

Preliminary Data Sheet

POWERTAP II Ultrafast SWITCHMODE™ Power Rectifiers

MURP20020CT
MURP20040CT

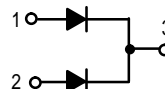
Motorola Preferred Devices

... designed for use in switching power supplies, inverters, and as free wheeling diodes. These state-of-the-art devices have the following features:

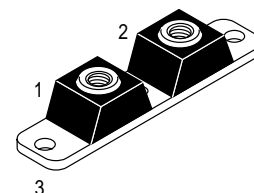
- Dual Diode Construction
- Low Leakage Current
- Low Forward Voltage
- 175°C Operating Junction Temperature
- Labor Saving POWERTAP Package

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
- Shipped 25 units per foam
- Marking: UP20020



**ULTRAFAST
RECTIFIERS
200 AMPERES
200–400 VOLTS**



**CASE 357C-03
POWERTAP II**

MAXIMUM RATINGS

Rating	Symbol	MURP20020CT	MURP20040CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200	400	Volts
Average Rectified Forward Current (Rated V_R)	$I_{F(AV)}$	200 ($T_C = 130^\circ\text{C}$) 100 ($T_C = 130^\circ\text{C}$)	200 ($T_C = 100^\circ\text{C}$) 100 ($T_C = 100^\circ\text{C}$)	Amps Per Device Per Leg
Peak Repetitive Forward Current, Per Leg (Rated V_R , Square Wave, 20 kHz), $T_C = 95^\circ\text{C}$	I_{FRM}	200	200	Amps
Nonrepetitive Peak Surge Current Per Leg (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	800	800	Amps
Operating Junction Temperature	T_J	-55 to +175	-55 to +175	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	-55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS PER LEG

Rating	Symbol	Max		Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.45	0.45	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS PER LEG

Instantaneous Forward Voltage (1) ($i_F = 100$ Amps, $T_C = +25^\circ\text{C}$) ($i_F = 200$ Amps, $T_C = 25^\circ\text{C}$) ($i_F = 100$ Amps, $T_C = 125^\circ\text{C}$)	V_F	1.00 1.10 0.95	1.30 1.75 1.15	Volts
Instantaneous Reverse Current (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 ($I_F = 1.0$ Amp, $di/dt = 50$ Amps/ μs)	t_{rr}	50	75	ns

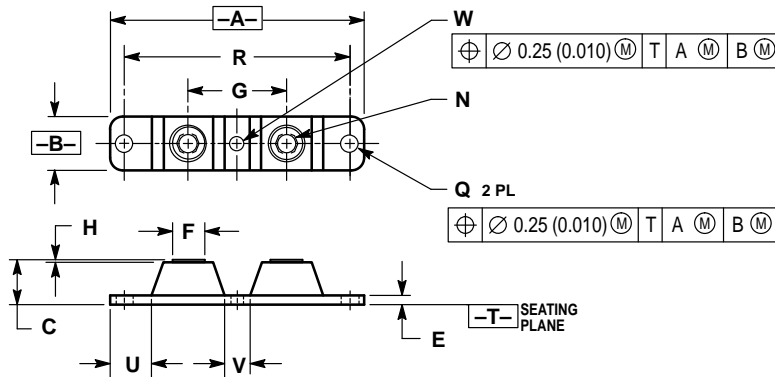
(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

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

PACKAGE DIMENSIONS



- 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	15.53	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	7.32
R	31.50 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

CASE 357C-03
 ISSUE C

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