

# NSR30CM3

## Schottky Barrier Diodes, Dual Common Cathode

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
- Low Forward Voltage – 0.35 V (Typ) @  $I_F = 10$  mA
- NSVR Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- This is a Pb-Free Device

### MAXIMUM RATINGS ( $T_J = 125^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	30	Volts
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_F$	190 1.9	mW mW/ $^\circ\text{C}$
Forward Current (DC)	$I_F$	200 Max	mA
Junction Temperature	$T_J$	125 Max	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Thermal Resistance Junction-to-Ambient (Note 1)	$R_{\theta JA}$	525	$^\circ\text{C}/\text{W}$

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.

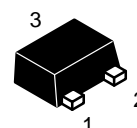
1. FR-4 board with minimum mounting pad.



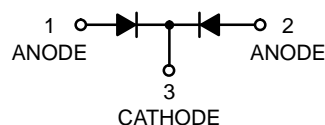
ON Semiconductor®

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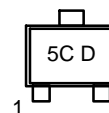
## 30 VOLTS DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES



SOT-723  
CASE 631AA  
STYLE 3



### MARKING DIAGRAM



5C = Specific Device Code  
D = Date Code

### ORDERING INFORMATION

Device	Package	Shipping†
NSR30CM3T5G	SOT-723 (Pb-Free)	8000/Tape & Reel
NSVR30CM3T5G	SOT-723 (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 Specifications Brochure, BRD8011/D.

# NSR30CM3

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \mu\text{A}$ )	$V_{(BR)R}$	30	–	–	V
Total Capacitance ( $V_R = 1.0 \text{ V}$ , $f = 1.0 \text{ MHz}$ )	$C_T$	–	7.6	10	pF
Reverse Leakage ( $V_R = 25 \text{ V}$ )	$I_R$	–	0.5	2.0	$\mu\text{A}$
Forward Voltage ( $I_F = 0.1 \text{ mA}$ ) ( $I_F = 1.0 \text{ mA}$ ) ( $I_F = 10 \text{ mA}$ ) ( $I_F = 30 \text{ mA}$ ) ( $I_F = 100 \text{ mA}$ )	$V_F$	– – – – –	0.22 0.29 0.35 0.41 0.52	0.24 0.32 0.40 0.50 0.80	V
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mA}$ , $I_{R(\text{REC})} = 1.0 \text{ mA}$ , Figure 1)	$t_{rr}$	–	–	5.0	ns
Forward Current (DC)	$I_F$	–	–	200	mA
Repetitive Peak Forward Current	$I_{FRM}$	–	–	300	mA
Non–Repetitive Peak Forward Current ( $t < 1.0 \text{ s}$ )	$I_{FSM}$	–	–	600	mA

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.

