# 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) @  $I_F = 10 \text{ mA}$
- 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<sub>J</sub> = $125^{\circ}C$ unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V <sub>R</sub>	30	Volts
Forward Power Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	P <sub>F</sub>	190 1.9	mW mW/°C
Forward Current (DC)	١ <sub>F</sub>	200 Max	mA
Junction Temperature	TJ	125 Max	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C
Thermal Resistance Junction-to-Ambient (Note 1)	R <sub>θJA</sub>	525	°C/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.



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# 30 VOLTS DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES





## MARKING DIAGRAM



5C = Specific Device Code D = Date Code

### **ORDERING INFORMATION**

Device	Package	Shipping <sup>†</sup>
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.

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

Characteristic	Symbol	Min	Тур	Max	Unit
Reverse Breakdown Voltage $(I_R = 10 \ \mu A)$	V <sub>(BR)R</sub>	30	-	-	V
Total Capacitance (V <sub>R</sub> = 1.0 V, f = 1.0 MHz)	C <sub>T</sub>	-	7.6	10	pF
Reverse Leakage (V <sub>R</sub> = 25 V)	I <sub>R</sub>	-	0.5	2.0	μΑ
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 <sub>F</sub>		0.22 0.29 0.35 0.41 0.52	0.24 0.32 0.40 0.50 0.80	V
Reverse Recovery Time $(I_F = I_R = 10 \text{ mA}, I_{R(REC)} = 1.0 \text{ mA}, Figure 1)$	t <sub>rr</sub>	-	-	5.0	ns
Forward Current (DC)	١ <sub>F</sub>	-	-	200	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	-	-	300	mA
Non–Repetitive Peak Forward Current (t < 1.0 s)	I <sub>FSM</sub>	-	-	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.

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Notes: 1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current (I<sub>F</sub>) of 10 mA. 2. Input pulse is adjusted so I<sub>R(peak)</sub> is equal to 10 mA. 3. t<sub>p</sub> » t<sub>rr</sub>







Figure 4. Total Capacitance

#### **MECHANICAL CASE OUTLINE** PACKAGE DIMENSIONS



#### SOT-723 1.20x0.80x0.50, 0.40P CASE 631AA ISSUE E

#### DATE 24 JAN 2024

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NDTES:

- DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018. CONTROLLING DIMENSION: MILLIMETERS. 1.
- 2.
- MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM З. LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
- 4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.





SIDE VIEW

	MI	MILLIMETERS				
DIM	MIN.	NDM,	MAX,			
А	0.45	0.50	0.55			
b	0.15	0.21	0.27			
b1	0.25	0.31	0.37			
С	0.07	0.12	0.17			
D	1.15	1.20	1.25			
E	0.75	0.80	0.85			
e	0.40 BSC					
Н	1.15	1.20	1.25			
L		0.29 REF				
L2	0.15	0.20	0.25			



\*For additional information on our Pb-Free strategy and soldering details, please download the DN Semiconductor Soldering and Mounting Techniques Reference Manual, SDLDERRM/D.



GENERIC **MARKING DIAGRAM\*** 



XX = Specific Device Code Μ = 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:	STYLE 2:		STYLE 3:	STYLE 4	4:	STYLE 5:		
PIN 1. BASE	PIN 1. A	NODE	PIN 1. ANODE	PIN 1.	CATHODE	PIN 1. GATE		
2. EMITTER	2. N	I/C	2. ANODE	2.	CATHODE	2. SOURCE		
3. COLLECTOR	3. C	ATHODE	<ol><li>CATHODE</li></ol>	3.	ANODE	3. DRAIN		
DOCUMENT NUM	IDED.	00 1 01			Electronic v	ersions are uncontrolled	d except when accessed directly from	the Document Repository.
DOCUMENT NUM	IDER:	98AON12989D Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in re			COPY" in red.			
DESCRIPTION: SOT-723 1.20x0.80x0.50, 0.								
DESCRIP	TION:	SOT-7	723 1.20x0.80x	0.50, 0	.40P			PAGE 1 OF 1
DESCRIP	TION:	SOT-7	723 1.20x0.80x	0.50, 0	.40P			PAGE 1 OF 1

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