

Schottky Barrier Diode

40 V SCHOTTKY BARRIER DIODE

RB751V40T1G

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 Volts (Typ) @ $I_F = 1 \text{ mAdc}$
- Low Reverse Current
- 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

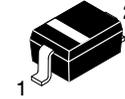
Rating	Symbol	Value	Unit
Peak Reverse Voltage	V_{RM}	40	V
Reverse Voltage	V_R	30	Vdc
Forward Continuous Current (DC)	I_F	30	mA
Peak Forward Surge Current	I_{FSM}	500	mA
Electrostatic Discharge	E_{SD}	HBM Class: 1C MM Class: A	

THERMAL CHARACTERISTICS

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

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.

1. FR-5 Minimum Pad



SOD-323
CASE 477
STYLE 1

MARKING DIAGRAM



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

ORDERING INFORMATION

Device	Package	Shipping [†]
RB751V40T1G	SOD-323 (Pb-Free)	3000 / Tape & Reel
NSVRB751V40T1G	SOD-323 (Pb-Free)	3000 / Tape & Reel

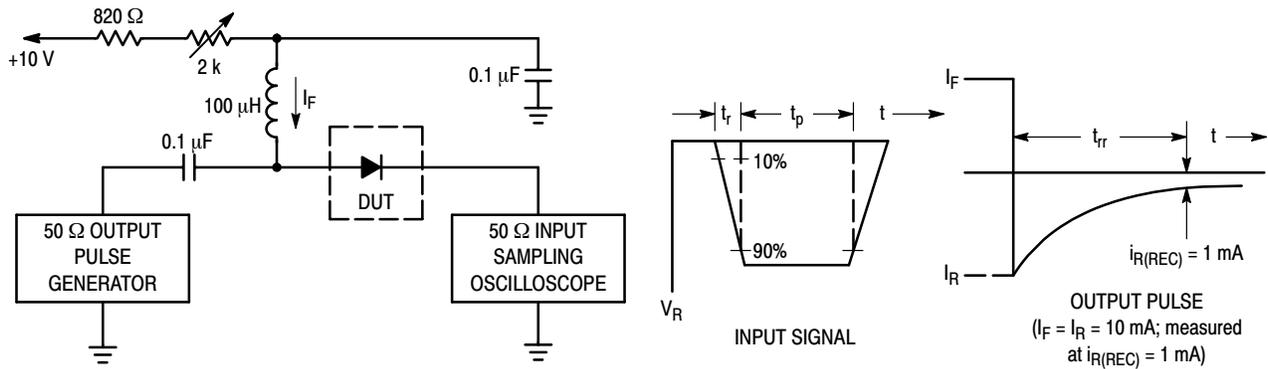
[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

RB751V40T1G

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$)	$V_{(BR)R}$	30	-	-	Volts
Total Capacitance ($V_R = 1.0 \text{ V}$, $f = 1.0 \text{ MHz}$)	C_T	-	2.0	2.5	pF
Reverse Leakage ($V_R = 30 \text{ V}$)	I_R	-	300	500	nA _{dc}
Forward Voltage ($I_F = 1.0 \text{ mA}$)	V_F	-	0.28	0.37	V _{dc}

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.



