

MURP20020CT, MURP20040CT

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	
MURP20020CT			
MURP20040CT			
Average Rectified Forward Current @ $T_L = 150^\circ\text{C}$ – Per Device	$I_{F(AV)}$	200	A
@ $T_L = 125^\circ\text{C}$ – Per Leg		100	
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.

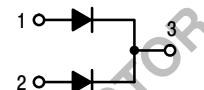
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



ON Semiconductor®

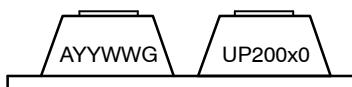
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ULTRAFAST RECTIFIERS 200 AMPERES, 200–400 VOLTS



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

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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.

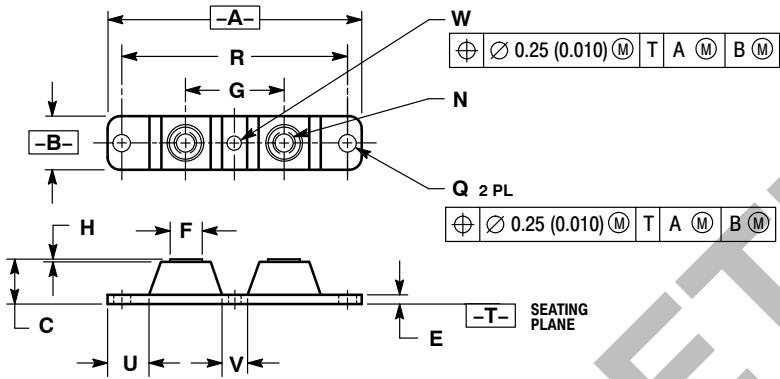
1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

OBSOLETE
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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	0.270	0.285	6.86	7.23
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

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