THE DATASHEET OF

BAT750TA

0.75A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Features

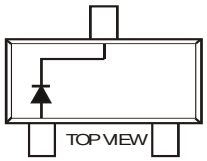
- Very Low Forward Voltage Drop
- High Conductance
- For Use in DC-DC Converters, PCMCIA, and Mobile Telecommunications Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Mechanical Data

- Package: SOT23
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.008 grams (Approximate)

SOT23 (Standard)

Top View



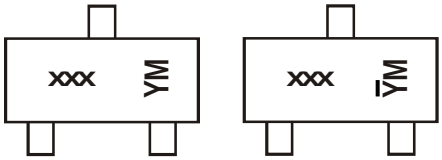
Device Schematic

Ordering Information (Note 4)

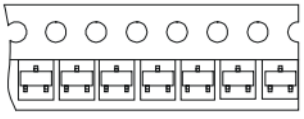
Part Number	Package	Packing	
		Qty.	Carrier
BAT750-7-F	SOT23 (Standard)	3000	Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



xxx = Product Type Marking Code (K77 or K79)
YM & $\overline{\text{YM}}$ = Date Code Marking
Y & $\overline{\text{Y}}$ = Year (ex: J = 2022)
M = Month (ex: 9 = September)



Date Code Key

Year	2003	….	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	P	….	J	K	L	M	N	O	P	R	S	T

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°C, unless otherwise specified.)

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

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	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 5)	P_D	350	mW
Typical Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	286	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +125	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ.	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	40	45	—	V	I_R = 300µA
Forward Voltage	V_F	—	225 235 290 340 390 420 475	280 310 350 420 490 540 650	mV	I_F = 50mA I_F = 100mA I_F = 250mA I_F = 500mA I_F = 750mA I_F = 1000mA I_F = 1500mA
Reverse Current (Note 6)	I_R	—	50	100	µA	V_R = 30V
Total Capacitance	C_T	— —	175 25	— —	pF pF	V_R = 0V, f = 1.0MHz V_R = 25V, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	—	10	ns	I_F = I_R = 100mA I_{rr} = 10mA. See Fig. 6

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html.
6. Short duration pulse test used to minimize self-heating effect.

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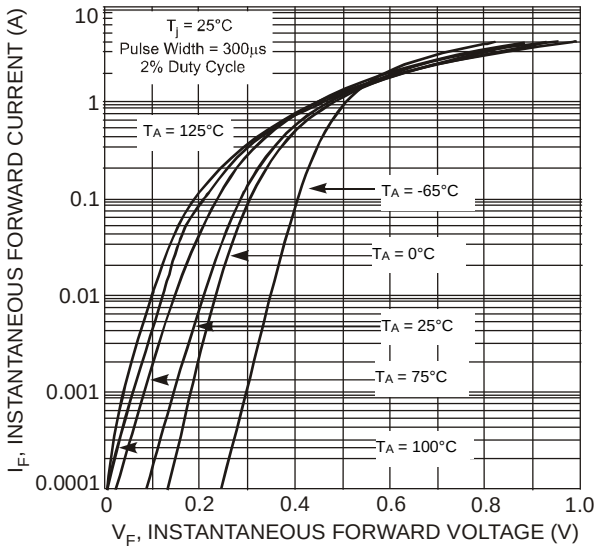

