

MURHD560T4, MURHD560W1T4

Preferred Device

MEGAHERTZ™ Power Rectifier

Features and Benefits

- Ultrafast 30 Nanosecond Recovery Times
- 175°C Operating Junction Temperature
- High Temperature Glass Passivated Junction
- High Voltage Capability to 600 Volts
- These are Pb-Free Devices

Applications

- Power Supplies
- Inverters
- Free Wheeling Diodes

Mechanical Characteristics

- Case: Epoxy, Molded
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Weight: 0.4 g (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- ESD Ratings: Machine Model = C (>400 V)
Human Body Model = 3B (>8000 V)

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 (Rated V_R , $T_C = 159^\circ\text{C}$)	$I_{F(AV)}$	5.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	50	A
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-65 to +175	°C

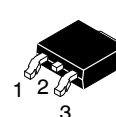
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



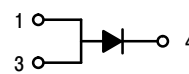
ON Semiconductor®

<http://onsemi.com>

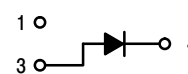
ULTRAFAST RECTIFIER 5.0 AMPERES 600 VOLTS



DPAK
CASE 369C
STYLES 3, 8

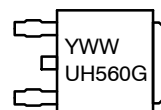


STYLE 3

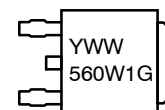


STYLE 8

MARKING DIAGRAMS



STYLE 3



STYLE 8

UH560 = MURHD560T4
560W1 = MURHD560W1T4
Y = Year
WW = Work Week
G = Pb-Free Package

ORDERING INFORMATION

Device	Package	Shipping†
MURHD560T4G	DPAK (Pb-Free)	2500 / Tape & Reel
MURHD560W1T4G	DPAK (Pb-Free)	2500 / Tape & Reel

†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.

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

MURHD560T4, MURHD560W1T4

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	$^{\circ}\text{C/W}$
Maximum Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	49.5	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 2) ($I_F = 5.0$ Amps, $T_C = 25^{\circ}\text{C}$) ($I_F = 5.0$ Amps, $T_C = 125^{\circ}\text{C}$)	V_F	2.7 1.65	V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, $T_C = 25^{\circ}\text{C}$) (Rated dc Voltage, $T_C = 125^{\circ}\text{C}$)	I_R	10 70	μA
Maximum Reverse Recovery Time ($I_F = 1.0$ Amp, $di/dt = 50$ Amps/ μs , $V_R = 30$ V, $T_J = 25^{\circ}\text{C}$)	t_{rr}	30	ns

- Rating applies when surface mounted on a 1.5 mm FR4 PC board with a 1 oz. thick, 700 mm² Cu area.
- Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

