

# Surface Mount Ultra Fast Power Rectifier

**POWERMITE®**  
**Power Surface Mount Package**

## NHPM260T3G, NRVHPM260T3G

The ultrafast Powermite provides soft recovery fast switching performance in a compact thermally efficient package. The advanced packaging techniques provide for a very efficient micro-miniature space-saving surface mount rectifier. With its unique heatsink design, the Powermite offers thermal performance similar to the SMA while being 50% smaller in footprint area.

### Features

- Fast Soft Switching for Reduced EMI and Higher Efficiency
- Low Profile – Maximum Height of 1.1 mm
- Small Footprint – Footprint Area of 8.45 mm<sup>2</sup>
- Supplied in 12 mm Tape and Reel
- Low Thermal Resistance with Direct Thermal Path of Die on Exposed Cathode Heat Sink
- These Devices are Pb-Free, Halogen Free and are RoHS Compliant

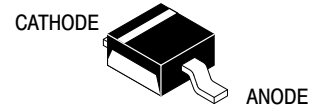
### Mechanical Characteristics:

- Powermite is JEDEC Registered as D0-216AA
- Case: Molded Epoxy
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Weight: 16.3 mg (Approximately)
- Lead and Mounting Surface Temperature for Soldering Purposes: 260 °C Maximum for 10 Seconds
- MSL 1

### Applications

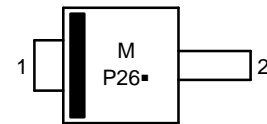
- Automotive HID Lighting
- Diesel Piezo Injection
- Power Factor Correction in Mini Adapters
- Freewheeling Diode Where Space is at a Premium

**ULTRA FAST  
RECTIFIER  
2.0 AMPERES, 600 VOLTS**



**POWERMITE  
CASE 457**

### MARKING DIAGRAM



M = Date Code  
 P26 = Device Code  
 ■ = Pb-Free Package

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
NRVHPM260T3G	Powermite (Pb-Free)	12000/Tape & Reel

### DISCONTINUED (Note 1)

NHPM260T3G	Powermite (Pb-Free)	12000/Tape & Reel
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<sup>†</sup> For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, [BRD8011/D](http://www.onsemi.com/BRD8011/D).

1. **DISCONTINUED:** This device is not available. Please contact your **onsemi** representative for information. The most current information on this device may be available on [www.onsemi.com](http://www.onsemi.com).

# NHPM260T3G, NRVHPM260T3G

## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	600	V
Average Rectified Forward Current ( $T_L = 145\text{ }^\circ\text{C}$ )	$I_O$	2.0	A
Peak Repetitive Forward Current (Square Wave, 20 kHz, $T_L = 125\text{ }^\circ\text{C}$ )	$I_{FRM}$	4.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	15	A
Storage and Operating Junction Temperature Range (Note 2)	$T_{stg}, T_J$	-65 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.

2. The heat generated must be less than the thermal conductivity from Junction-to-Ambient:  $dP_D/dT_J < 1/R_{\theta JA}$ .

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Lead (Note 3)	$\Psi_{JCL}$	8.5	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient (Note 3)	$R_{\theta JA}$	82.9	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient (Note 4)	$R_{\theta JA}$	260	$^\circ\text{C/W}$

