

# OM SENI

## Schottky Barrier Diode

Schottky barrier diodes are optimized for very low forward voltage drop and low leakage current and are used in a wide range of dc-dc converter, clamping and protection applications in portable devices. NSR0340V2 in a SOD-523 miniature package enables designers to meet the challenging task of achieving higher efficiency and meeting reduced space requirements.

### Features

- Very Low Forward Voltage Drop – 410 mV @ 100 mA
- Low Reverse Current – 0.5  $\mu$ A @ 25 V  $V_R$
- 250 mA of Continuous Forward Current
- Power Dissipation of 200 mW with Minimum Trace
- Very High Switching Speed
- Low Capacitance –  $C_T = 6$  pF
- This is a Pb-Free Device

### Typical Applications

- LCD and Keypad Backlighting
- Camera Photo Flash
- Buck and Boost dc-dc Converters
- Reverse Voltage and Current Protection
- Clamping & Protection

### Markets

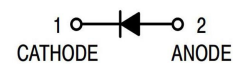
- Mobile Handsets
- MP3 Players
- Digital Camera and Camcorders
- Notebook PCs and PDAs
- GPS

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	40	Vdc
Forward Continuous Current (DC)	$I_F$	250	mA
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	1.0	A
ESD Rating: Human Body Model Machine Model	ESD	Class 2 Class A	

## NSR0340V2T1G

### 40 VOLT SCHOTTKY BARRIER DIODE



SOD-523  
CASE 502

### MARKING DIAGRAM



AD = Device Code  
M = Date Code\*  
■ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation position may vary depending upon manufacturing location.

### ORDERING INFORMATION

Device	Package	Shipping†
NSR0340V2T1G	SOD-523 (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 Specifications Brochure, BRD8011/D.

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## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction-to-Ambient (Note 1) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ $P_D$	600 200	$^\circ\text{C/W}$ mW
Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ $P_D$	300 400	$^\circ\text{C/W}$ mW
Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

1. Mounted onto a 4 in square FR-4 board 10 mm sq. 1 oz. Cu 0.06" thick single-sided. Operating to steady state.
2. Mounted onto a 4 in square FR-4 board 1 in sq. 1 oz. Cu 0.06" thick single-sided. Operating to steady state.

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage ( $V_R = 10\text{ V}$ ) ( $V_R = 25\text{ V}$ ) ( $V_R = 40\text{ V}$ )	$I_R$		0.2 0.5 1.5	1.0 3.0 6.0	$\mu\text{A}$
Forward Voltage ( $I_F = 10\text{ mA}$ ) ( $I_F = 100\text{ mA}$ ) ( $I_F = 200\text{ mA}$ )	$V_F$		310 410 470	350 450 510	mV
Total Capacitance ( $V_R = 10\text{ V}, f = 1\text{ MHz}$ )	CT		6.0		pF
Reverse Recovery Time ( $I_F = I_R = 10\text{ mA}, I_R = 1.0\text{ mA}$ )	$t_{rr}$		5.0		ns

