

MBR0530T1G, NRVB0530T1G, MBR0530T3G, NRVB0530T3G

Surface Mount Schottky Power Rectifier

Plastic SOD-123 Package

The MBR0530T1/3 uses the Schottky Barrier principle with a large area metal-to-silicon power diode. Ideally suited for low voltage, high frequency rectification or as free wheeling and polarity protection diodes in surface mount applications where compact size and weight are critical to the system. This package also provides an easy to work with alternative to leadless 34 package style. These state-of-the-art devices have the following features:

Features

- Guardring for Stress Protection
- Low Forward Voltage
- 125°C Operating Junction Temperature
- Epoxy Meets UL 94, V-0 @ 0.125 in
- Package Designed for Optimal Automated Board Assembly
- AEC-Q101 Qualified and PPAP Capable
- NRVB Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- All Packages are Pb-Free*

Mechanical Characteristics

- Polarity Designator: Cathode Band
- Weight: 11.7 mg (approximately)
- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

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



ON Semiconductor®

<http://onsemi.com>

SCHOTTKY BARRIER RECTIFIER 0.5 AMPERES 30 VOLTS



SOD-123
CASE 425
STYLE 1

MARKING DIAGRAM



B3 = Device Code
M = Date Code
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping [†]
MBR0530T1G	SMB (Pb-Free)	3,000 / Tape & Reel **
NRVB0530T1G	SMB (Pb-Free)	3,000 / Tape & Reel **
MBR0530T3G	SMB (Pb-Free)	10,000 / Tape & Reel ***
NRVB0530T3G	SMB (Pb-Free)	10,000 / Tape & Reel ***

** 8 mm Tape, 7" Reel

*** 8 mm Tape, 13" 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.

MBR0530T1G, NRVB0530T1G, MBR0530T3G, NRVB0530T3G

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
Average Rectified Forward Current (Rated V_R , $T_L = 100^\circ\text{C}$)	$I_{F(AV)}$	0.5	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	5.5	A
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$
Operating Junction Temperature	T_J	-65 to +125	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R)	dv/dt	1000	V/ μs
ESD Rating: Machine Model = C Human Body Model = 3B		> 400 > 8000	V

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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance – Junction-to-Ambient (Note 1)	$R_{\theta JA}$	206	$^\circ\text{C}/\text{W}$
Thermal Resistance – Junction-to-Lead	$R_{\theta JL}$	150	$^\circ\text{C}/\text{W}$

1. 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board.

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 2) ($i_F = 0.1$ Amps, $T_J = 25^\circ\text{C}$) ($i_F = 0.5$ Amps, $T_J = 25^\circ\text{C}$)	V_F	0.375 0.43	V
Maximum Instantaneous Reverse Current (Note 2) (Rated DC Voltage, $T_C = 25^\circ\text{C}$) ($V_R = 15$ V, $T_C = 25^\circ\text{C}$)	I_R	130 20	μA

2. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$.

