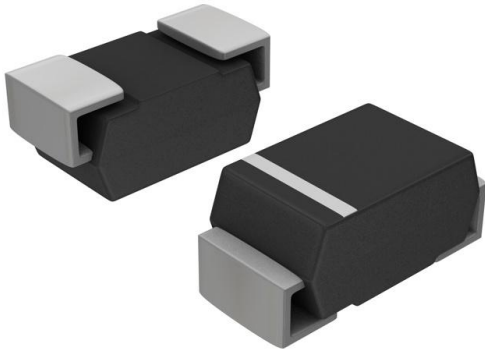


# NRVA4005T3G Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	NRVA4005T3G-DG
Manufacturer	<a href="#">onsemi</a>
Manufacturer Product Number	NRVA4005T3G
Description	DIODE GEN PURP 600V 1A SMA
Detailed Description	Diode 600 V 1A Surface Mount SMA

This model NRVA4005T3G is available at DiGi Electronics.

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Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

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## Purchase and inquiry

Manufacturer Product Number:

NRVA4005T3G

Series:

-

Technology:

Standard

Current - Average Rectified (Io):

1A

Speed:

Standard Recovery >500ns, > 200mA (Io)

Capacitance @ Vr, F:

-

Qualification:

AEC-Q101

Package / Case:

DO-214AC, SMA

Operating Temperature - Junction:

-55°C ~ 150°C

Manufacturer:

onsemi

Product Status:

Not For New Designs

Voltage - DC Reverse (Vr) (Max):

600 V

Voltage - Forward (Vf) (Max) @ If:

1.1 V @ 1 A

Current - Reverse Leakage @ Vr:

10 µA @ 600 V

Grade:

Automotive

Mounting Type:

Surface Mount

Supplier Device Package:

SMA

Base Product Number:

NRVA4005

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0080

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

# Surface Mount Standard Recovery Power Rectifier

## SMA Power Surface Mount Package

### MRA4003T3G Series, NRVA4003T3G Series

Features construction with glass passivation. Ideally suited for surface mounted automotive applications.

#### Features

- Compact Package with J-Bend Leads Ideal for Automated Handling
- Stable, High Temperature, Glass Passivated Junction
- NRVA Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free and are RoHS Compliant\*

#### Mechanical Characteristics

- Case: Molded Epoxy  
Epoxy meets UL 94 V-0 @ 0.125 in
- Weight: 70 mg (Approximately)
- Finish: All External Surfaces are Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 seconds in Solder Bath
- Polarity: Band in Plastic Body Indicates Cathode Lead
- Marking: MRA4003T3G = R13  
MRA4004T3G = R14  
MRA4005T1G = R15  
MRA4005T3G = R15  
MRA4006T3G = R16  
MRA4007T3G = R17  
NRVA4003T3G = R13  
NRVA4004T3G = R14  
NRVA4005T3G = R15  
NRVA4006T3G = R16  
NRVA4007T3G = R17
- ESD Rating:
  - ◆ Human Body Model 3A
  - ◆ Machine Model C

## STANDARD RECOVERY RECTIFIERS 1.0 AMPERES 300–1000 VOLTS



SMA  
CASE 403D

#### MARKING DIAGRAM



R1x = Specific Device Code  
 F = Wafer Source  
 A = Assembly Location  
 Y = Year  
 WW = Work Week  
 ■ = Pb-Free Package  
 (Note: Microdot may be in either location)

#### ORDERING INFORMATION

See detailed ordering and shipping information in the ordering information section on page 4 of this data sheet.

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

## MRA4003T3G Series, NRVA4003T3G Series

## MAXIMUM RATINGS

Rating	Symbol	Value					Unit
		MRA4003	MRA4004/ NRVA4004	MRA4005/ NRVA4005	MRA4006/ NRVA4006	MRA4007/ NRVA4007	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	300	400	600	800	1000	Volts
Avg. Rectified Forward Current (At Rated $V_R$ , $T_L = 150^\circ\text{C}$ )	$I_O$	1					Amp
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz, $T_L = 150^\circ\text{C}$ )	$I_{FRM}$	2					Amps
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	$I_{FSM}$	30					Amps
Junction Operating Temperature Range	$T_J$	-55 to 150					$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 175					$^\circ\text{C}$

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.