## ELECTRICAL CHARACTERISTICS

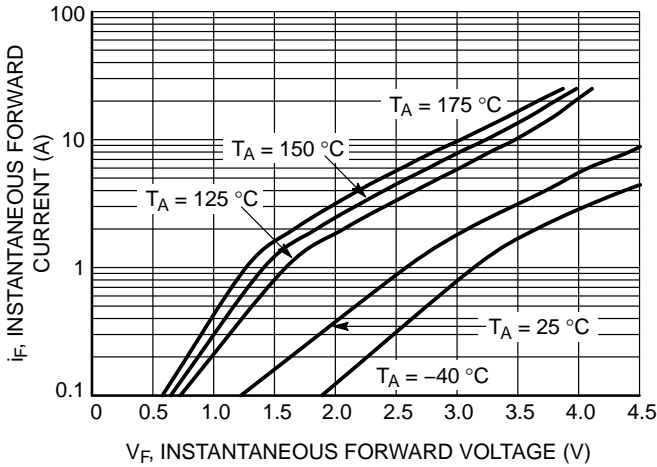
Characteristic	Test Conditions	Symbol	Typ	Max	Unit
Instantaneous Forward Voltage (Note 5)	( $I_F = 2\text{ A}, T_C = 125\text{ }^\circ\text{C}$ ) ( $I_F = 2\text{ A}, T_C = 25\text{ }^\circ\text{C}$ )	$V_F$	2.1 3.0	2.6 3.8	V
Instantaneous Reverse Current (Note 5)	(Rated DC Voltage, $T_C = 125\text{ }^\circ\text{C}$ ) (Rated DC Voltage, $T_C = 25\text{ }^\circ\text{C}$ )	$I_R$	5.0 0.002	50 0.5	$\mu\text{A}$
Reverse Recovery Time Peak Reverse Recovery Current Total Reverse Recovery Charge Softness Factor	( $I_F = 2\text{ A}, dI_F/dt = -200\text{ A}/\mu\text{s}, T_C = 25\text{ }^\circ\text{C}$ )	$t_{rr}$ $I_{RM}$ $Q_{rr}$ S	15 0.5 2.1 0.8	30 3.0 10 3.0	ns A nC -
Reverse Recovery Time Peak Reverse Recovery Current Total Reverse Recovery Charge Softness Factor	( $I_F = 2\text{ A}, dI_F/dt = -200\text{ A}/\mu\text{s}, T_C = 125\text{ }^\circ\text{C}$ )	$t_{rr}$ $I_{RM}$ $Q_{rr}$ S	30 0.7 12 2.4	- - - -	ns A nC -

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.

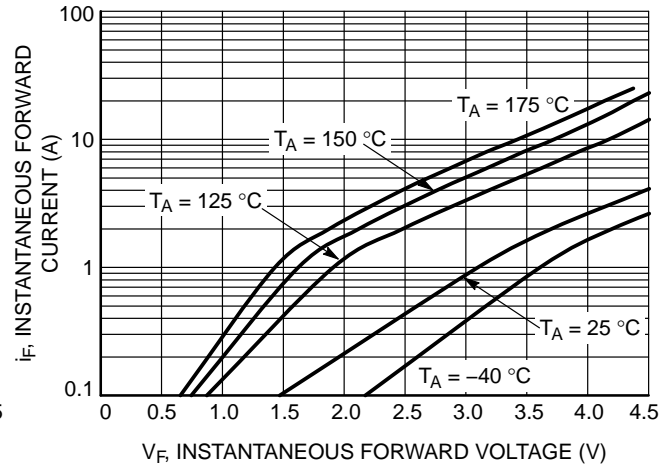
- Mounted with 700 mm<sup>2</sup> copper pad size (Approximately 1 in<sup>2</sup>) 1 oz FR4 Board.
- Mounted with pad size approximately 20 mm<sup>2</sup> copper, 1 oz FR4 Board.
- Pulse Test: Pulse Width  $\leq 380\text{ }\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

# NHPM260T3G, NRVHPM260T3G

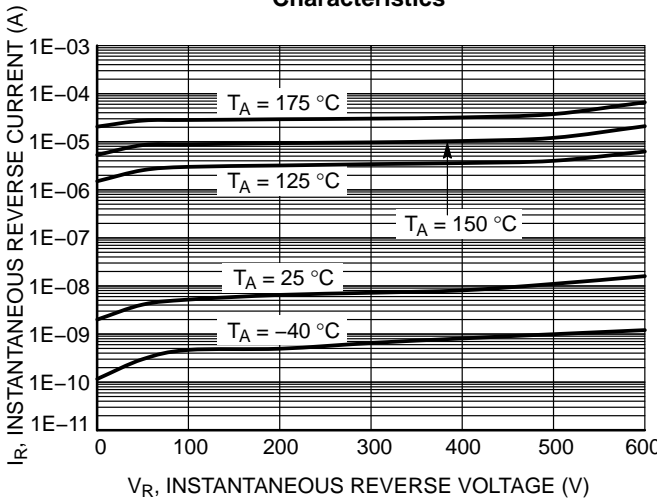
## TYPICAL CHARACTERISTICS



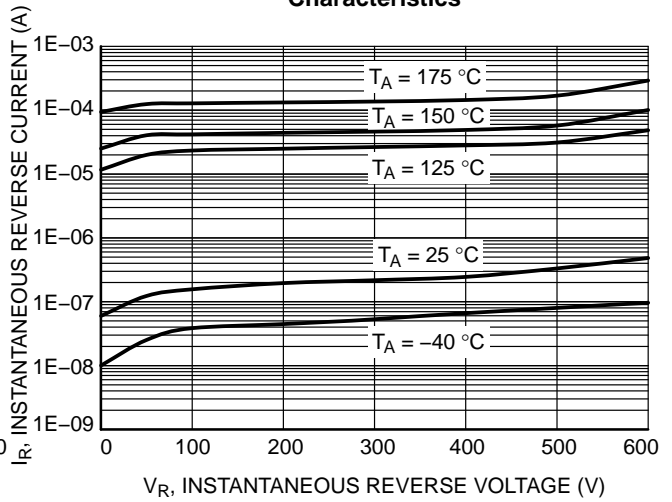
**Figure 1. Typical Instantaneous Forward Characteristics**