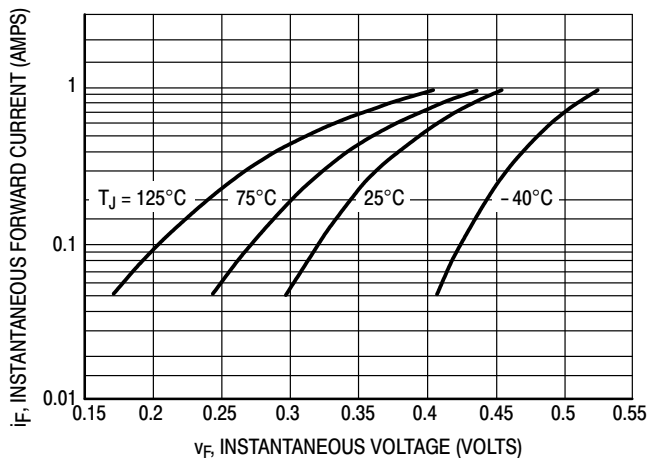


Figure 1. Typical Forward Voltage

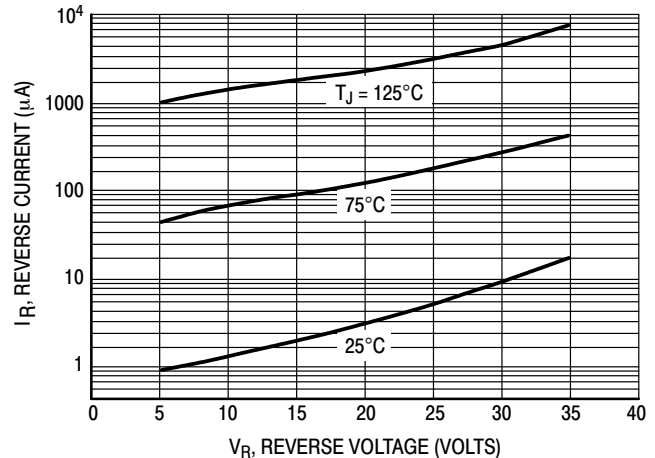


Figure 2. Typical Reverse Current

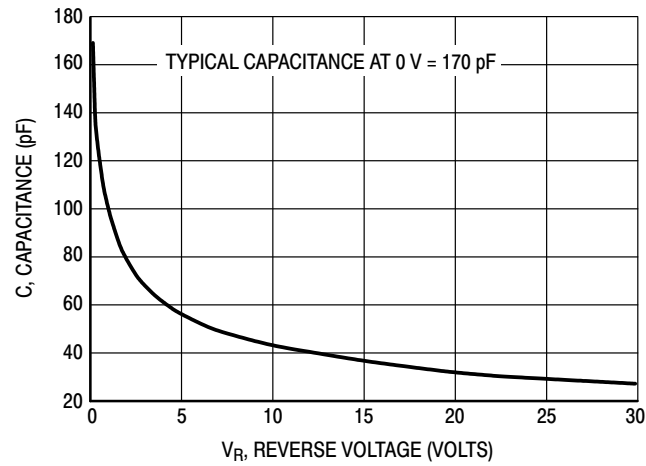


Figure 3. Typical Capacitance

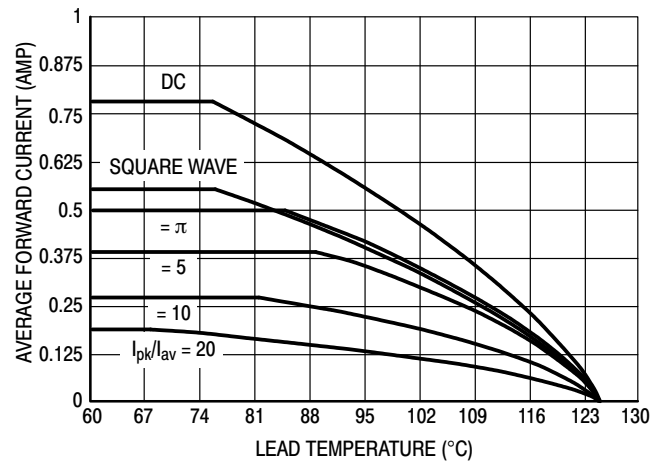


Figure 4. Current Derating (Lead)

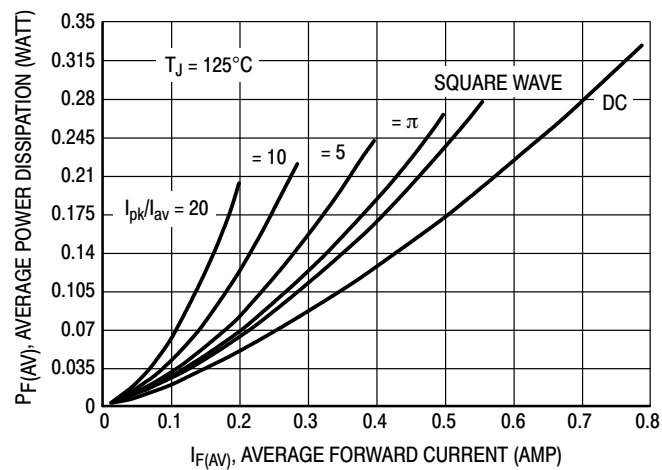
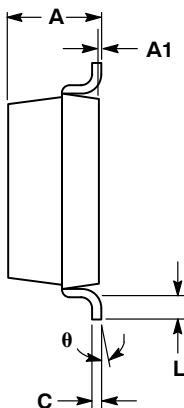
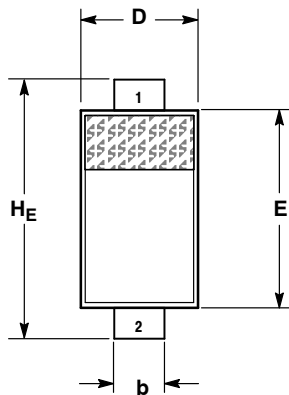


Figure 5. Power Dissipation

MBR0530T1G, NRVB0530T1G, MBR0530T3G, NRVB0530T3G

PACKAGE DIMENSIONS

SOD-123
CASE 425-04
ISSUE G



NOTES:

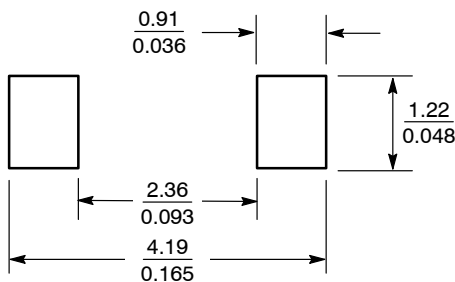
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.94	1.17	1.35	0.037	0.046	0.053
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.51	0.61	0.71	0.020	0.024	0.028
c	---	---	0.15	---	---	0.006
D	1.40	1.60	1.80	0.055	0.063	0.071
E	2.54	2.69	2.84	0.100	0.106	0.112
H _E	3.56	3.68	3.86	0.140	0.145	0.152
L	0.25	---	---	0.010	---	---
θ	0°	---	10°	0°	---	10°

STYLE 1:

- PIN 1: CATHODE
- ANODE

SOLDERING FOOTPRINT*



SCALE 10:1 (mm/inches)

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

ON Semiconductor and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada

Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910

Japan Customer Focus Center
Phone: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local
Sales Representative

MBR0530T1/D

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9