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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## 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 B340AF is a 3A 40V and 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)

## 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: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 
- Polarity: Cathode Band
- Weight: 0.036 grams (Approximate)



Top View

## Ordering Information (Note 4)

Part Number	Case	Packaging
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) compliant. All applicable RoHS exemptions applied.
2. See [http://www.diodes.com/quality/lead\\_free.html](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>.

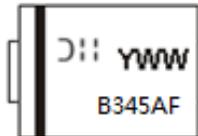
## Marking Information

SMAF



B340AF = Product Type Marking Code  
 DJI = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 6 for 2016)  
 WW = Week Code (01 to 53)

SMAF



B345AF = Product Type Marking Code  
 DJI = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 6 for 2016)  
 WW = Week Code (01 to 53)

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$			
Working Peak Reverse Voltage	$V_{RWM}$	40	45	V
DC Blocking Voltage	$V_{RM}$			
Average Rectified Output Current	$I_O$		3	A
Non-Repetitive Peak Forward Surge Current 8.3ms	$I_{FSM}$		80	A
Single Half Sine-Wave Superimposed on Rated Load				

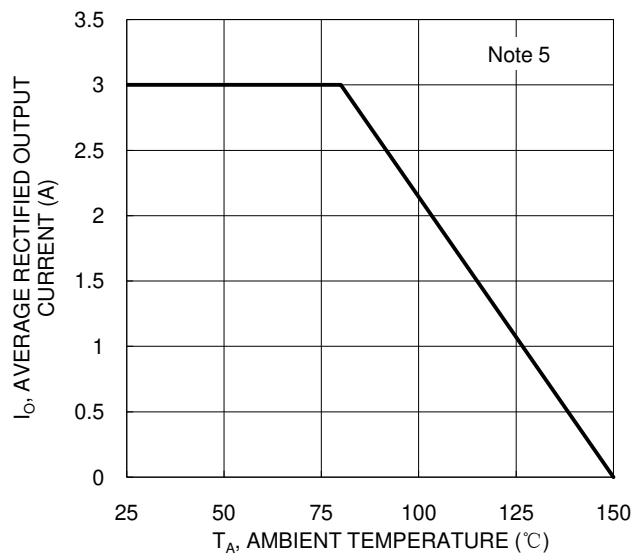
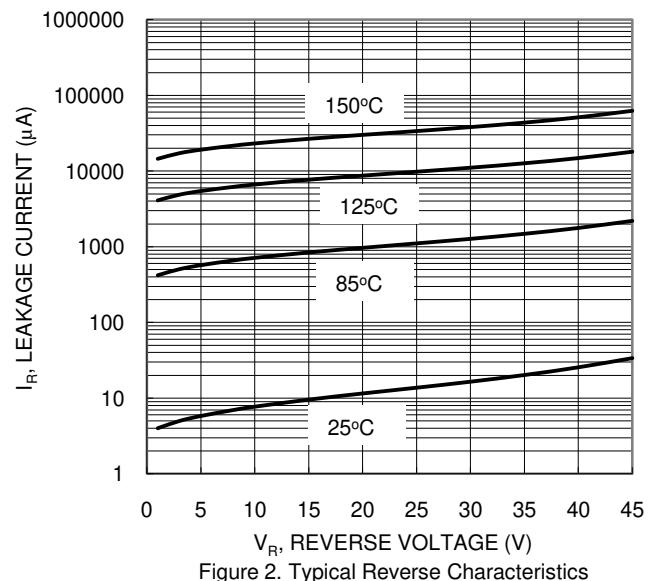
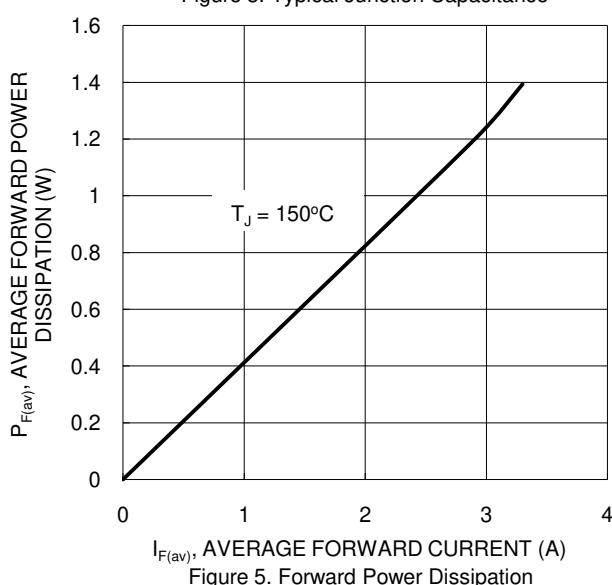
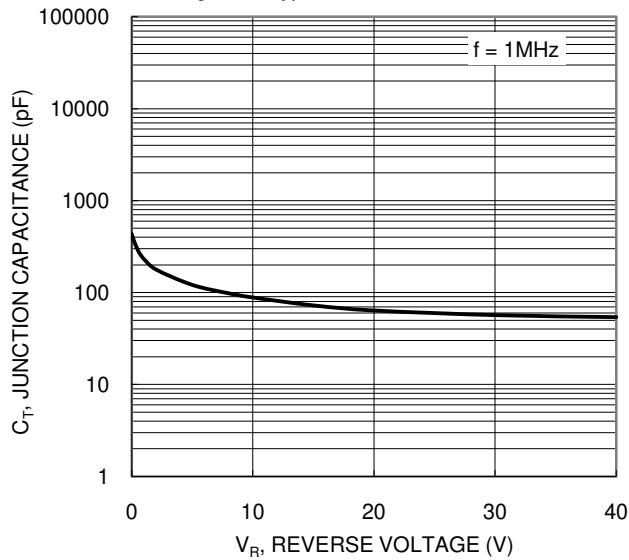
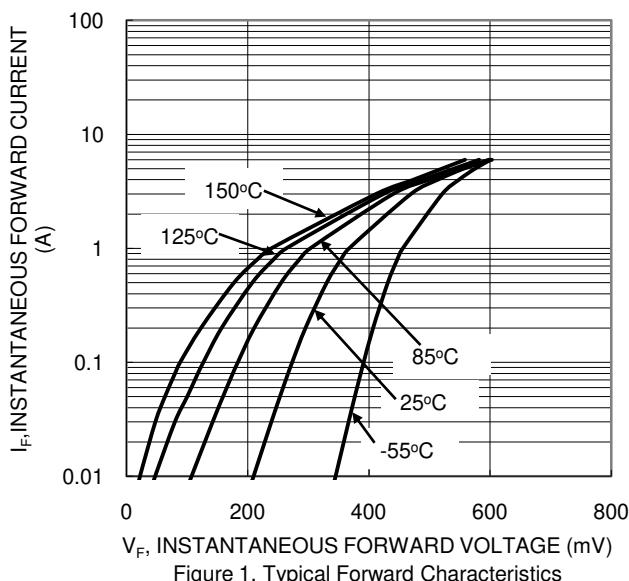
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	35	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	6.0	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	$V_F$	—	0.47	0.50	V	$I_F = 3\text{A}, T_J = +25^\circ\text{C}$ $I_F = 3\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	0.03	0.20	mA	$V_R = 40\text{V}, T_J = +25^\circ\text{C}$
		—	15	—		$V_R = 40\text{V}, T_J = +125^\circ\text{C}$
		—	0.04	0.30		$V_R = 45\text{V}, T_J = +25^\circ\text{C}$
		—	18.0	—		$V_R = 45\text{V}, T_J = +125^\circ\text{C}$
Typical Capacitance	$C_T$	—	120	—	pF	$V_R = 4.0\text{V}, f = 1\text{MHz}$