# NSR30CM3

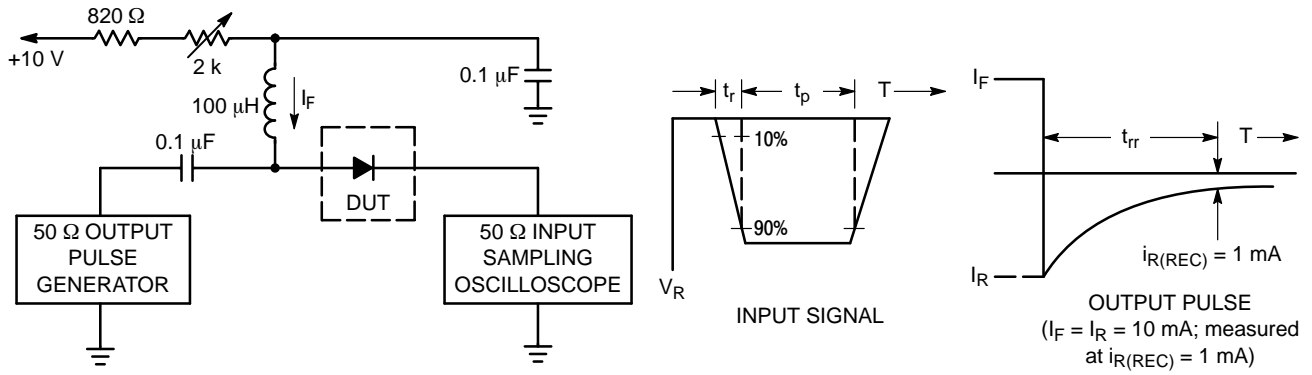


Figure 1. Recovery Time Equivalent Test Circuit

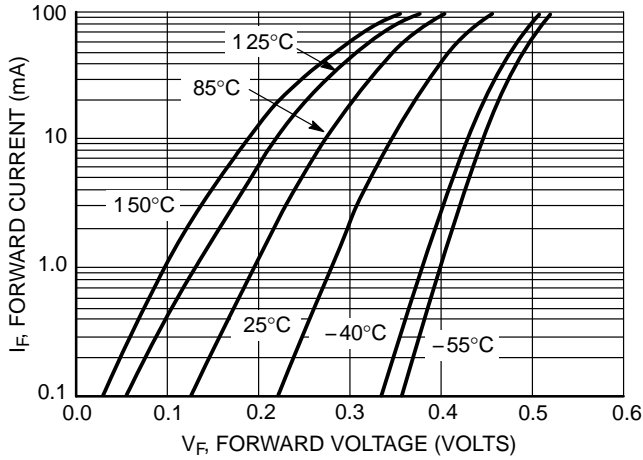


Figure 2. Forward Voltage

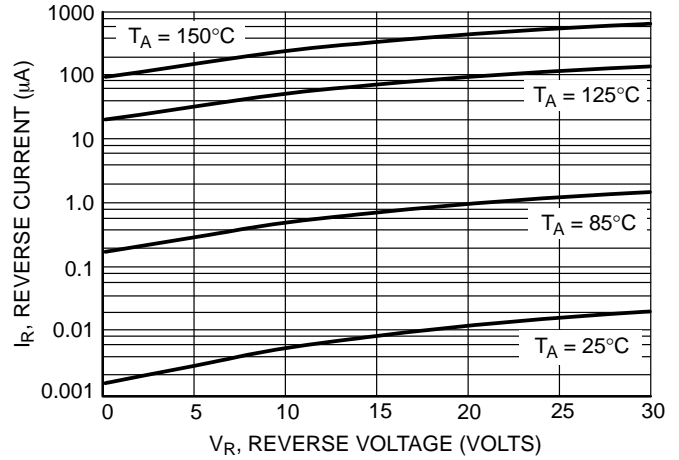


Figure 3. Leakage Current

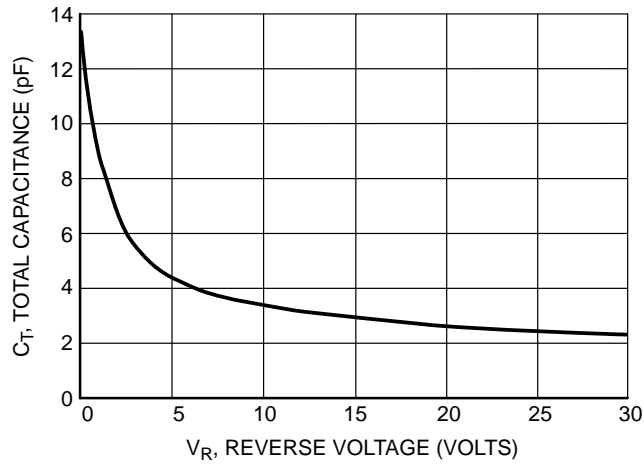


Figure 4. Total Capacitance

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

ON Semiconductor®



SCALE 4:1

**SOT-723**  
CASE 631AA-01  
ISSUE D

DATE 10 AUG 2009

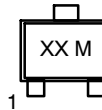


**NOTES:**

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, PROTRUSIONS OR GATE BURRS.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.45	0.50	0.55
b	0.15	0.21	0.27
b1	0.25	0.31	0.37
C	0.07	0.12	0.17
D	1.15	1.20	1.25
E	0.75	0.80	0.85
e	0.40 BSC		
H E	1.15	1.20	1.25
L	0.29 REF		
L2	0.15	0.20	0.25

**GENERIC MARKING DIAGRAM\***



XX = Specific Device Code  
M = Date Code

- |   |  |  |  |  |
|---|--|--|--|--|
| STYLE 1:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 2:<br>PIN 1. ANODE<br>2. N/C<br>3. CATHODE | STYLE 3:<br>PIN 1. ANODE<br>2. ANODE<br>3. CATHODE | STYLE 4:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. ANODE | STYLE 5:<br>PIN 1. GATE<br>2. SOURCE<br>3. DRAIN |
|---|--|--|--|--|

**RECOMMENDED SOLDERING FOOTPRINT\***



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

\*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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