



BAL99

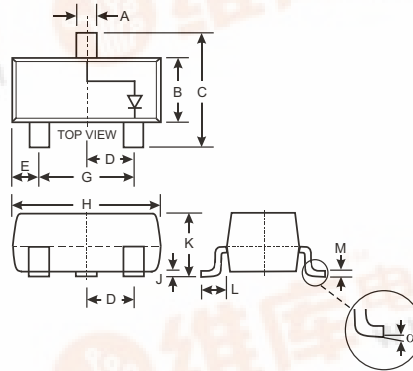
SURFACE MOUNT SWITCHING DIODE

## Features

Fast Switching Speed  
 Surface Mount Package Ideally Suited for Automatic Insertion  
 For General Purpose Switching Applications  
 High Conductance  
**Lead Free/RoHS Compliant (Note 3)**

## 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: KJF, JF, See Page 2  
 Weight: 0.008 grams (approx.)  
 Ordering Information: See Page 2



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<sub>A</sub> = 25 °C unless otherwise specified

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	75	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	53	V
Forward Continuous Current (Note 1)	I <sub>FM</sub>	300	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0 s @ t = 1.0s	I <sub>FSM</sub>	2.0 1.0	A
Power Dissipation (Note 1)	P <sub>d</sub>	350	mW
Thermal Resistance Junction to Ambient Air (Note 1)	R <sub>JA</sub>	357	C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	C

## Electrical Characteristics @ T<sub>A</sub> = 25 °C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Forward Voltage (Note 2)	V <sub>F</sub>		0.715 0.855 1.0 1.25	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 50mA I <sub>F</sub> = 150mA
Reverse Current (Note 2)	I <sub>R</sub>		2.5 50 30 25	A A A nA	V <sub>R</sub> = 75V V <sub>R</sub> = 75V, T <sub>j</sub> = 150 °C V <sub>R</sub> = 25V, T <sub>j</sub> = 150 °C V <sub>R</sub> = 20V
Total Capacitance	C <sub>T</sub>		2.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>		4.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 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 pulse test used to minimize self-heating effect.  
 3. No purposefully added lead.

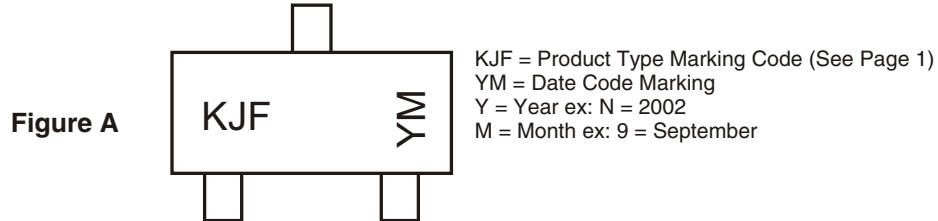


## Ordering Information (Note 4)

Device	Packaging	Shipping
BAL99-7-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 (This part may be marked as Figure A or B Below)

