

0.75A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Features

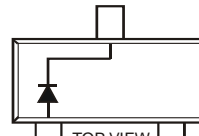
- Very Low Forward Voltage Drop
- High Conductance
- For Use in DC-DC Converter, PCMCIA, and Mobile Telecommunications Applications
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)



Top View



Device Schematic

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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}	40	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Current	I_O	0.75	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load	I_{FSM}	5.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P_D	350	mW
Typical Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	286	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +125	$^\circ\text{C}$

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	45	—	V	$I_R = 300\mu\text{A}$
Forward Voltage	V_F	—	225	280	mV	$I_F = 50\text{mA}$
			235	310		$I_F = 100\text{mA}$
			290	350		$I_F = 250\text{mA}$
			340	420		$I_F = 500\text{mA}$
			390	490		$I_F = 750\text{mA}$
			420	540		$I_F = 1000\text{mA}$
475	650	$I_F = 1500\text{mA}$				
Reverse Current (Note 2)	I_R	—	50	100	μA	$V_R = 30\text{V}$
Total Capacitance	C_T	—	175	—	pF	$V_R = 0\text{V}, f = 1.0\text{MHz}$
			25	—	pF	$V_R = 25\text{V}, f = 1.0\text{MHz}$
Reverse Recovery Time	t_{rr}	—	—	10	ns	$I_F = I_R = 100\text{mA}, I_{rr} = 10\text{mA}$. See figure 6.

- Notes:
1. 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>.
 2. Short duration pulse test used to minimize self-heating effect.
 3. No purposefully added lead. Halogen and Antimony Free.
 4. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 Fire Retardants.