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Lead (Note 1)	$R_{\theta JL}$	16.2	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	88.3	$^\circ\text{C}/\text{W}$

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value		Unit
		$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	
Maximum Instantaneous Forward Voltage (Note 3) ( $I_F = 1\text{ A}$ ) ( $I_F = 2\text{ A}$ )	$V_F$	1.1 1.18	1.04 1.12	Volts
Maximum Instantaneous Reverse Current (at rated DC voltage)	$I_R$	10	50	$\mu\text{A}$

1. Minimum Pad Size
2. 1 inch Pad Size
3. Pulse Test: Pulse Width  $\leq 250\ \mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

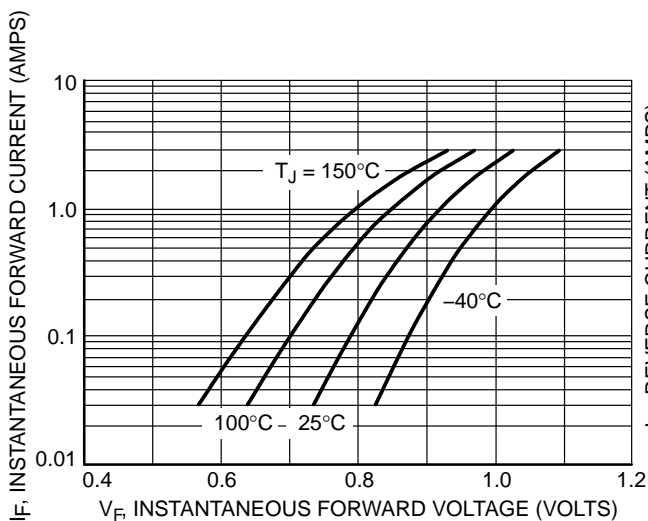


Figure 1. Typical Forward Voltage

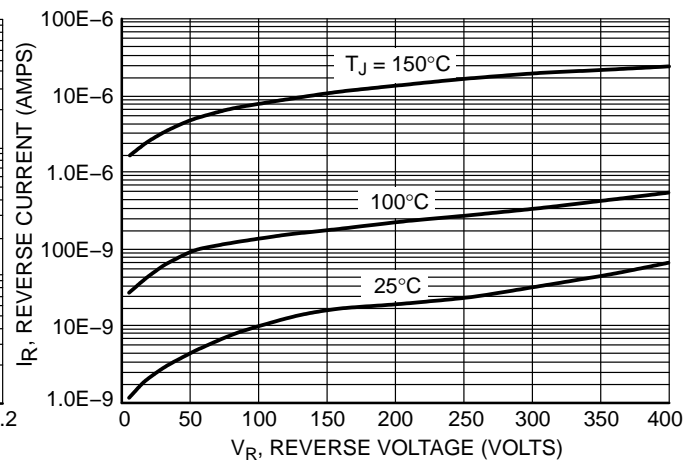
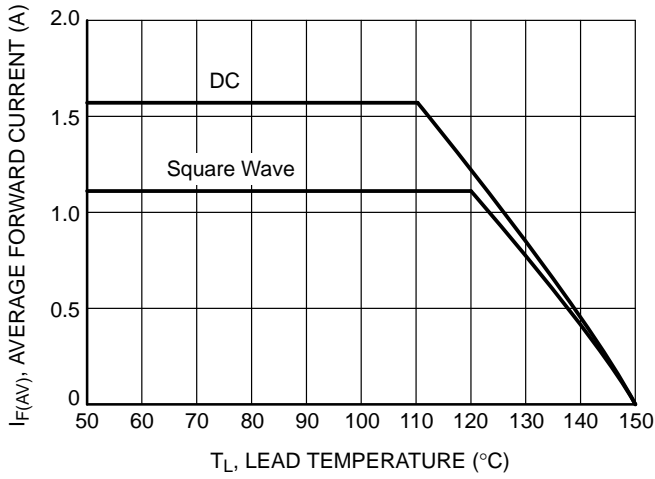
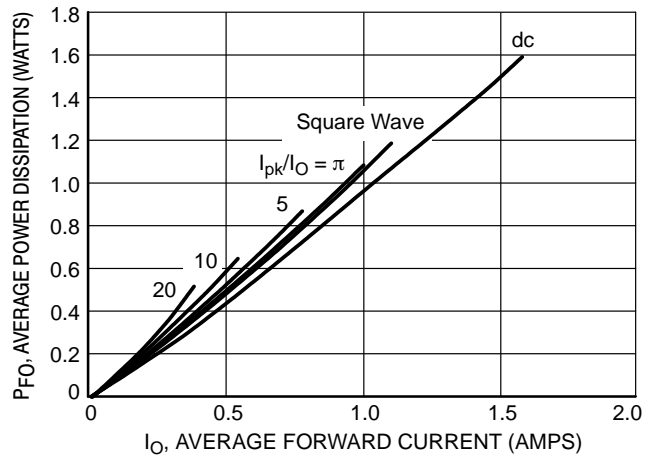


