

# NSR30CM3T5G

Preferred Device

## Dual Common Cathode Schottky Barrier Diodes

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.

- Extremely Fast Switching Speed
- Low Forward Voltage – 0.35 V (Typ) @  $I_F = 10$  mA
- 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 Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

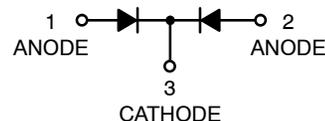
1. FR-5 board with minimum mounting pad.



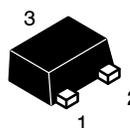
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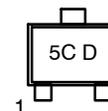
### 30 V DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES



### MARKING DIAGRAM



SOT-723  
CASE 631AA  
STYLE 3



5C = Specific Device Code  
D = Date Code

### ORDERING INFORMATION

Device	Package	Shipping†
NSR30CM3T5G	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.

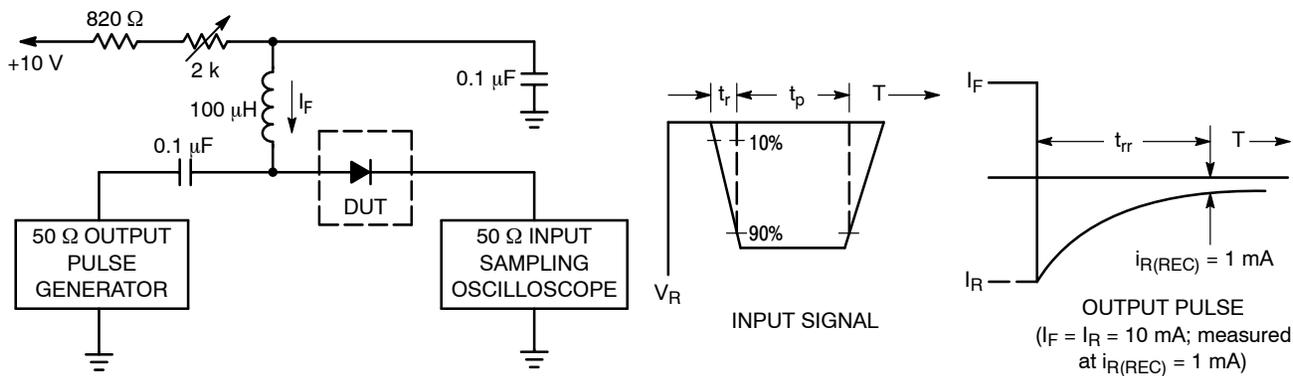
Preferred devices are recommended choices for future use and best overall value.

# NSR30CM3T5G

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

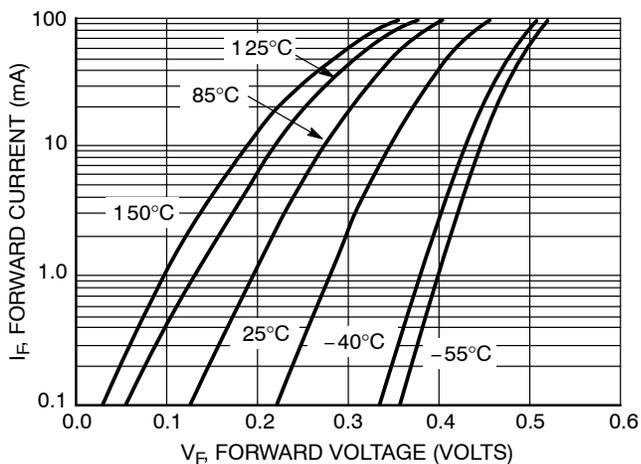
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \mu\text{A}$ )	$V_{(BR)R}$	30	–	–	V
Total Capacitance ( $V_R = 1.0 \text{ V}$ , $f = 1.0 \text{ MHz}$ )	$C_T$	–	7.6	10	pF
Reverse Leakage ( $V_R = 25 \text{ V}$ )	$I_R$	–	0.5	2.0	$\mu\text{A}$
Forward Voltage ( $I_F = 0.1 \text{ mA}$ )	$V_F$	–	0.22	0.24	V
Forward Voltage ( $I_F = 30 \text{ mA}$ )	$V_F$	–	0.41	0.5	V
Forward Voltage ( $I_F = 100 \text{ mA}$ )	$V_F$	–	0.52	0.8	V
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mA}$ , $I_{R(REC)} = 1.0 \text{ mA}$ , Figure 1)	$t_{rr}$	–	–	5.0	ns
Forward Voltage ( $I_F = 1.0 \text{ mA}$ )	$V_F$	–	0.29	0.32	V
Forward Voltage ( $I_F = 10 \text{ mA}$ )	$V_F$	–	0.35	0.40	V
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

