



SURFACE MOUNT LOW LEAKAGE DIODE

Product Summary (@TA = +25°C)

V _R	I _R	t _{rr}
85V	5nA	3µs

Description

The BAV116HWFQ is an 85V, 5nA and 3µs switching diode that is optimized for ultra-low leakage current.

Applications

It is ideally suited for use in applications such as the following:

- Mobile
- Portable Electronics
- Consumer Electronics
- Automotive

Features

- Ultra Low Leakage Current (5nA @ V_R = 75V)
- Flat Leadframe Design for Improved Thermal Transfer
- Low Capacitance
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Mechanical Data

- Case: SOD123F
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Matte Tin Finish Annealed over Copper Alloy Leadframe. Solderable per MIL-STD-202, Method 208 @3
- Weight: 0.018 grams (Approximate)

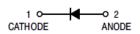
SOD123F







Bottom View



Ordering Information (Note 5)

Product	Compliance	Case	Packaging
BAV116HWFQ-7	Automotive	SOD123F	3,000/Tape & Reel

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information

SOD123F



TW = Product Type Marking Code YM = Date Code Marking

Y = Year (ex.: C = 2015) M = Month (ex: O = October)

Bar Denotes Cathode Side

Date Code Key

Year	201	5	2016		2017	20	18	2019		2020	2	2021
Code	С		D		E		F	G		Н		1
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



Maximum Ratings (@ $T_A = +25^{\circ}C$, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	85	V	
RMS Reverse Voltage		V _{R(RMS)}	60	V
Forward Continuous Current (Note 6)		I _{FM}	215	mA
Repetitive Peak Forward Current		I _{FRM}	500	mA
@ t = 1.0μs Non-Repetitive Peak Forward Surge Current @ t = 1.0ms @ t = 1.0s		I _{FSM}	4.0 1.0 0.5	А

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_{D}	375	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R _{θJA}	330	°C/W
Thermal Resistance Junction to Solder Point	R _{0JSP}	70	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

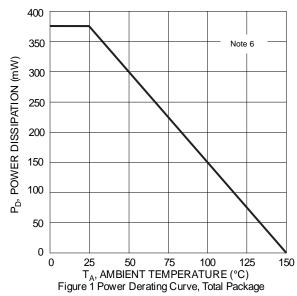
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

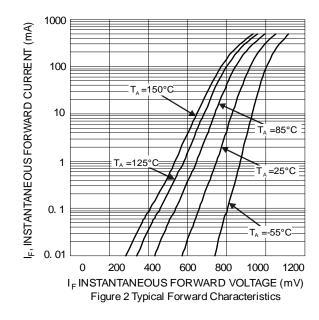
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	85	_	_	٧	$I_R = 100\mu A$
Forward Voltage	VF	_	_	0.9 1.0 1.1 1.25	V	I _F = 1.0mA I _F = 10mA I _F = 50mA I _F = 150mA
Leakage Current (Note 7)	I _R	_	_	5.0 80		V _R = 75V V _R = 75V, T _J = +150°C
Total Capacitance	C _T	_	2	_	pF	$V_R = 0, f = 1.0MHz$
Reverse Recovery Time	t _{rr}			3.0	μs	$\begin{split} I_F &= I_R = 10 \text{mA}, \\ I_{rr} &= 0.1 \text{ x } I_R, \text{ R}_L = 100 \Omega \end{split}$

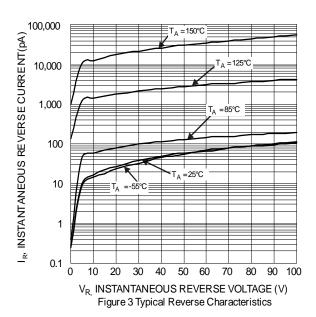
Notes:

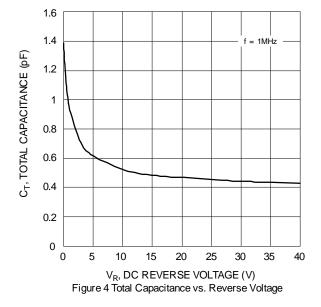
^{6.} Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. 7. Short duration pulse test used to minimize self-heating effect.









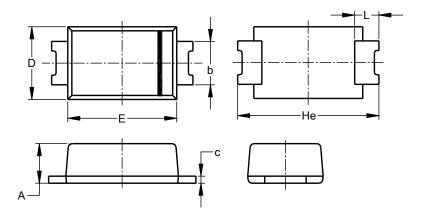




Package Outline Dimensions

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

SOD123F (Type B)

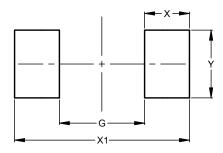


SOD123F (Type B)							
Dim	Min	Max	Тур				
Α	0.81	1.15	_				
b	0.80	1.35	_				
С	0.05	0.30	_				
D	1.70	1.90	1.80				
Е	2.60	2.80	2.70				
He	3.30	3.70	3.50				
L	0.35	0.85	_				
All Dimensions in mm							

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

SOD123F (Type B)



Dimensions	value (in mm)
G	1.90
Х	1.00
X1	3.90
Υ	1.50



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