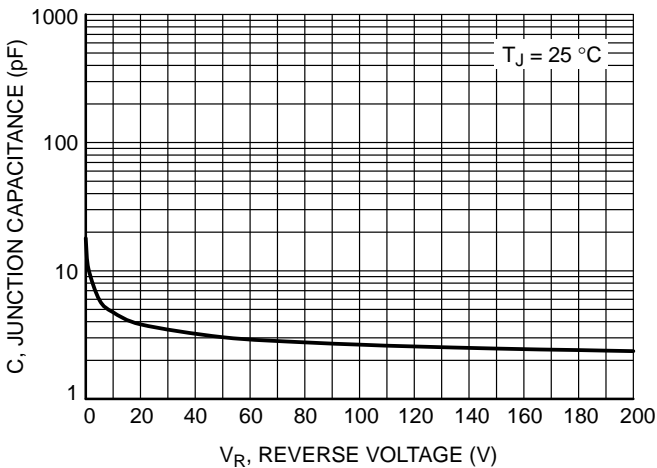
**Figure 2. Maximum Instantaneous Forward Characteristics**



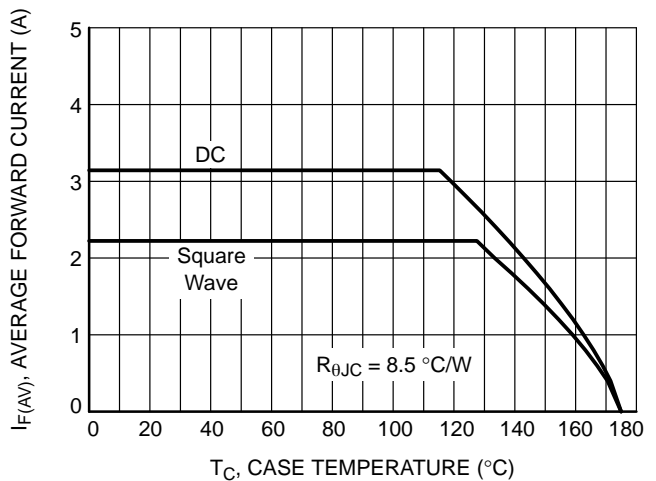
**Figure 3. Typical Reverse Characteristics**



