

MURP20020CT, MURP20040CT

Preferred Devices

POWERTAP™ II Ultrafast SWITCHMODE™ Power Rectifiers

These state-of-the-art POWERTAP II Ultrafast SWITCHMODE 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 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.

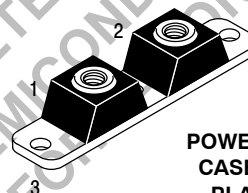
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



ON Semiconductor®

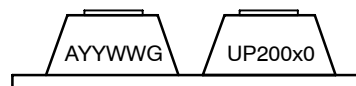
<http://onsemi.com>

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 |

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

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 |

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

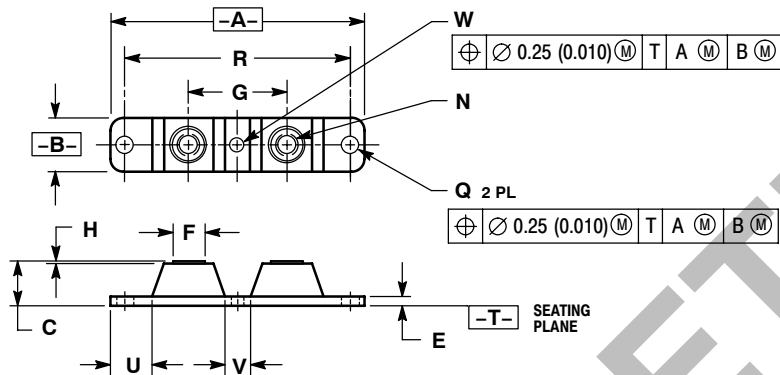
OBSOLETE

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 | 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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