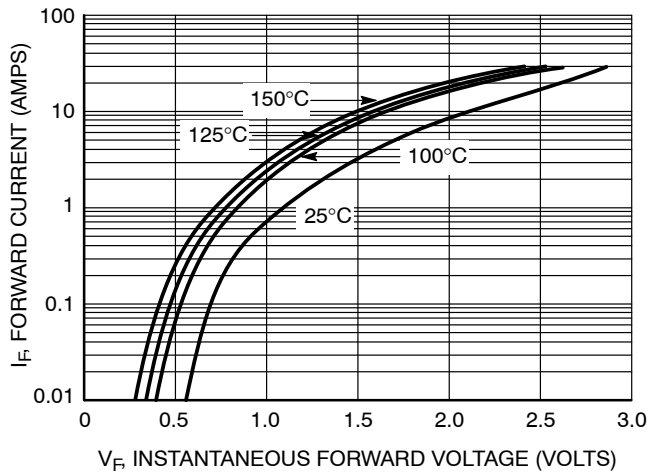


Figure 1. Typical Forward Voltage

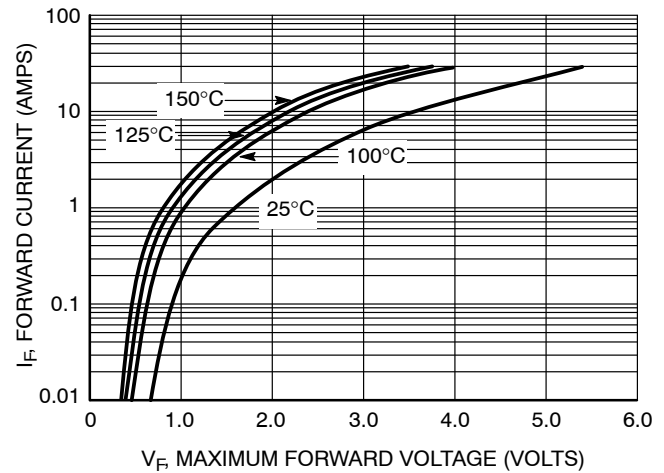


Figure 2. Maximum Forward Voltage

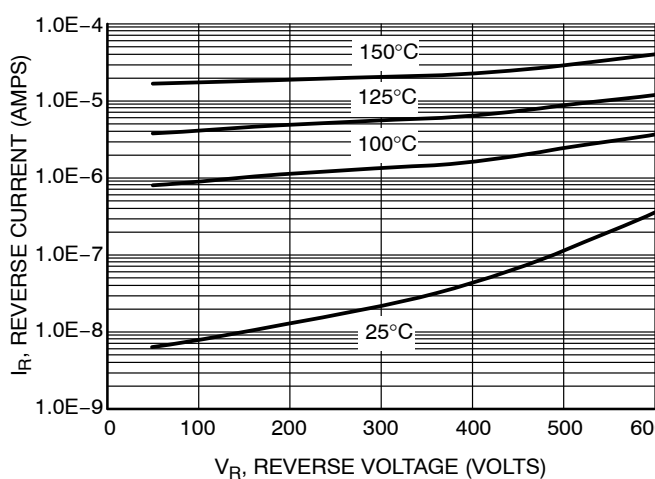


Figure 3. Typical Reverse Current

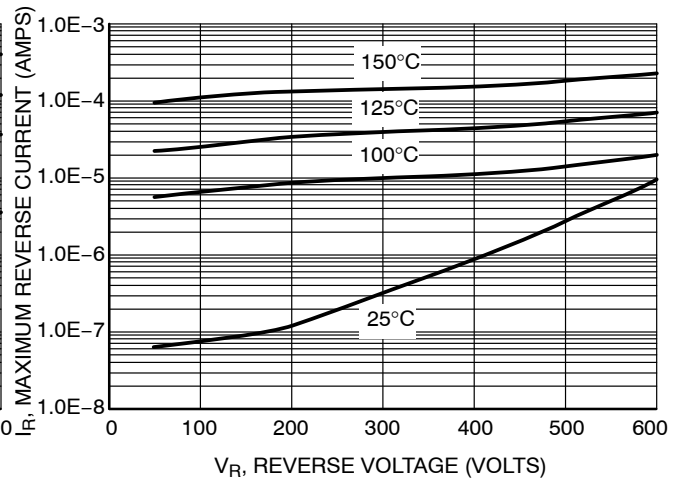


Figure 4. Maximum Reverse Current

MURHD560T4, MURHD560W1T4

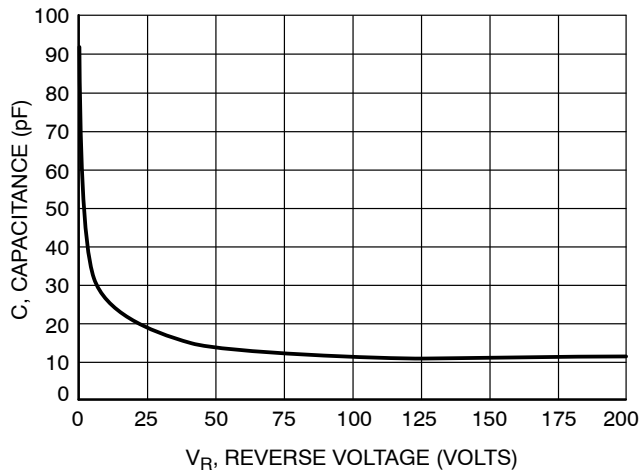


Figure 5. Typical Capacitance

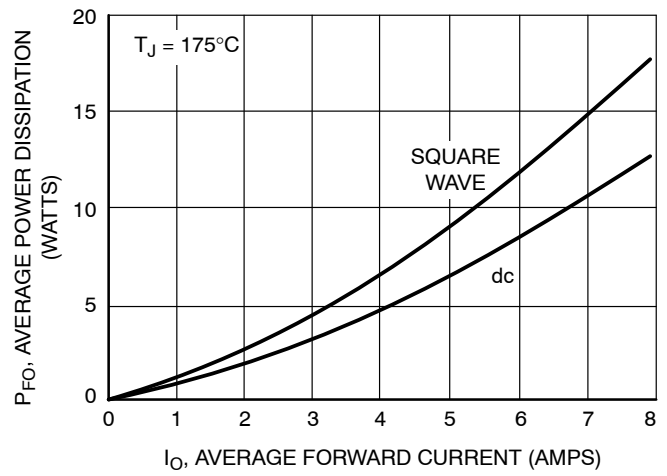


Figure 6. Forward Power Dissipation

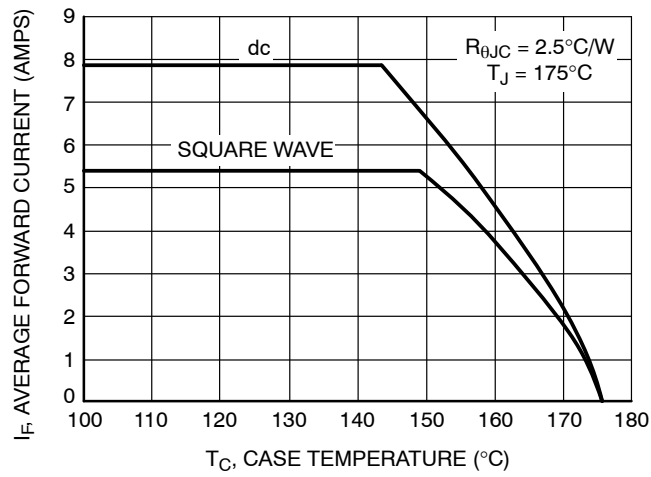


Figure 7. Current Derating

MURHD560T4, MURHD560W1T4

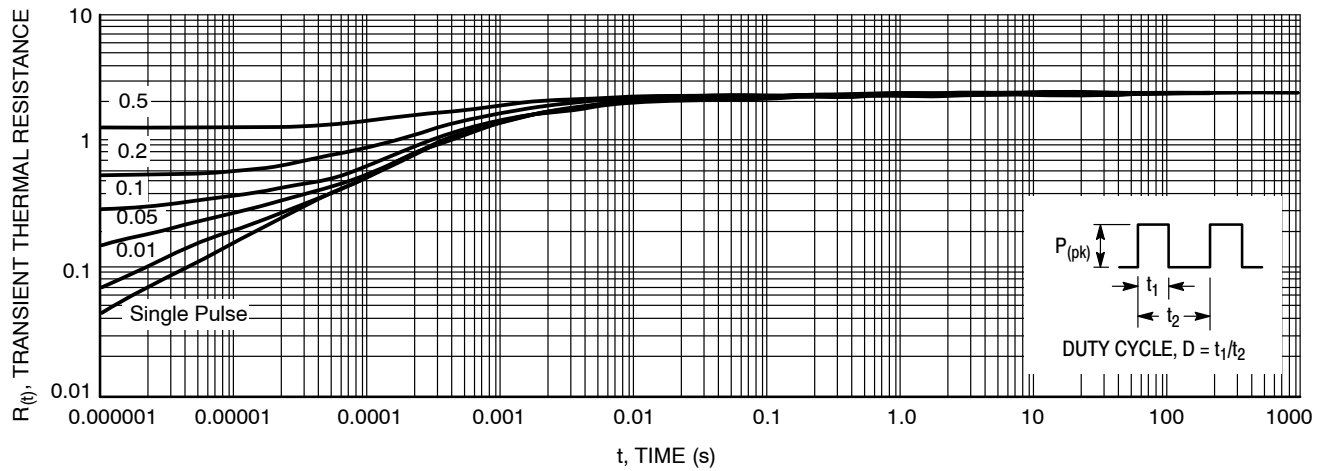


Figure 8. Thermal Response, Junction to Case

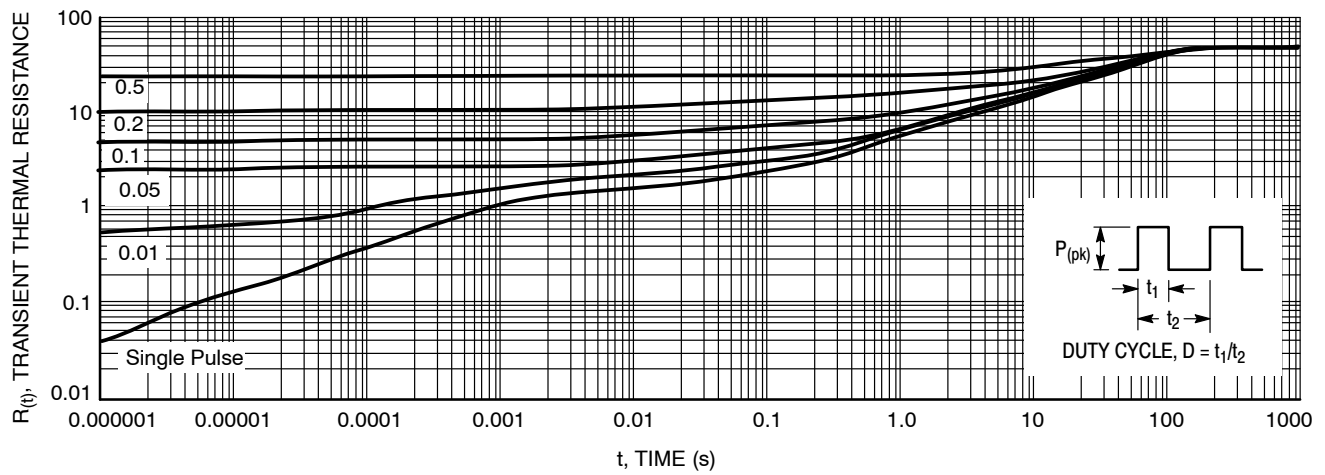