**Figure 4. Maximum Reverse Characteristics**



**Figure 5. Typical Junction Capacitance**



**Figure 6. Current Derating**

# NHPM260T3G, NRVHPM260T3G

## TYPICAL CHARACTERISTICS

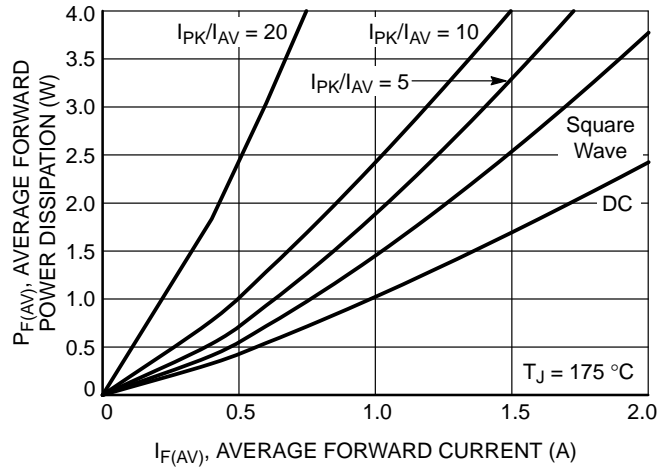


Figure 7. Forward Power Dissipation

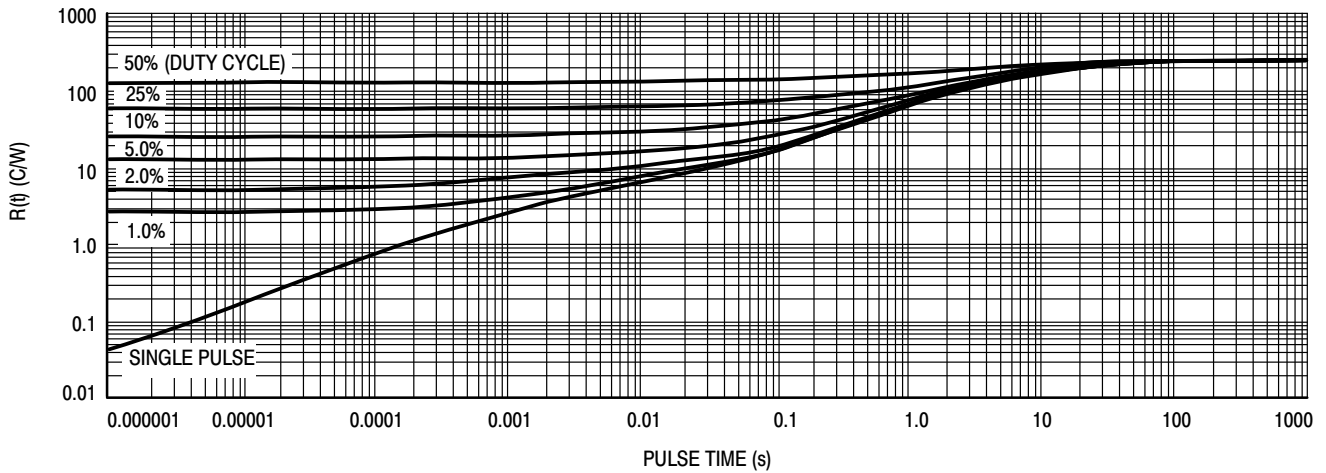


Figure 8. Thermal Response, Junction-to-Ambient (20 mm<sup>2</sup> pad)

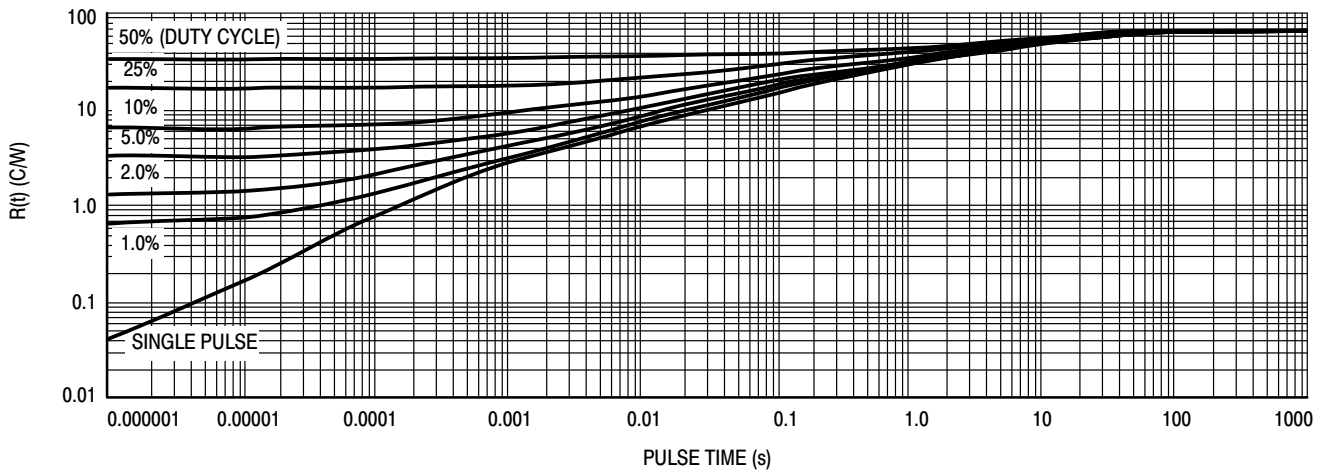


Figure 9. Thermal Response, Junction-to-Ambient (1 in<sup>2</sup> pad)