Figure 2. Typical Reverse Current

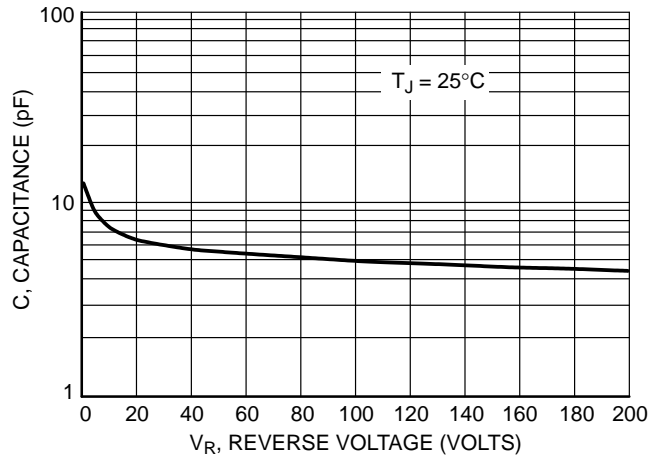
**MRA4003T3G Series, NRVA4003T3G Series**



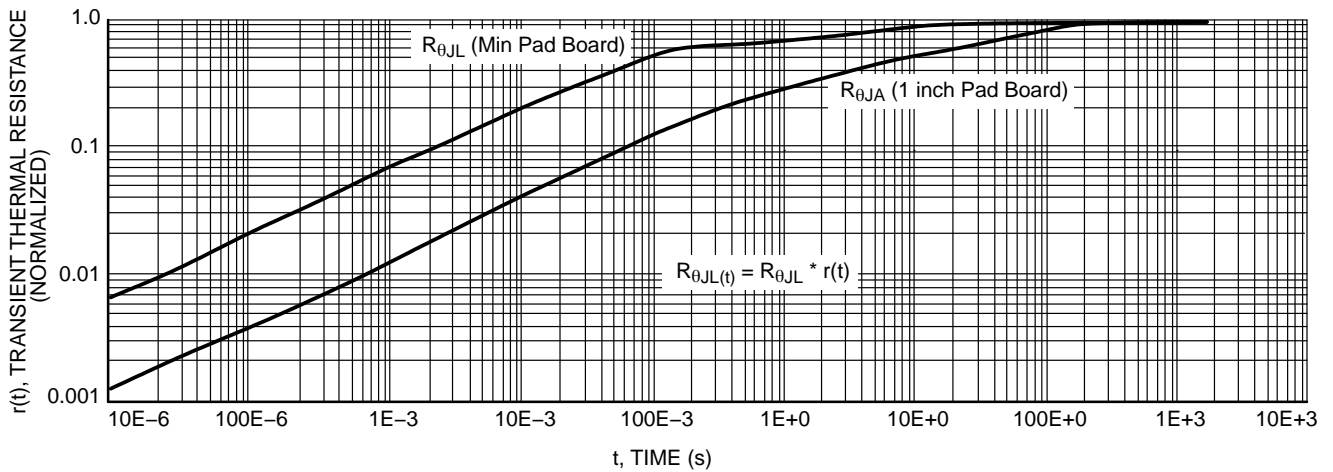
**Figure 3. Current Derating**



**Figure 4. Forward Power Dissipation per Leg**



**Figure 5. Capacitance**



**Figure 6. Thermal Response**

**MRA4003T3G Series, NRVA4003T3G Series****ORDERING INFORMATION**

Device	Package	Shipping†
MRA4003T3G	SMA (Pb-Free)	5,000 / Tape & Reel
MRA4004T3G		
MRA4005T1G		1,500 / Tape & Reel
MRA4005T3G		5,000 / Tape & Reel
MRA4006T3G		
MRA4007T3G		
NRVA4003T3G*		5,000 / Tape & Reel
NRVA4004T3G*		
NRVA4005T3G*		
NRVA4006T3G*		
NRVA4007T3G*		

†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.