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

RB751V40T1G

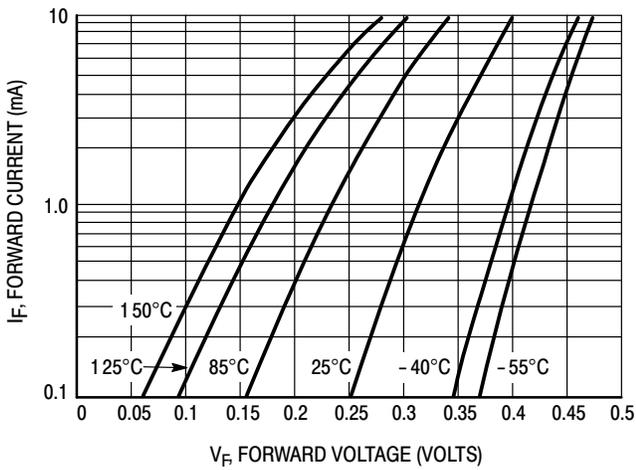


Figure 2. Typical Forward Voltage

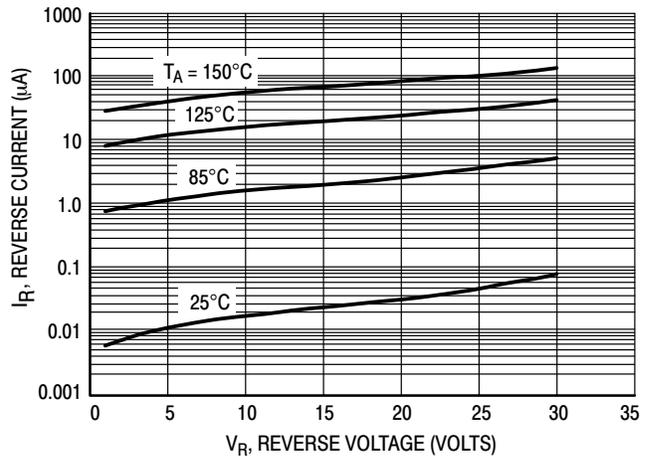


Figure 3. Reverse Current versus Reverse Voltage

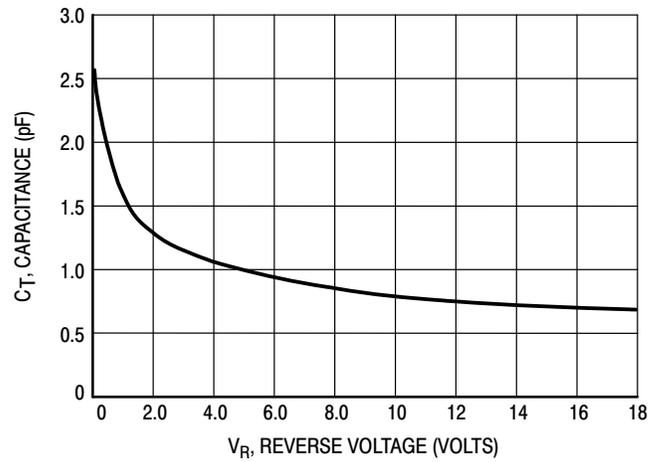
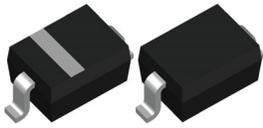
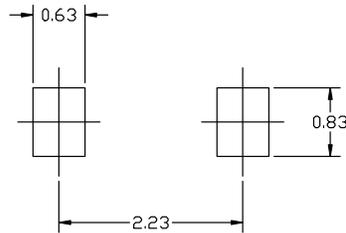
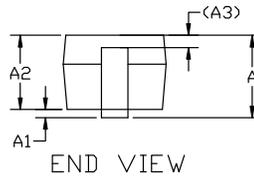
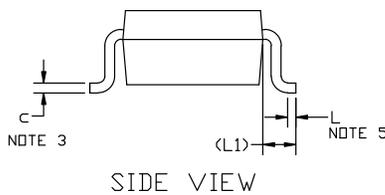
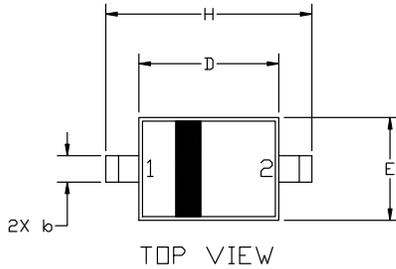


Figure 4. Typical Capacitance



SOD-323 1.70x1.25x0.85
CASE 477
ISSUE K

DATE 11 MAR 2024



RECOMMENDED MOUNTING FOOTPRINT

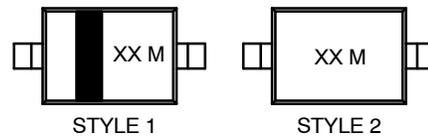
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference manual, SOLDERRM/D.

NOTES:

1. DIMENSIONING AND TOLERANCING AS PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURE FROM END OF RADIUS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.80	0.90	1.00
A1	0.00	0.05	0.10
A2	0.75	0.85	0.95
A3	0.15 (REF)		
b	0.25	0.32	0.4
c	0.09	0.12	0.18
D	1.60	1.70	1.80
E	1.15	1.25	1.35
H	2.30	2.50	2.70
L	0.08	---	---
L1	0.40 (REF)		

GENERIC MARKING DIAGRAM*



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. Some products may not follow the Generic Marking.

STYLE 1: PIN 1. CATHODE (POLARITY BAND)
2. ANODE STYLE 2: NO POLARITY

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