



BAV170

DUAL SURFACE MOUNT LOW LEAKAGE DIODE

## Features

Surface Mount Package Ideally Suited for Automatic Insertion

Very Low Leakage Current

Lead Free/RoHS Compliant (Note 3)

Qualified to AEC-Q101 Standards for High Reliability

## Mechanical Data

Case: SOT-23

Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0

Moisture Sensitivity: Level 1 per J-STD-020C

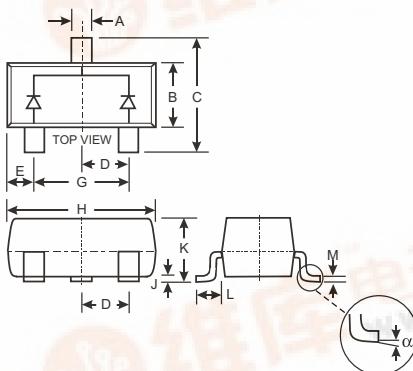
Terminals: Solderable per MIL-STD-202, Method 208

Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).

Polarity: See Diagram

Marking: K51 & date code (see page 3)

Weight: 0.008 grams (approximate)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
	0	8

All Dimensions in mm

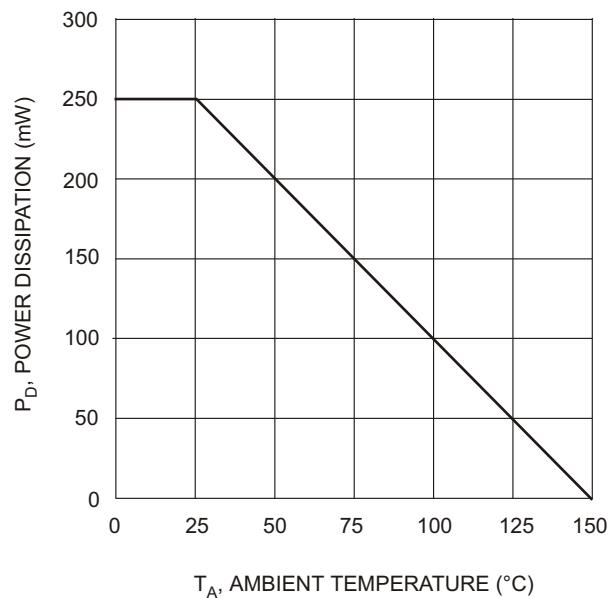
## Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	85	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(RMS)}$	60	V
Forward Continuous Current (Note 1)	Single Diode Double Diode	215 125	mA
Repetitive Peak Forward Current	$I_{FRM}$	500	mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\text{ s}$ @ $t = 1.0\text{ms}$ @ $t = 1.0\text{s}$	$I_{FSM}$	4.0 1.0 0.5	A
Power Dissipation (Note 1)	$P_d$	250	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{JA}$	500	C/W
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150	C

## Electrical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

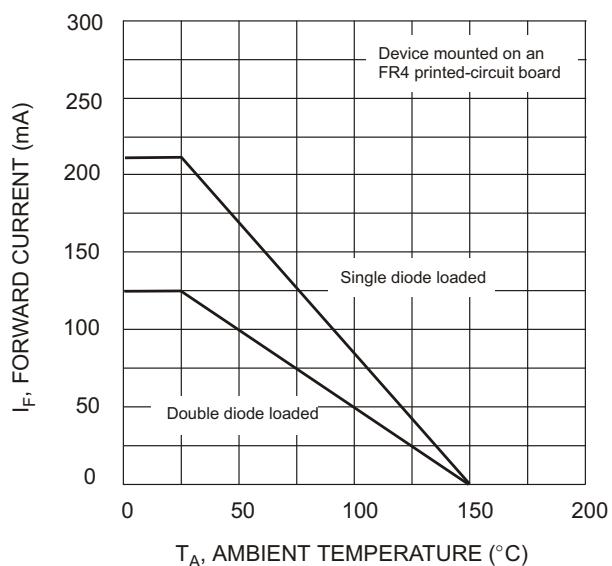
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	85			V	$I_R = 100\text{ A}$
Forward Voltage	$V_F$			0.90 1.0 1.1 1.25	V	$I_F = 1.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 150\text{mA}$
Leakage Current (Note 2)	$I_R$			5.0 80	nA nA	$V_R = 75\text{V}$ $V_R = 75\text{V}, T_j = 150\text{ C}$
Total Capacitance	$C_T$		2		pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$			3.0	s	$I_F = I_R = 10\text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100$

Notes: 1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
2. Short duration test pulse used to minimize self-heating effect.  
3. No purposefully added lead.