\*NRVA Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



**MECHANICAL CASE OUTLINE  
PACKAGE DIMENSIONS**

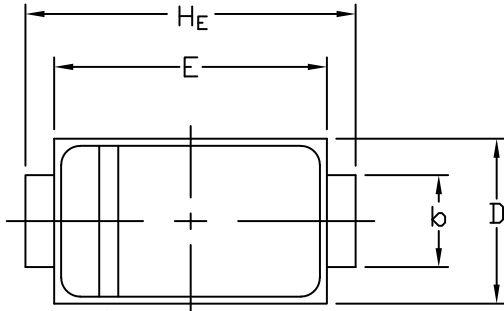


STYLE 1    STYLE 2

SCALE 1:1

**SMA  
CASE 403D  
ISSUE J**

DATE 22 OCT 2021

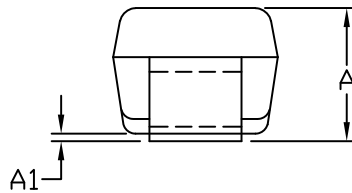
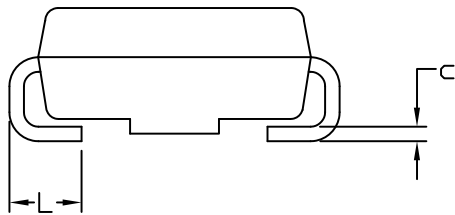


POLARITY INDICATOR  
OPTIONAL AS NEEDED

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCHES
3. DIMENSION *b* SHALL BE MEASURED WITHIN DIMENSION *L*.

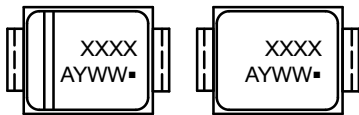
DIM	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	1.97	2.10	2.20	0.078	0.083	0.087
A1	0.05	0.10	0.20	0.002	0.004	0.008
<i>b</i>	1.27	1.45	1.63	0.050	0.057	0.064
<i>c</i>	0.15	0.28	0.41	0.006	0.011	0.016
D	2.29	2.60	2.92	0.090	0.103	0.115
E	4.06	4.32	4.57	0.160	0.170	0.180
HE	4.83	5.21	5.59	0.190	0.205	0.220
L	0.76	1.14	1.52	0.030	0.045	0.060



STYLE 1:  
PIN 1. CATHODE (POLARITY BAND)  
2. ANODE

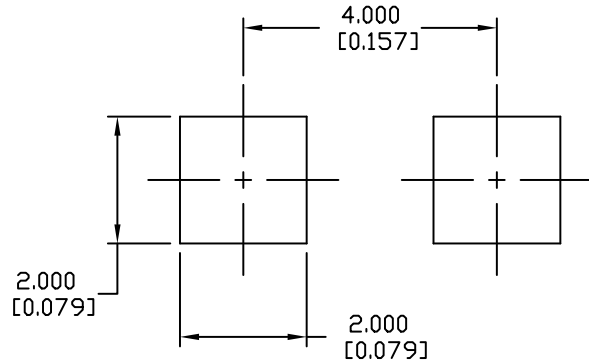
STYLE 2:  
NO POLARITY

**GENERIC  
MARKING DIAGRAM\***



STYLE 1                      STYLE 2

XXXX = Specific Device Code  
A = Assembly Location  
Y = Year  
WW = Work Week  
▪ = Pb-Free Package



RECOMMENDED  
MOUNTING FOOTPRINT

\*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.

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<b>DESCRIPTION:</b>	<b>SMA</b>	<b>PAGE 1 OF 1</b>

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