# NHPM260T3G, NRVHPM260T3G

## REVISION HISTORY

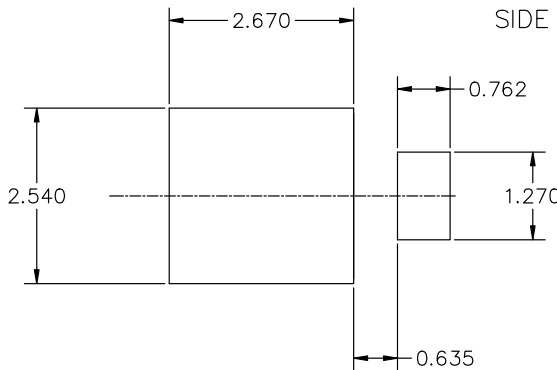
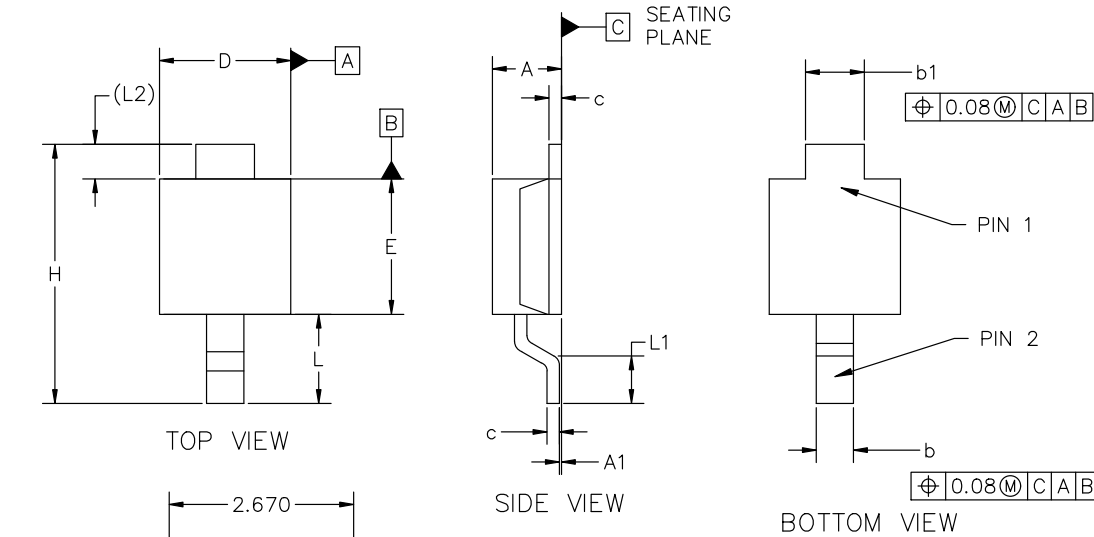
Revision	Description of Changes	Date
2	Rebranded the document to <b>onsemi</b> format. NHPM260T3G OPN marked as Discontinued.	2/9/2026

This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.



**POWERMITE 1.90x1.96x1.00**  
**CASE 457**  
**ISSUE H**

DATE 16 MAY 2025



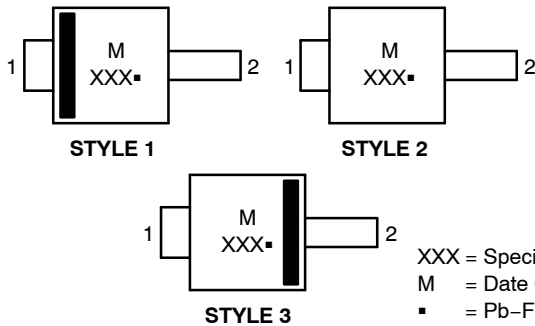
**RECOMMENDED MOUNTING FOOTPRINT**

\*For additional information on our Pb-Free Strategy and Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.85	1.00	1.15
A1	0.00	0.05	0.10
b	0.40	0.55	0.69
b1	0.70	0.85	1.00
c	0.10	0.18	0.25
D	1.75	1.90	2.05
E	1.75	1.96	2.18
H	3.60	3.75	3.90
L	1.20	1.35	1.50
L1	0.50	0.65	0.80
L2	0.50 REF		

- NOTES:
- DIMENSIONING AND TOLERANCING AS PER ASME Y14.5M, 2018.
  - CONTROLLING DIMENSION: MILLIMETERS.
  - DIMENSION D & E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

**GENERIC MARKING DIAGRAMS\***



STYLE 1:  
PIN 1. CATHODE  
2. ANODE

STYLE 2:  
PIN 1. ANODE OR CATHODE  
2. CATHODE OR ANODE (BI-DIRECTIONAL)

STYLE 3:  
PIN 1. ANODE  
2. CATHODE

XXX = Specific Device Code  
M = Date Code  
▪ = Pb-Free Package

\*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>POWERMITE 1.90x1.96x1.00</b>	<b>PAGE 1 OF 1</b>

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