



# BAT1000

## 1A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

### Features

Very Low Forward Voltage Drop

High Conductance

For Use in DC-DC Converter, PCMCIA,  
and Mobile Telecommunications Applications

Lead Free by Design/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

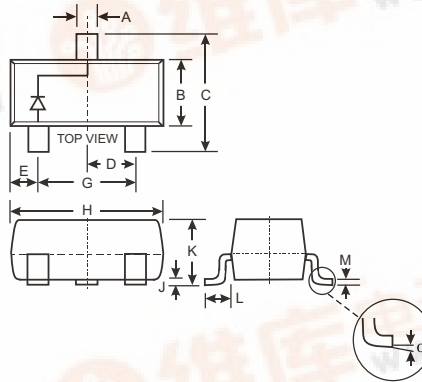
Lead Free Plating (Matte Tin Finish annealed over Alloy 42  
leadframe).

Polarity: See Diagram

Marking: K79 and Date Code, See Page 3

Ordering Information: 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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Current	$I_O$	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load	$I_{FSM}$	5.5	A
Power Dissipation (Note 1)	$P_d$	500	mW
Typical Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{JA}$	200	$^{\circ}\text{C/W}$
Operating Temperature Range	$T_j$	-40 to +125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-40 to +150	$^{\circ}\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	40			V	$I_R = 300\mu\text{A}$
Forward Voltage	$V_F$		225 235 290 340 390 420 475	270 290 340 400 450 500 600	mV	$I_F = 50\text{mA}$ $I_F = 100\text{mA}$ $I_F = 250\text{mA}$ $I_F = 500\text{mA}$ $I_F = 750\text{mA}$ $I_F = 1000\text{mA}$ $I_F = 1500\text{mA}$
Reverse Current (Note 2)	$I_R$			100	A	$V_R = 30\text{V}$
Total Capacitance	$C_T$		175 25		pF pF	$V_R = 0\text{V}, f = 1.0\text{MHz}$ $V_R = 25\text{V}, f = 1.0\text{MHz}$

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.



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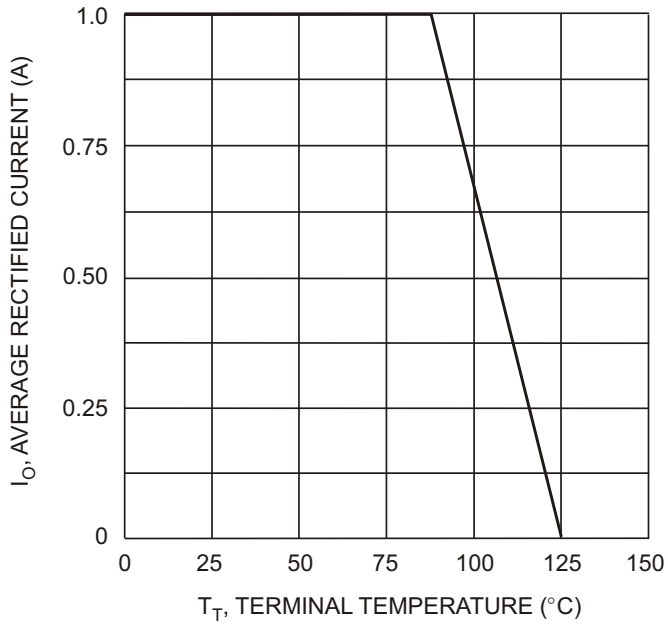


