RB751S40T1

Schottky Barrier Diode

These Schottky barrier diodes are designed for high–speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand–held and portable applications where space is limited.

Features

- Extremely Fast Switching Speed
- Extremely Low Forward Voltage – 0.28 V (Typ) @ I_F = 1.0 mAdc
- Low Reverse Current
- Lead–Free Plating
- Pb–Free Package is Available

ON Semiconductor®

http://onsemi.com

40 V SCHOTTKY BARRIER DIODE

1 CATHODE   2 ANODE

**SOD–523
CASE 502
PLASTIC**

MARKING DIAGRAM

5E M■
1   2
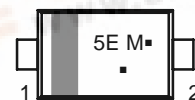
5E = Specific Device Code
M = Date Code
■ = Pb–Free Package
(Note: Microdot may be in either location)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Reverse Voltage	V_{RM}	40	V
Reverse Voltage	V_R	30	V
Forward Continuous Current (DC)	I_F	30	mA
Peak Forward Surge Current	I_{FSM}	500	mA
ESD Rating: Class 1C per Human Body Model Class A per Machine Model			

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR–5 Board, (Note 1) T_A = 25°C Derate above 25°C	P_D	200 1.57	mW mW/°C
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

1. FR–5 Minimum Pad.

ORDERING INFORMATION

Device	Package	Shipping†
RB751S40T1	SOD–523	4000/Tape & Reel
RB751S40T1G	SOD–523 (Pb–Free)	4000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μA)	$V_{(BR)R}$	30	–	–	V
Total Capacitance (V_R = 1.0 V, f = 1.0 MHz)	C_T	–	2.0	2.5	pF
Reverse Leakage (V_R = 30 V)	I_R	–	300	500	nAdc
Forward Voltage (I_F = 1.0 mAdc)	V_F	–	0.28	0.37	Vdc
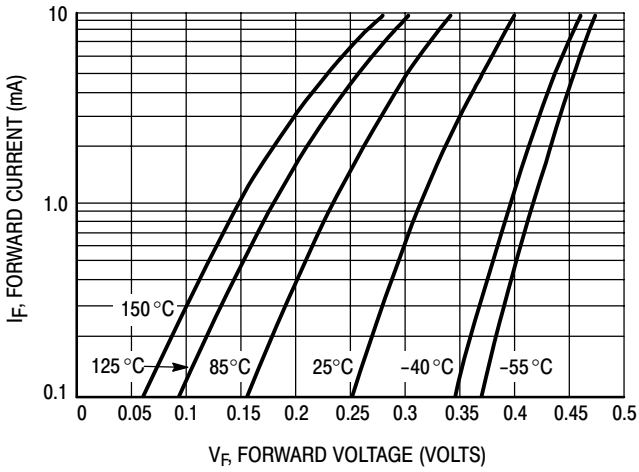
Figure 1. Typical Forward Voltage
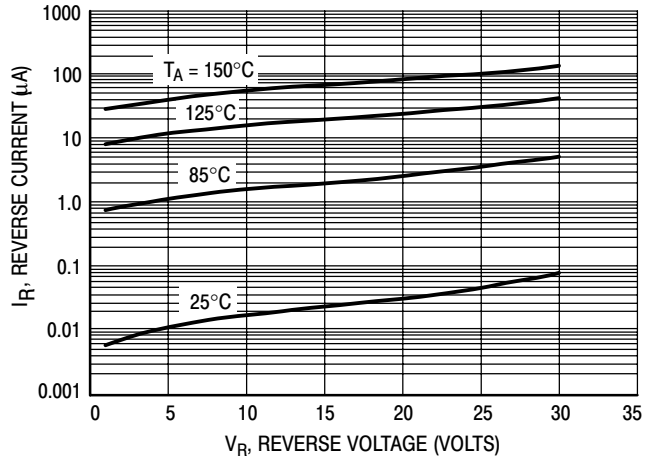
Figure 2. Reverse Current versus Reverse Voltage
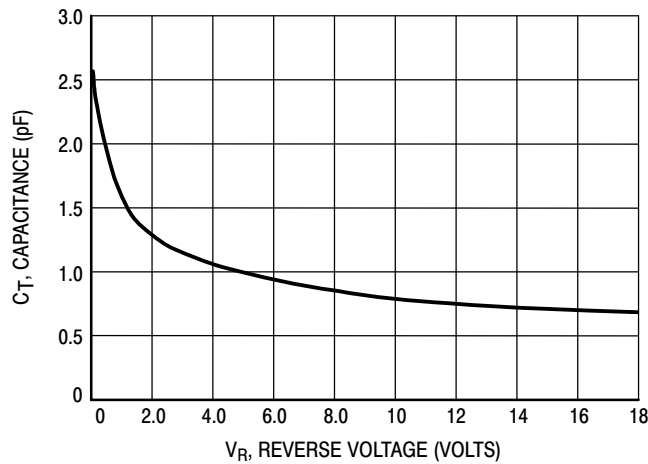
Figure 3. Typical Capacitance

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PACKAGE DIMENSIONS

SOD−523
CASE 502−01
ISSUE B

D 2 PL

| ⊕ | 0.08 (0.003) Ⓜ | T | X | Y |

SEATING PLANE
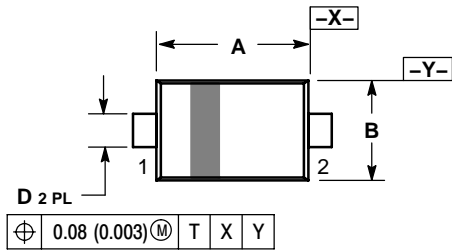
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.10	1.20	1.30	0.043	0.047	0.051
B	0.70	0.80	0.90	0.028	0.032	0.035
C	0.50	0.60	0.70	0.020	0.024	0.028
D	0.25	0.30	0.35	0.010	0.012	0.014
J	0.07	0.14	0.20	0.0028	0.0055	0.0079
K	0.15	0.20	0.25	0.006	0.008	0.010
S	1.50	1.60	1.70	0.059	0.063	0.067

SOLDERING FOOTPRINT*

$\frac{1.40}{0.0547}$

$\frac{0.40}{0.0157}$

$\frac{0.40}{0.0157}$
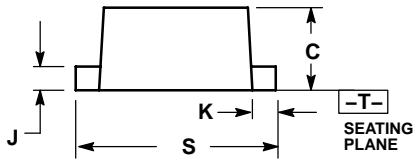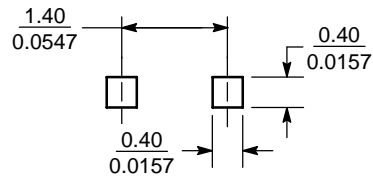
SCALE 10:1 $\left(\frac{mm}{inches}\right)$

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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