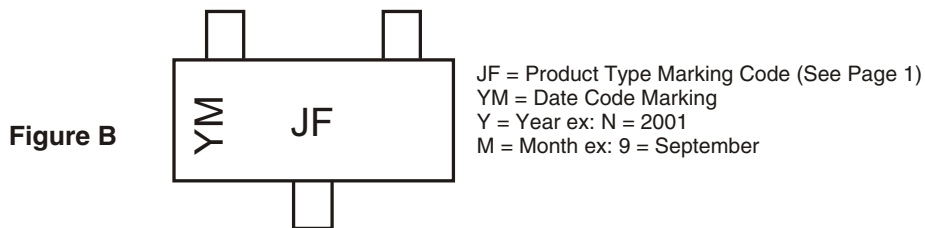


### Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	J	K	L	M	N	P	R	S	T	U	V	W

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



### Date Code Key

Year	2000	2001	2002	2003	2004	2005	2006	2007
Code	M	N	P	R	S	T	U	V

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

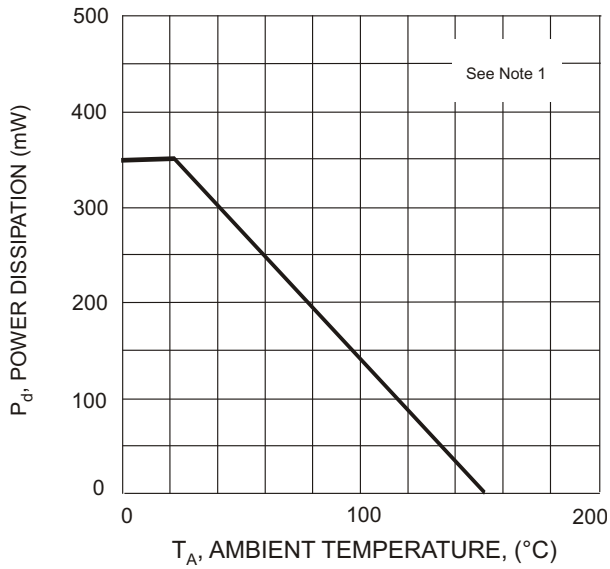


Fig. 1 Power Derating Curve

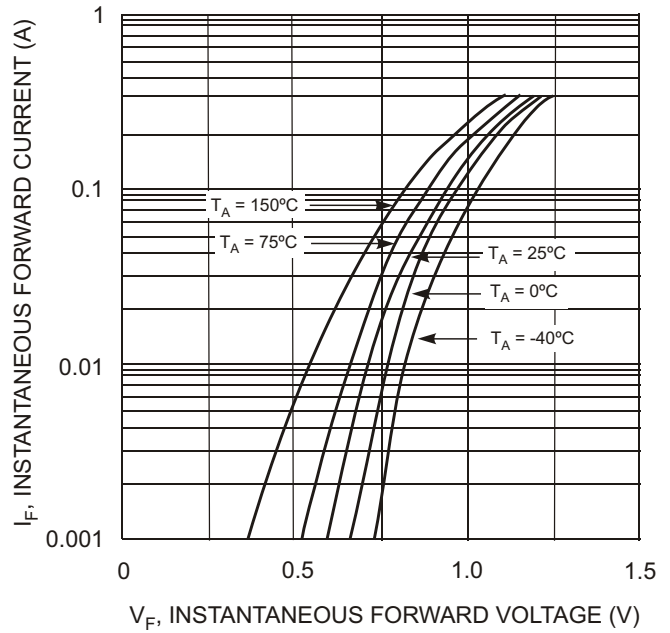


Fig. 2 Forward Characteristics

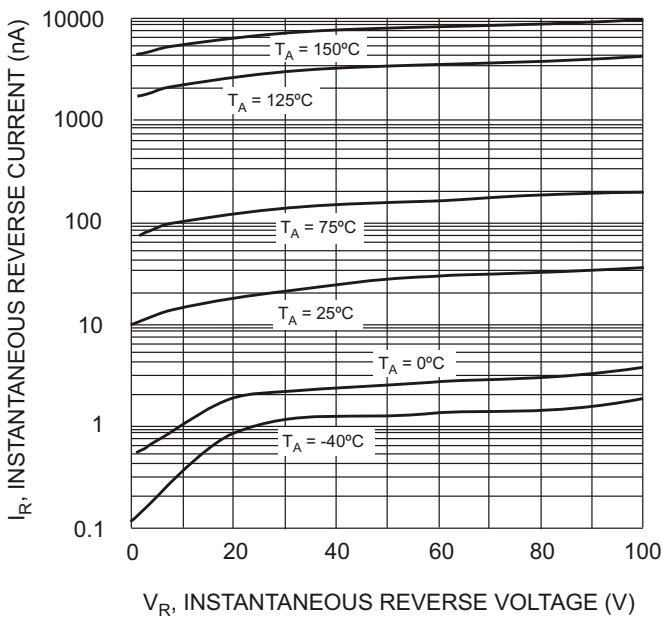


Fig. 3 Typical Reverse Characteristics

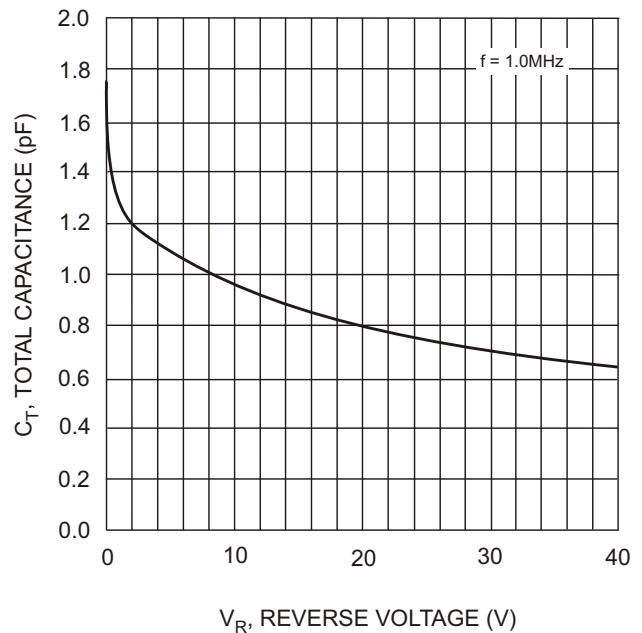


Fig. 4 Typical Capacitance vs. Reverse Voltage

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