

## Features

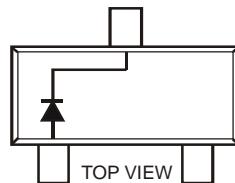
- Very Low Forward Voltage Drop
- High Conductance
- For Use in DC-DC Converter, PCMCIA, and Mobile Telecommunications Applications
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 and 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

## Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Polarity: See Diagram
- Weight: 0.008 grams (approximate)



Top View



Schematic and Pin Configuration

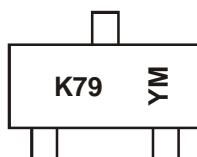
## Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
BAT1000-7-F	AEC-Q101	SOT23	3000/Tape & Reel
BAT1000Q-7-F	Automotive	SOT23	3000/Tape & Reel

## Notes:

- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 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.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 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/](http://www.diodes.com/quality/product_compliance_definitions/).
- For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



K79 = Product Type Marking Code

YM = Date Code Marking

Y = Year (ex: A = 2013)

M = Month (ex: 9 = September)

## Date Code Key

Year	2002	2003	2004	....	2010	2011	2012	2013	2014	2015	2016	
Code	N	P	R	....	X	Y	Z	A	B	C	D	
Month	Jan	Feb	Mar	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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**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

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Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	40	V
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Current	$I_0$	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load	$I_{FSM}$	5.5	A

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**Thermal Characteristics**


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Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	$P_D$	500	mW
Typical Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	200	°C/W
Operating Temperature Range	$T_J$	-40 to +125	°C
Storage Temperature Range	$T_{STG}$	-40 to +150	°C

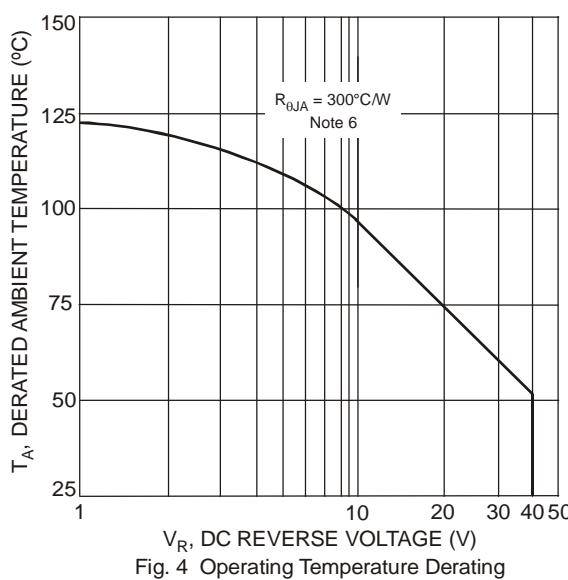
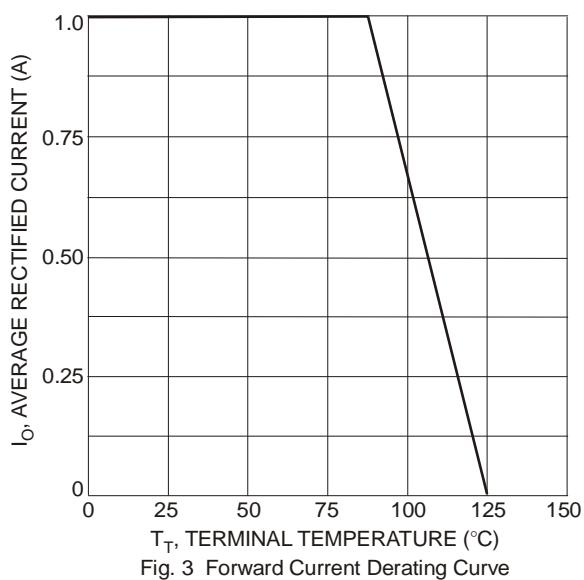
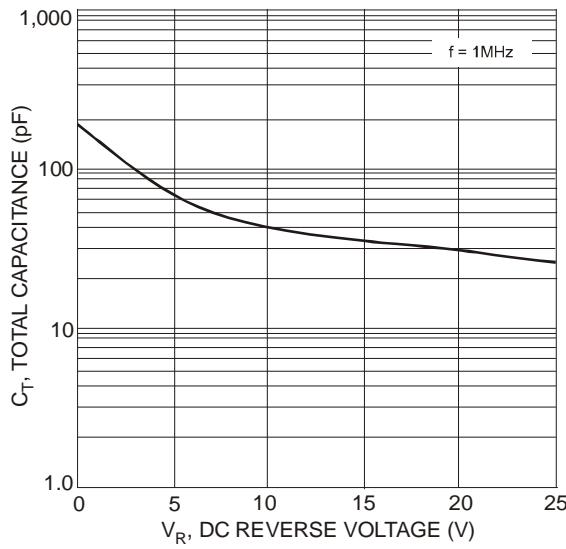
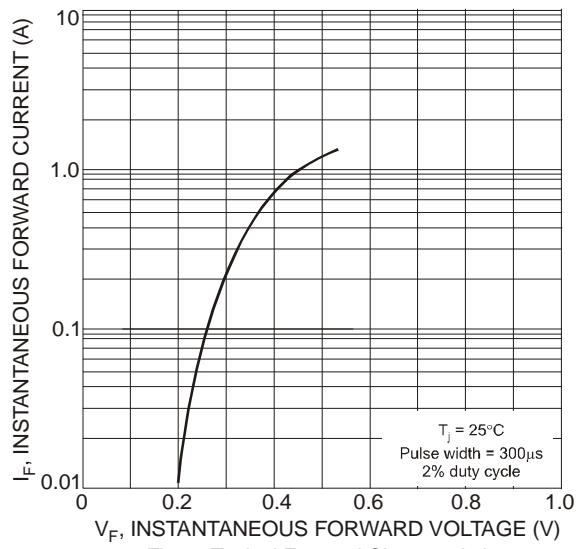
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**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