Fig. 1 Typical Forward Characteristics

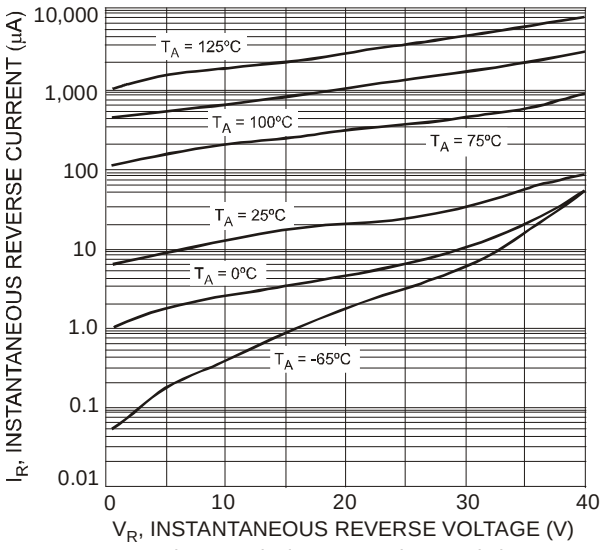

Fig. 2 Typical Reverse Characteristics

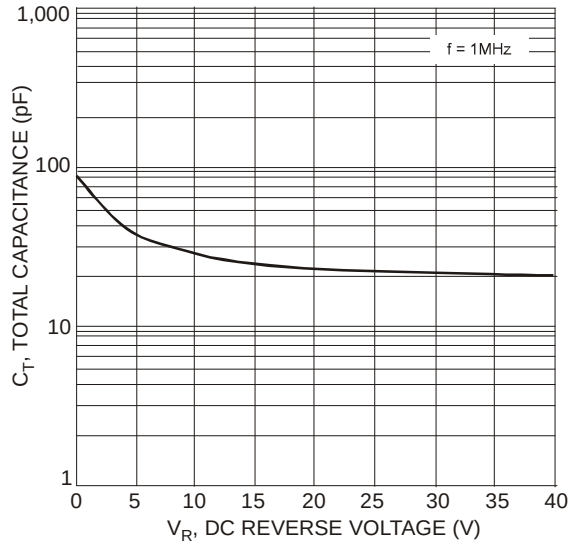

Fig. 3 Total Capacitance vs. Reverse Voltage

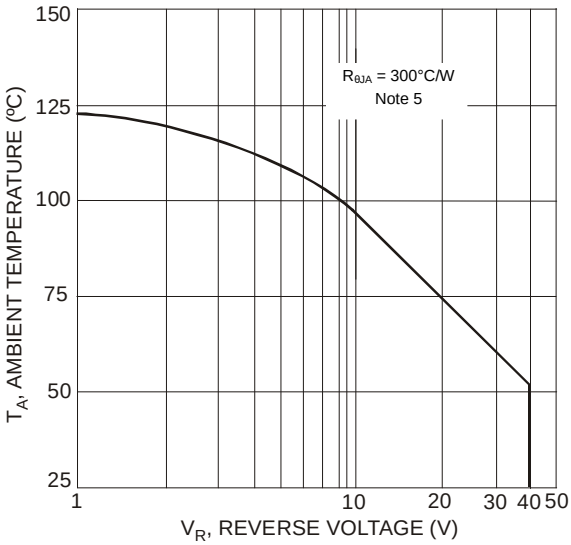

Fig. 4 Typical Safe Operating Area

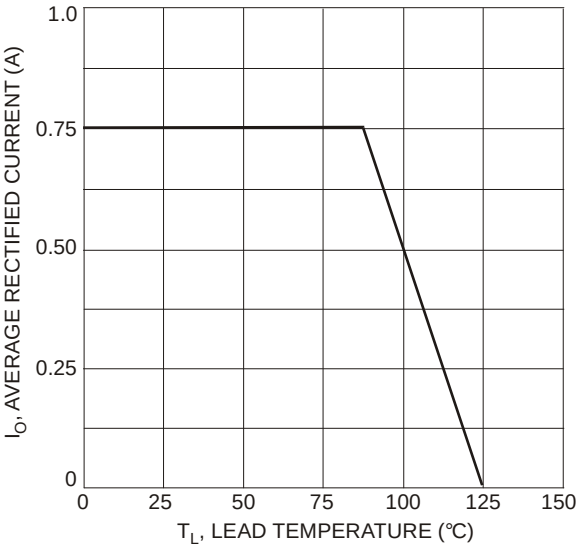

Fig. 5 Forward Current Derating Curve

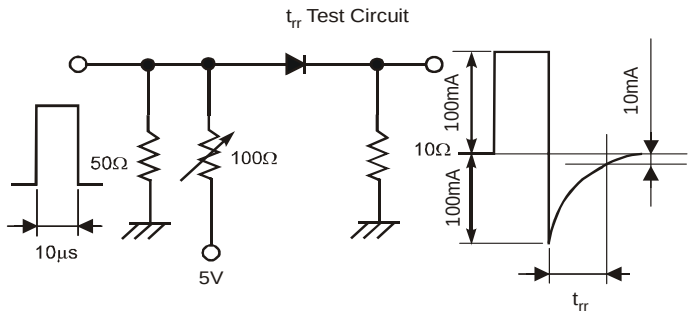

Fig. 6

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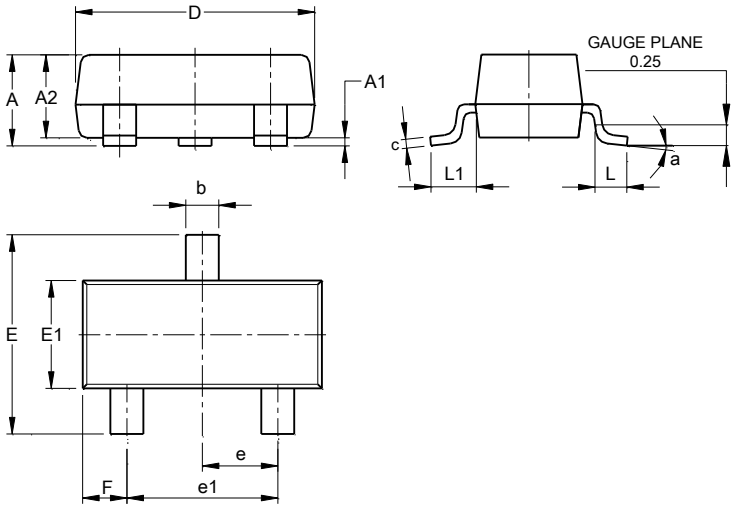
Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT23 (Standard)

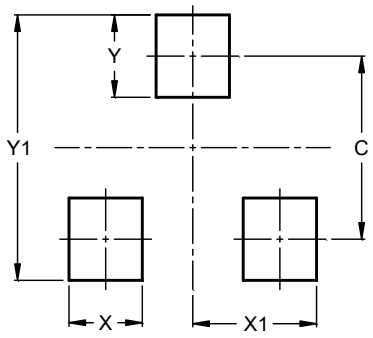


SOT23 (Standard)			
Dim	**Min**	**Max**	**Typ.**
A	0.90	1.15	1.025
A1	0.00	0.10	0.05
A2	0.85	1.10	0.975
b	0.30	0.51	0.40
c	0.080	0.202	0.11
D	2.80	3.00	2.90
E	2.25	2.55	2.40
E1	1.20	1.40	1.30
e	0.89	1.03	0.915
e1	1.78	2.05	1.83
F	0.40	0.60	0.535
L1	0.45	0.61	0.55
L	0.25	0.55	0.40
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT23 (Standard)



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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