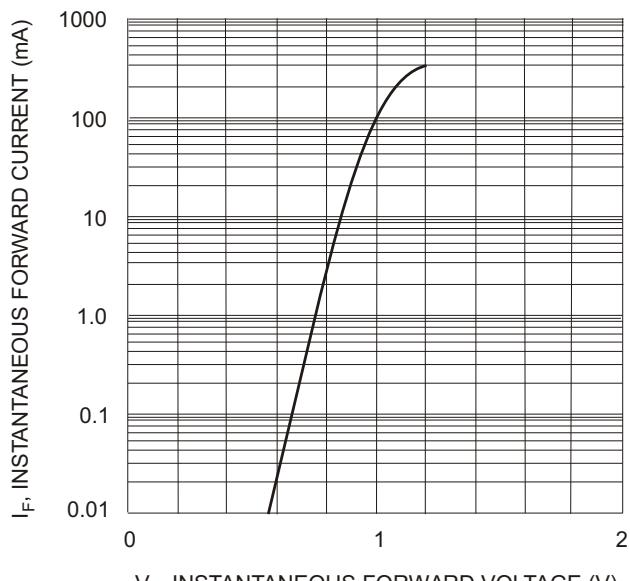
T<sub>A</sub>, AMBIENT TEMPERATURE (°C)

Fig. 1 Power Derating Curve



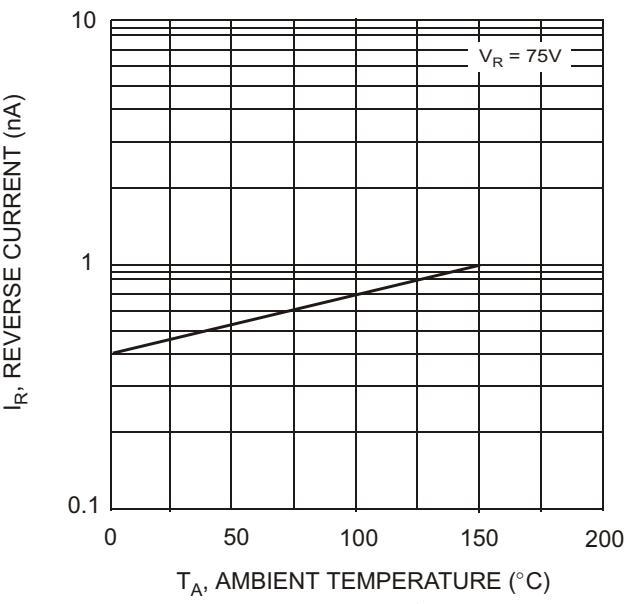
T<sub>A</sub>, AMBIENT TEMPERATURE (°C)

Fig. 2 Current Derating Curve



V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (V)

Fig. 3 Typical Forward Characteristics



T<sub>A</sub>, AMBIENT TEMPERATURE (°C)

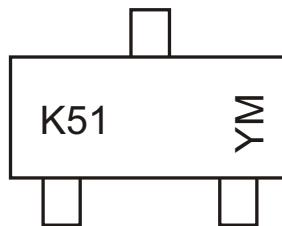
Fig. 4 Typical Reverse Characteristics

## Ordering Information (Note 4)

Device	Packaging	Shipping
BAV170-7-F	SOT-23	3000/Tape & Reel

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



K51 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: N = 2002  
 M = Month ex: 9 = September

### Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	M	N	P	R	S	T	U	V	W	X	Y	Z
Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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