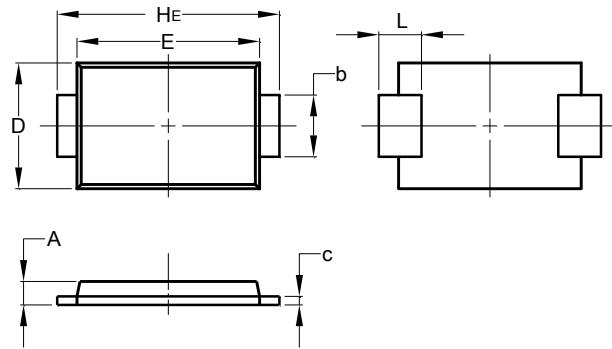
Notes: 5. Device mounted on 2inch\*2inch Al board.  
 6. Short duration pulse test used to minimize self-heating effect.



## Package Outline Dimensions

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

**SMAF**



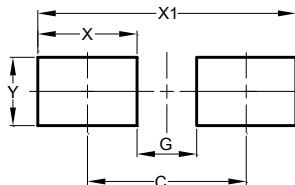
SMAF		
Dim	Min	Max
A	0.90	1.10
b	1.25	1.65
c	0.10	0.40
D	2.25	2.95
E	3.95	4.60
$H_E$	4.80	5.60
L	0.50	1.50

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
$X_1$	6.50
Y	1.70

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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