RB751S40

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
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC–Q101 Qualified and PPAP Capable
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

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			

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, 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.

ON Semiconductor®

40 V SCHOTTKY BARRIER DIODE

1 o—CATHODE   ANODE—o 2
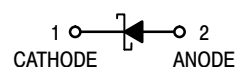
**SOD−523
CASE 502
STYLE 1**

MARKING DIAGRAM


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5E M▪
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5E = Specific Device Code
M = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping[†]
RB751S40T1G	SOD−523 (Pb−Free)	3000 / Tape & Reel
NSVRB751S40T1G	SOD−523 (Pb−Free)	3000 / Tape & Reel
RB751S40T5G	SOD−523 (Pb−Free)	8000 / Tape & Reel
NSVRB751S40T5G	SOD−523 (Pb−Free)	8000 / 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.

RB751S40

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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
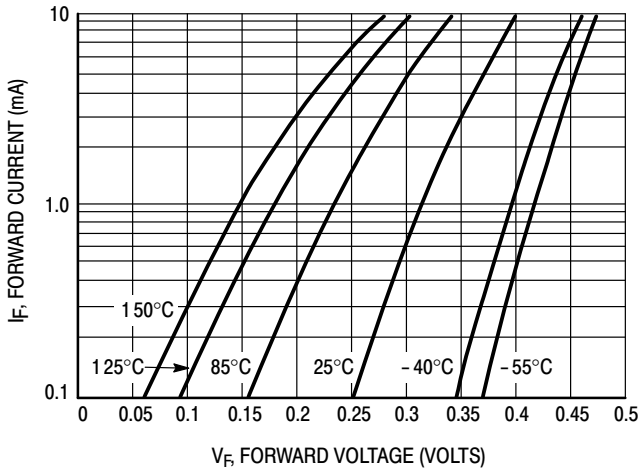
Figure 1. Typical Forward Voltage
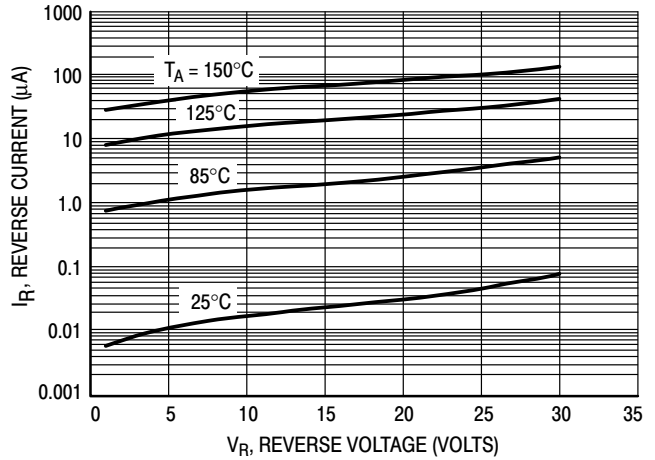
Figure 2. Reverse Current versus Reverse Voltage
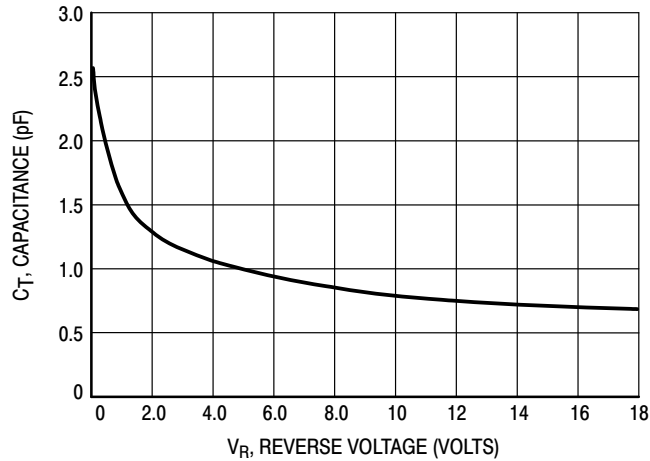
Figure 3. Typical Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

SOD−523
CASE 502−01
ISSUE E

DATE 28 SEP 2010

STYLE 1   STYLE 2

SCALE 4:1

TOP VIEW

⊕ | 0.08 Ⓜ | X | Y

SIDE VIEW
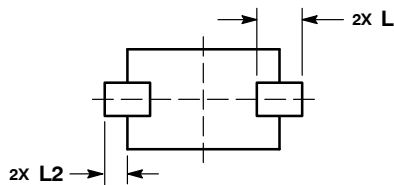
BOTTOM VIEW

**RECOMMENDED
SOLDERING FOOTPRINT***

2X 0.48

1.80

2X 0.40

PACKAGE
OUTLINE

DIMENSION: MILLIMETERS

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

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH.
   MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF
   BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PRO-
   TRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.60	0.70
b	0.25	0.30	0.35
c	0.07	0.14	0.20
D	1.10	1.20	1.30
E	0.70	0.80	0.90
HE	1.50	1.60	1.70
L	0.30 REF		
L2	0.15	0.20	0.25

GENERIC
MARKING DIAGRAM*
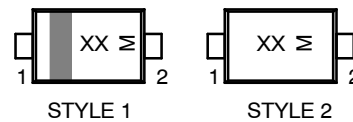
STYLE 1   STYLE 2

XX   = Specific Device Code
M   Date Code

*This information is generic. Please refer to
device data sheet for actual part marking.
Pb−Free indicator, "G" or microdot " ▪",
may or may not be present.

STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
    2. ANODE

STYLE 2:
NO POLARITY

PUBLICATION ORDERING INFORMATION

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