Fig. 1 Forward Current Derating Curve

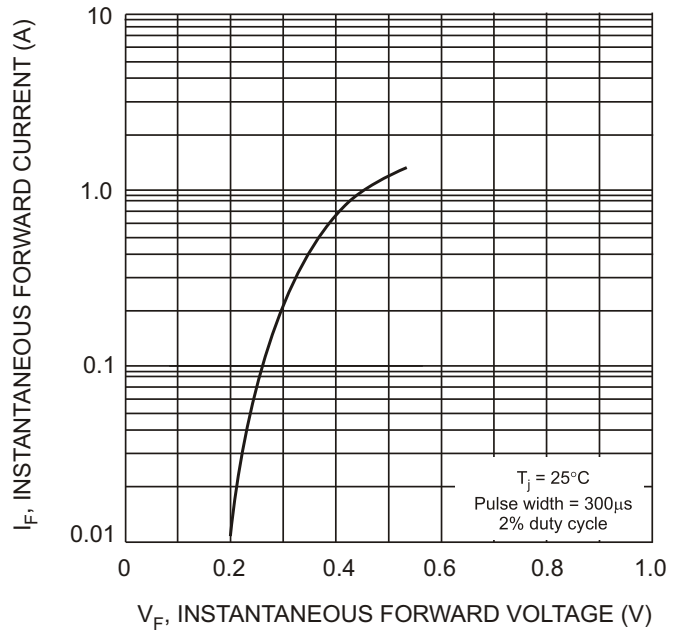


Fig. 2 Typical Forward Characteristics

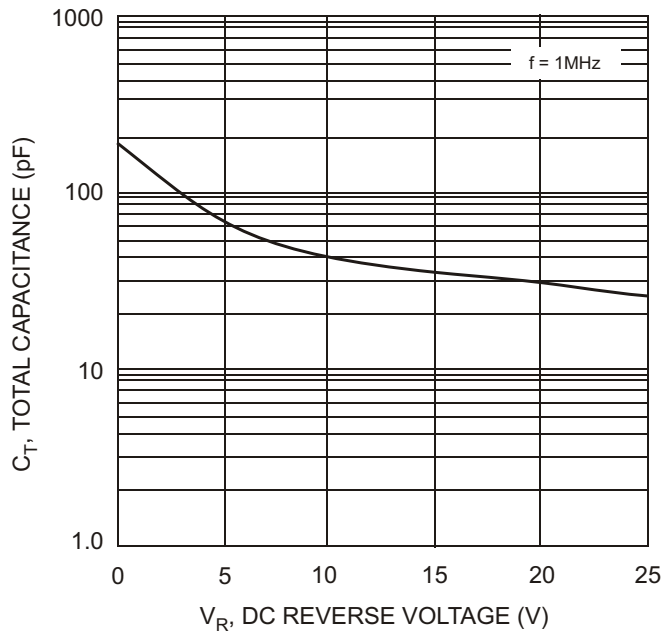


Fig. 3 Typ. Total Capacitance vs Reverse Voltage

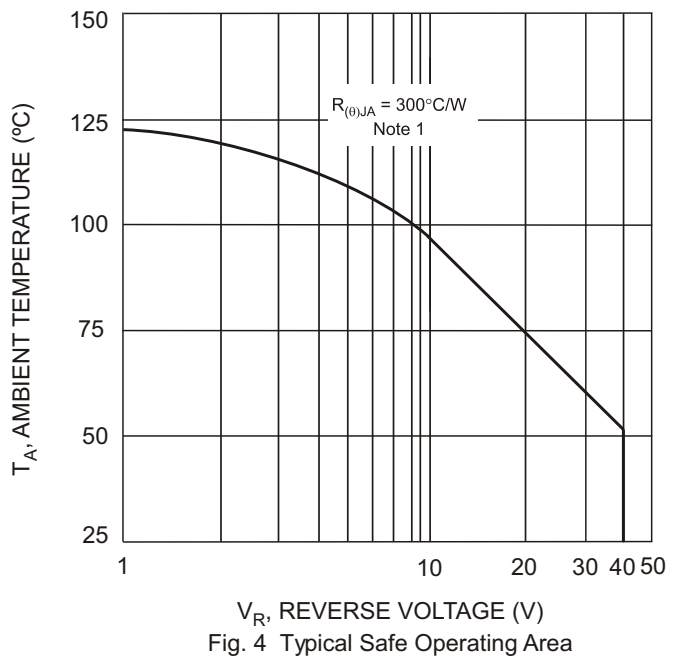


Fig. 4 Typical Safe Operating Area

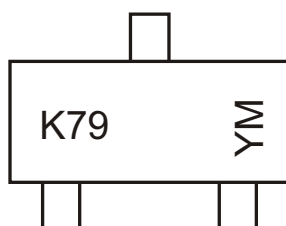
Note: 1. Assumed application thermal conditions.  
 $R_{JA}$  varies depending on application.

## Ordering Information (Note 4)

Device	Packaging	Shipping
BAT1000-7-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



K79 = Product Type Marking Code  
YM = Date Code Marking  
Y = Year ex: N = 2002  
M = Month ex: 9 = September

### Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	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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