# NSR30CM3T5G

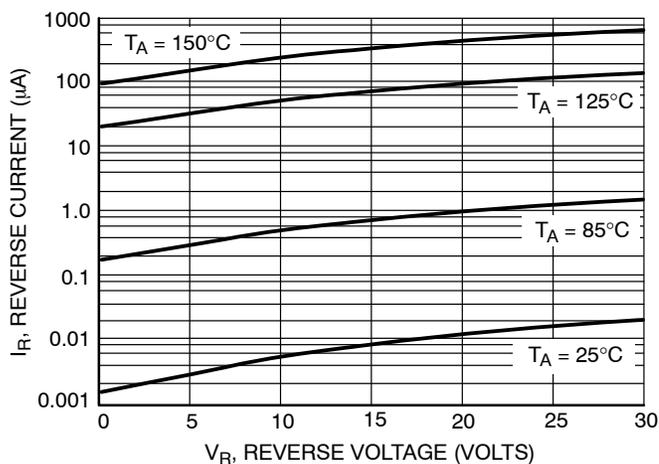


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

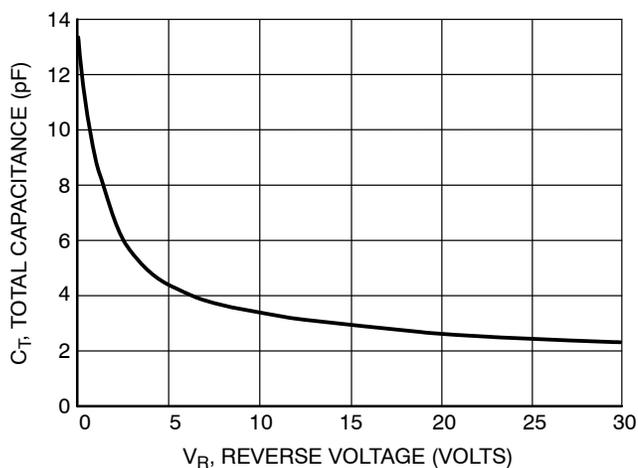
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

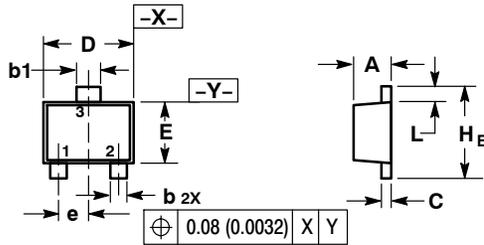


**Figure 4. Total Capacitance**

# NSR30CM3T5G

## PACKAGE DIMENSIONS

SOT-723  
CASE 631AA-01  
ISSUE B



NOTES:

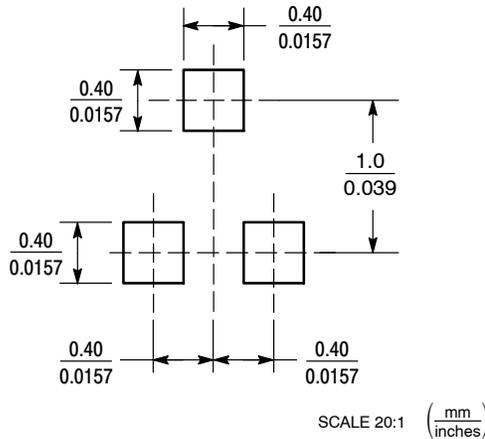
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
b	0.15	0.21	0.27	0.0059	0.0083	0.0106
b1	0.25	0.31	0.37	0.010	0.012	0.015
C	0.07	0.12	0.17	0.0028	0.0047	0.0067
D	1.15	1.20	1.25	0.045	0.047	0.049
E	0.75	0.80	0.85	0.03	0.032	0.034
e	0.40 BSC			0.016 BSC		
HE	1.15	1.20	1.25	0.045	0.047	0.049
L	0.15	0.20	0.25	0.0059	0.0079	0.0098

STYLE 3:

1. ANODE
2. ANODE
3. CATHODE

### SOLDERING 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.

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