NSR0170DT1G

Product Preview

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. NSR0170DT in a SOD-323 small footprint package enables designers to meet the challenging task of achieving higher efficiency designs and meeting reduced space requirements.

Features

- Very Low Forward Voltage Drop - 560 mV @ 10
- Low Reverse Current - 25 nA @ 50 V V_R
- 70 mA of Continuous Forward Current
- Power Dissipation of 160 mW with Minimum Trace
- Very High Switching Speed
- Low Capacitance – CT = 2 pF
- NSV Prefix for Automotive and Other Applications Requiring Unique site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- Pb-free Device, Halogen Free/BFR Free and are RoHS Compliant*

MAXIMUM RATINGS (T_A = 25°C)

Rating	Symbol	Max	Unit
Reverse Voltage	V_R	70	V
Forward Current (DC)	I_F	70	mA
Non-repetitive peak surge forward current	I_{FSM}	100	mA
ESD Rating: Human Body Model Machine Model	ESD	Class 2 Class B	

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.

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.

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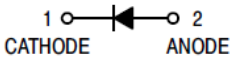
70 V SCHOTTKY BARRIER DIODE



SOD−323
CASE 477
STYLE 1

MARKING DIAGRAM

xx = TBD (Device Code)
M = Date Code*
` = Assembly Location

ORDERING INFORMATION

Device	Package	Shipping†
NSR0170DT1G	SOD-323 (Pb-Free)	3000 / Tape & Reel
NSVR0170DT1G		

THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Thermal Resistance Junction-to-Ambient (Note 1) Total Power Dissipation @ TA = 25°C	 $R_{\theta JA}$ P_D	 - -	 - -	 740 160	 °C/W mW
Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ TA = 25°C	 $R_{\theta JA}$ P_D	 - -	 - -	 460 270	 °C/W mW
Junction and Storage Temperature Range	T_J, T_{stg}	-	-	-55 to +150	°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°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Reverse Leakage (V_R = 50 V) (V_R = 70 V)	I_R	 - -	 25 -	 90 3.0	 nA μA
Forward Voltage (I_F = 1.0 mA) (I_F = 10 mA) (I_F = 15 mA)	V_F	 - - -	 0.34 0.56 0.65	 0.39 0.64 0.73	 V
Total Capacitance (V_R = 0 V, f = 1 MHz)	CT	 -	 2.0	 -	pF

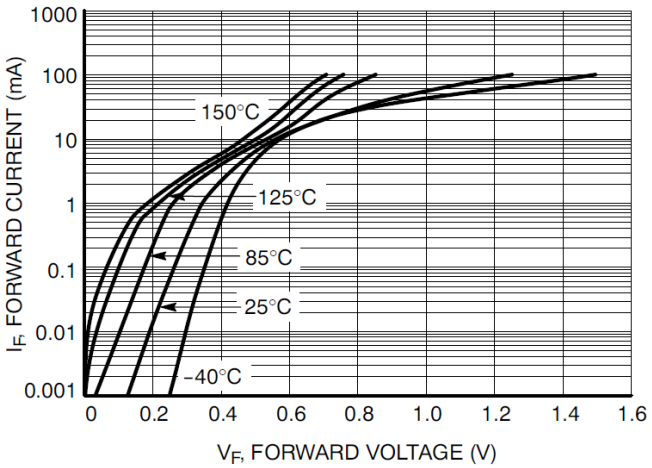


Figure 1. Forward Voltage

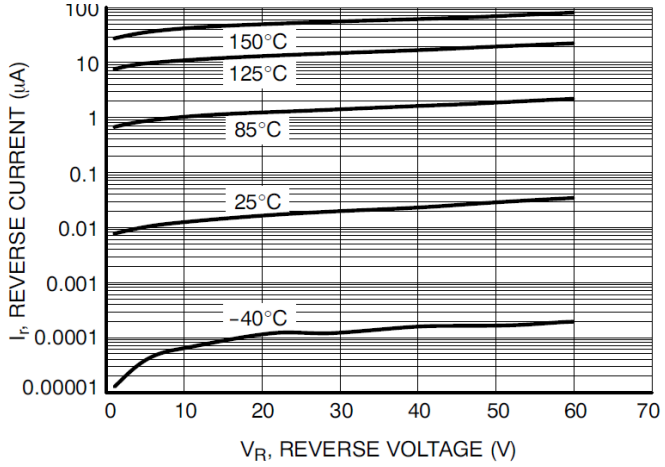


Figure 2. Leakage Current

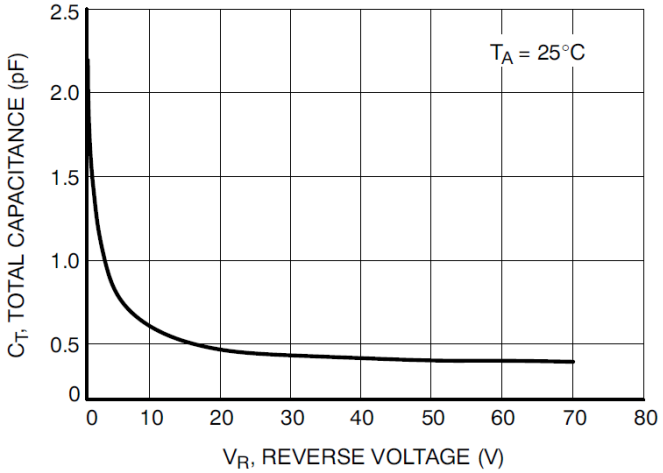
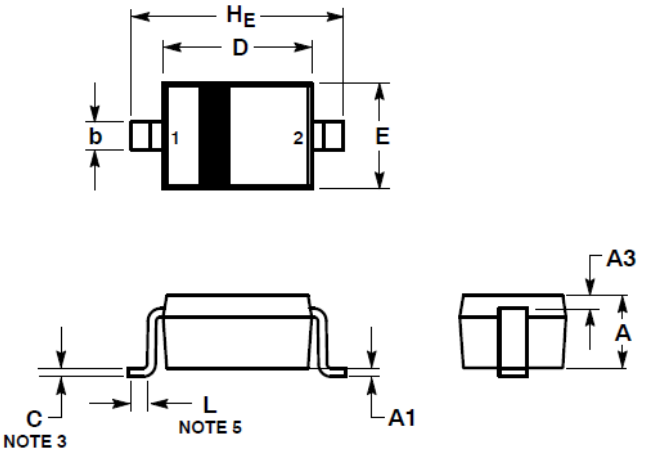


Figure 3. Total Capacitance

PACKAGE DIMENSIONS

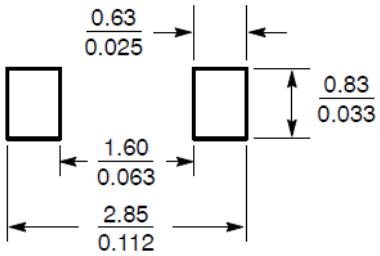


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
H_E	2.30	2.50	2.70	0.090	0.098	0.105

STYLE 1:
PIN 1. CATHODE
2. ANODE

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.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
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