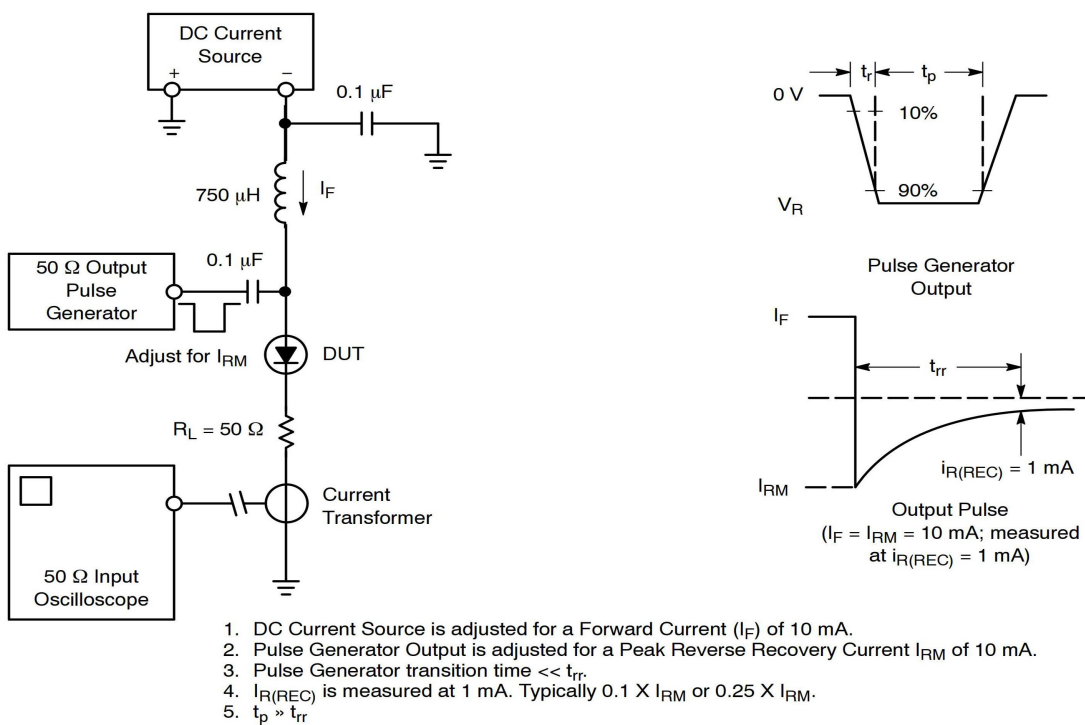


Figure 1. Recovery Time Equivalent Test Circuit

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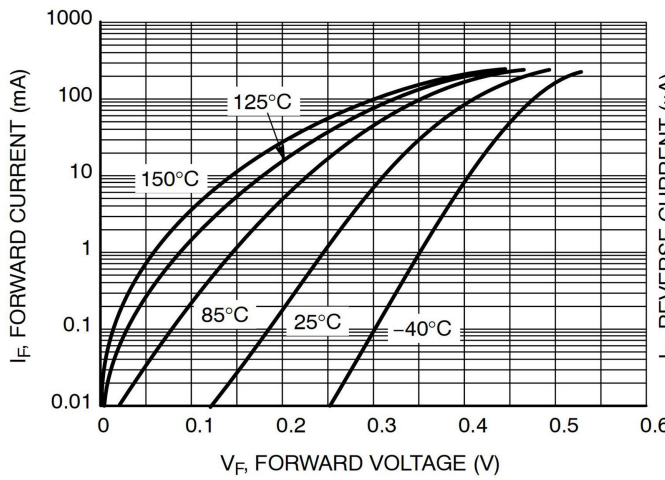


Figure 2. Forward Voltage

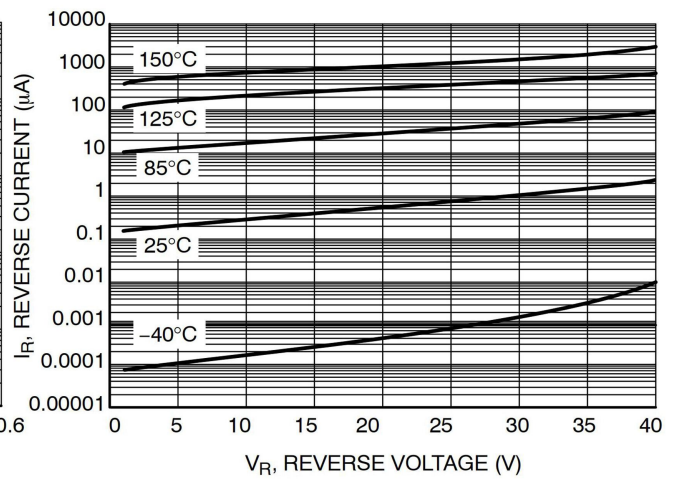


Figure 3. Leakage Current

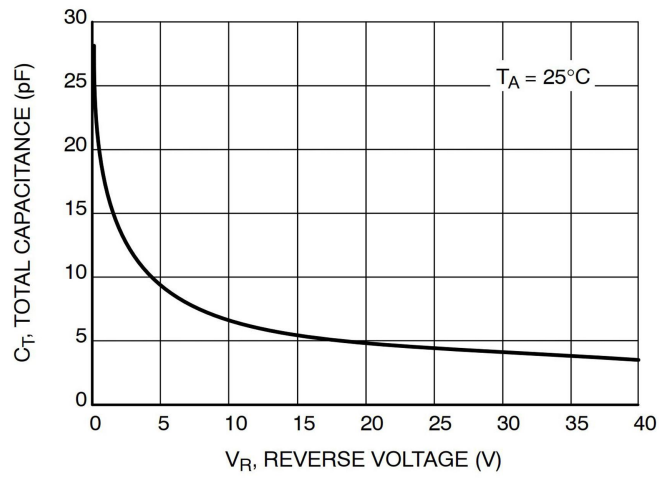


Figure 4. Total Capacitance

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## Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-523	R1	0.002	3000	30000	240000	7"

## Package Outline Dimensions (SOD-523)

Symbol	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	1.10	1.30	0.043	0.051
B	0.25	0.35	0.010	0.014
C	1.50	1.70	0.059	0.067
D	0.50	0.70	0.020	0.027
E	0.70	0.90	0.027	0.035
F	0.05	0.20	0.002	0.008

## Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
X	0.55	0.65	0.022	0.026
Y	0.65	0.75	0.026	0.029
Z	1.37	1.47	0.054	0.058