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Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	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 7)	$I_R$	—	—	100	$\mu\text{A}$	$V_R = 30\text{V}$
Total Capacitance	$C_T$	—	175 25	—	pF	$V_R = 0\text{V}, f = 1.0\text{MHz}$ $V_R = 25\text{V}, f = 1.0\text{MHz}$

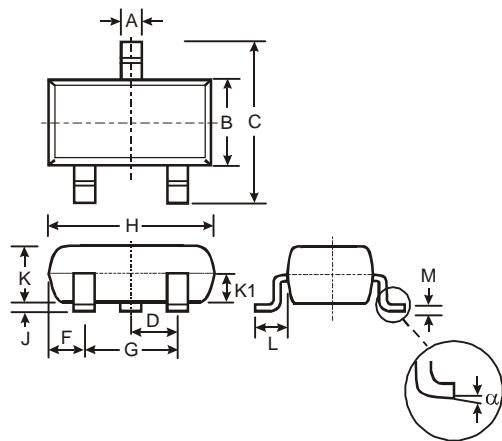
Notes: 6. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
 7. Short duration pulse test used to minimize self-heating effect.



Note: 8. Assumed application thermal conditions.  $R_{\theta JA}$  varies depending on application.

## Package Outline Dimensions

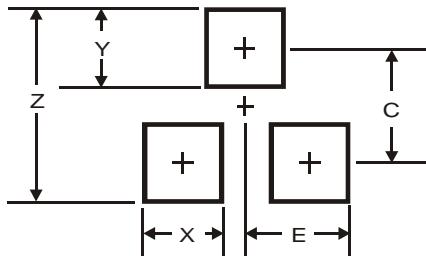
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
$\alpha$	0°	8°	-
All Dimensions in mm			

## Suggested Pad Layout

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



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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