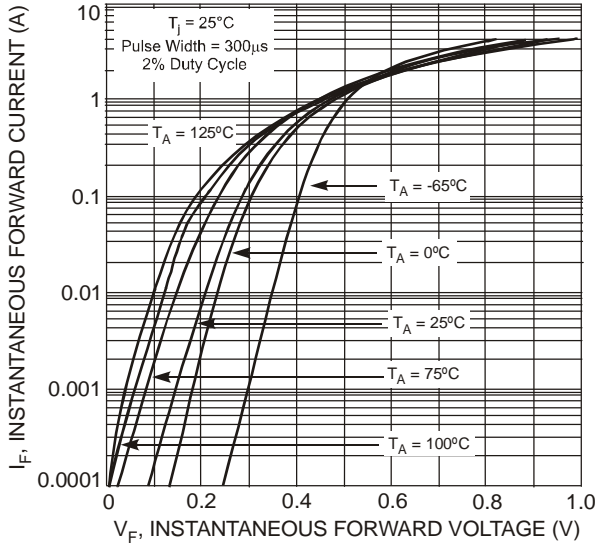


Fig. 1 Typical Forward Characteristics

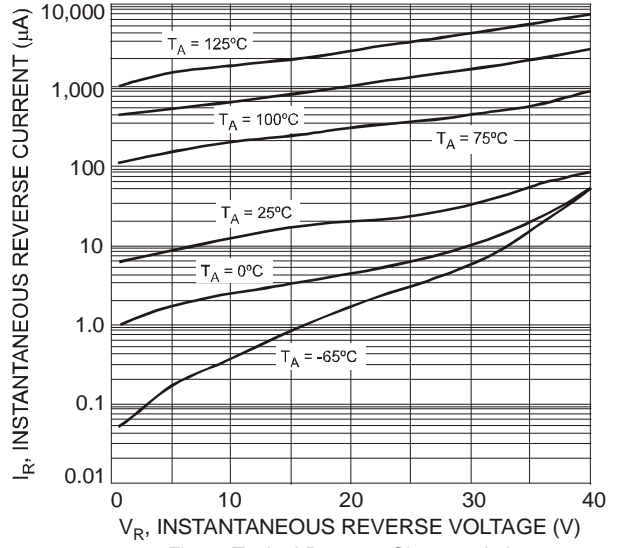


Fig. 2 Typical Reverse Characteristics

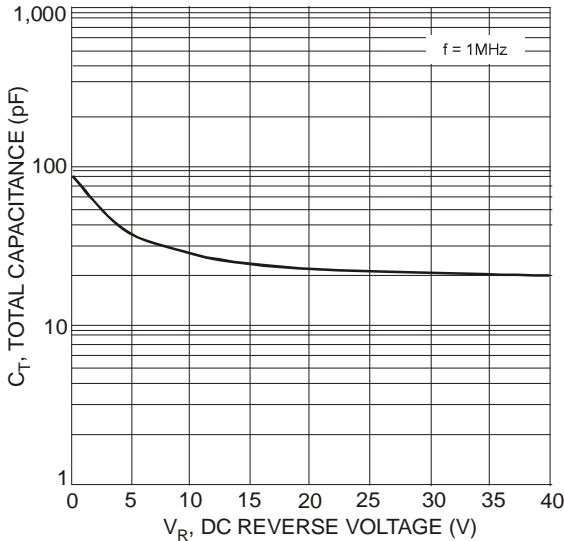


Fig. 3 Total Capacitance vs. Reverse Voltage

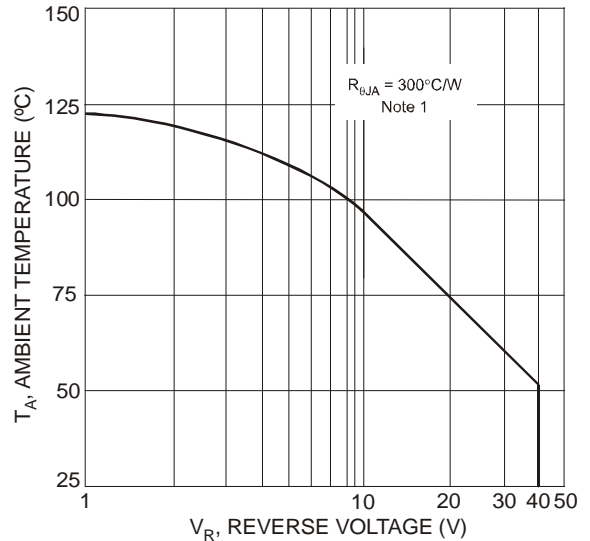


Fig. 4 Typical Safe Operating Area

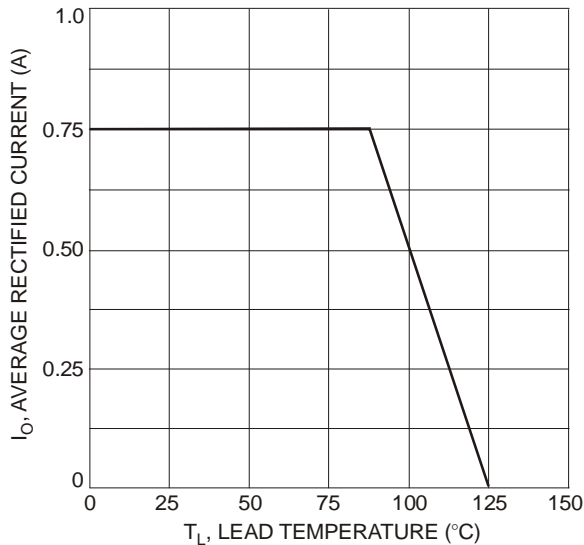
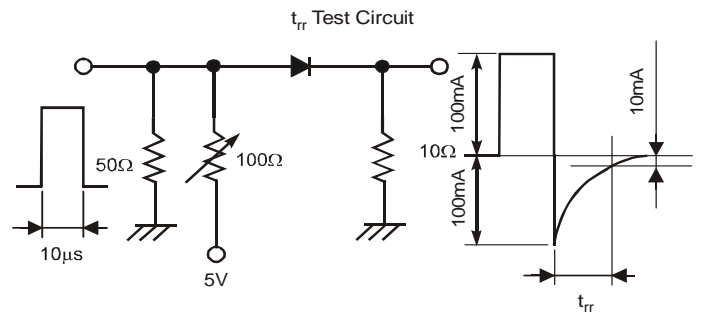


Fig. 5 Forward Current Derating Curve

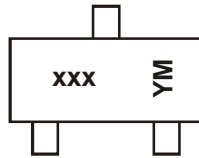


Ordering Information (Note 5)

Part Number	Case	Packaging
BAT750-7-F	SOT-23	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



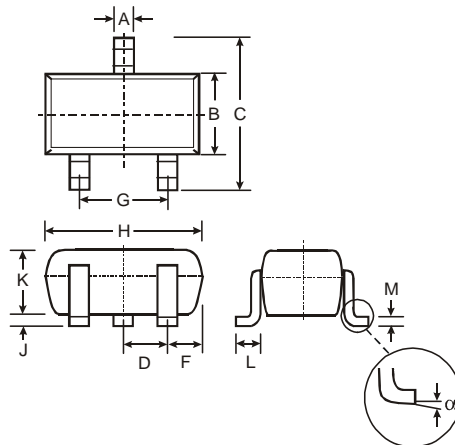
xxx = Product Type Marking Code (K77 or K79)
 YM = Date Code Marking
 Y = Year ex: N = 2002
 M = Month ex: 9 = September

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

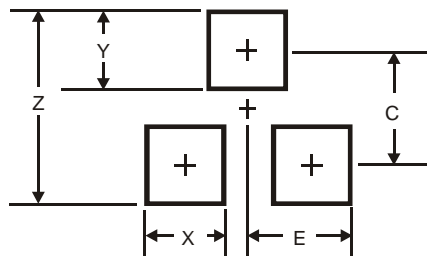
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



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
F	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
α	0°	8°
All Dimensions in mm		

Suggested Pad Layout



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

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.