

ON Semiconductor

Is Now

onsemi™

To learn more about onsemi™, please visit our website at
www.onsemi.com

onsemi and **onsemi** and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi** product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** 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. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** 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. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** 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 **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner. Other names and brands may be claimed as the property of others.

MURP20020CT, MURP20040CT



ON Semiconductor®

www.onsemi.com

POWERTAP II Ultrafast Switch-mode Power Rectifiers

These state-of-the-art POWERTAP II Ultrafast switch-mode power rectifiers are designed for use in switching power supplies, inverters, and as free wheeling diodes.

Features

- Dual Diode Construction
- Low Leakage Current
- Low Forward Voltage
- 175°C Operating Junction Temperature
- Labor Saving POWERTAP Package
- Pb-Free Packages are Available*

Mechanical Characteristics:

- Case: Epoxy, Molded with Metal Heatsink Base
- Weight: 80 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant
- Top Terminal Torque: 25 – 40 lb-in Max
- Base Plate Torques: See Procedure Given in the Package Outline Section

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}		V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R	300 400	
Average Rectified Forward Current @ $T_L = 150^\circ\text{C}$ – Per Device @ $T_L = 125^\circ\text{C}$ – Per Leg	$I_{F(AV)}$	200 100	A
Peak Repetitive Surge Current Per Leg (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FRM}	200	A
Nonrepetitive Peak Surge Current Per Leg (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	800	A
Operating Junction Temperature	T_J	-55 to +175	°C
Storage Temperature	T_{stg}	-55 to +150	°C

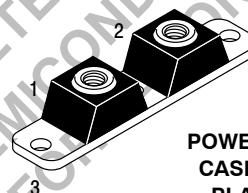
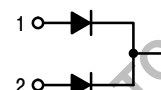
THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Thermal Resistance, Junction-to-Lead	$R_{\theta JC}$	0.45	°C/W

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.

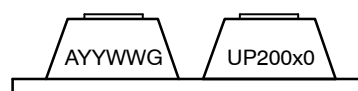
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ULTRAFAST RECTIFIERS 200 AMPERES, 200–400 VOLTS



POWERTAP II
CASE 357C
PLASTIC

MARKING DIAGRAM



A = Assembly Location
YY = Year
WW = Work Week
G = Pb-Free Package
UP200x0 = Device Code
x = 2 or 4

ORDERING INFORMATION

Device	Package	Shipping
MURP20020CT	POWERTAP II	25 Units/Tray
MURP20020CTG	POWERTAP II (Pb-Free)	25 Units/Tray
MURP20040CT	POWERTAP II	25 Units/Tray
MURP20040CTG	POWERTAP II (Pb-Free)	25 Units/Tray

MURP20020CT, MURP20040CT

ELECTRICAL CHARACTERISTICS (Per Leg)

Rating	Symbol	MURP20020CT	MURP20040CT	Unit
Instantaneous Forward Voltage (Note 1) ($I_F = 100\text{ A}$, $T_C = +25^\circ\text{C}$) ($I_F = 200\text{ A}$, $T_C = 25^\circ\text{C}$) ($I_F = 100\text{ A}$, $T_C = 125^\circ\text{C}$)	V_F	1.00 1.10 0.95	1.30 1.75 1.15	V
Instantaneous Reverse Current (Note 1) (Rated DC Voltage, $T_C = 125^\circ\text{C}$) (Rated DC Voltage, $T_C = 25^\circ\text{C}$)	i_R	1000 150	500 50	μA
Maximum Reverse Recovery Time ($I_F = 1.0\text{ A}$, $di/dt = 50\text{ A}/\mu\text{s}$)	t_{rr}	50	75	ns

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.

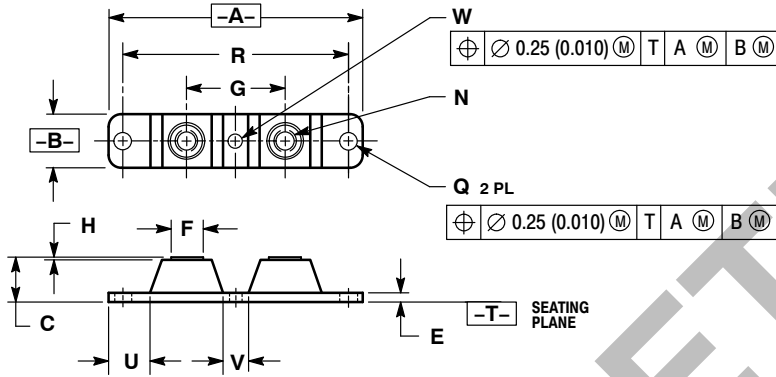
1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

OBSOLETE
THIS DEVICE IS OBSOLETE
PLEASE CONTACT YOUR ON SEMICONDUCTOR
REPRESENTATIVE FOR INFORMATION

MURP20020CT, MURP20040CT

PACKAGE DIMENSIONS

POWERTAP II CASE 357C-03 ISSUE E



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. TERMINAL PENETRATION: 5.97 (0.235) MAXIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	3.450	3.635	87.63	92.33
B	0.700	0.810	17.78	20.57
C	0.615	0.640	15.63	16.26
E	0.120	0.130	3.05	3.30
F	0.435	0.445	11.05	11.30
G	1.370	1.380	34.80	35.05
H	0.007	0.030	0.18	0.76
N	1/4-20UNC-2B	1/4-20UNC-2B		
Q	2 PL			
R	3.150 BSC		80.01 BSC	
U	0.600	0.630	15.24	16.00
V	0.330	0.375	8.39	9.52
W	0.170	0.190	4.32	4.82

ON Semiconductor and the are registered trademarks of Semiconductor Components Industries, LLC (SCILLC) or its subsidiaries in the United States and/or other countries. SCILLC owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of SCILLC's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. 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