Figure 9. Thermal Response, Junction to Ambient

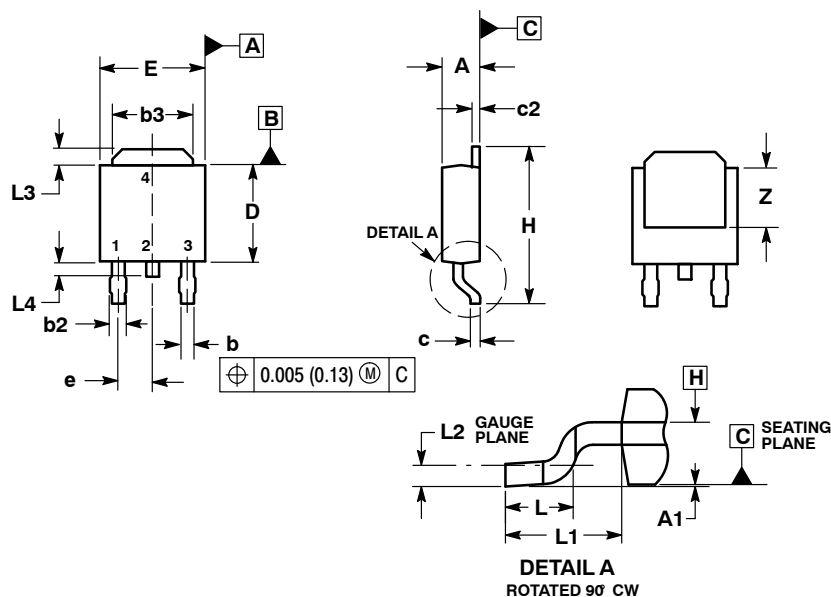
MURHD560T4, MURHD560W1T4

PACKAGE DIMENSIONS

DPAK (SINGLE GAUGE)

CASE 369C-01

ISSUE D

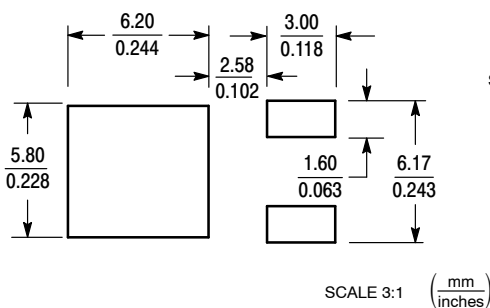


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. THERMAL PAD CONTOUR OPTIONAL WITHIN DIMENSIONS b3, L3 and Z.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.006 INCHES PER SIDE.
5. DIMENSIONS D AND E ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY.
6. DATUMS A AND B ARE DETERMINED AT DATUM PLANE H.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.086	0.094	2.18	2.38
A1	0.000	0.005	0.00	0.13
b	0.025	0.035	0.63	0.89
b2	0.030	0.045	0.76	1.14
b3	0.180	0.215	4.57	5.46
c	0.018	0.024	0.46	0.61
c2	0.018	0.024	0.46	0.61
D	0.235	0.245	5.97	6.22
E	0.250	0.265	6.35	6.73
e	0.090 BSC		2.29 BSC	
H	0.370	0.410	9.40	10.41
L	0.055	0.070	1.40	1.78
L1	0.108 REF		2.74 REF	
L2	0.020 BSC		0.51 BSC	
L3	0.035	0.050	0.89	1.27
L4	---	0.040	---	1.01
Z	0.155	---	3.93	---

SOLDERING FOOTPRINT*



STYLE 3:

- PIN 1. ANODE
- CATHODE
- ANODE
- CATHODE

STYLE 8:

- PIN 1. N/C
- CATHODE
- ANODE
- CATHODE

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

MEGAHERTZ is a trademark of Semiconductor Components Industries, LLC.

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: 81-3-5773-3850

ON Semiconductor Website: www.onsemi.com

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

For additional information, please contact your local
Sales Representative

MURHD560/D