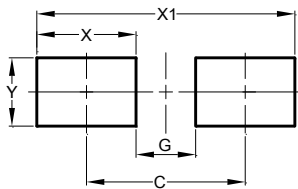


SMAF		
Dim	Min	Max
A	0.90	1.10
b	1.25	1.65
c	0.10	0.40
D	2.25	2.95
E	3.95	4.60
H <sub>E</sub>	4.80	5.60
L	0.50	1.50
All Dimensions in mm		

## 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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