

# MURHF860CT

Preferred Device

## SWITCHMODE™ Power Rectifier

These state-of-the-art SWITCHMODE power rectifiers are designed for use in switching power supplies, inverters and as free wheeling diodes.

### Features

- Ultrafast 35 Nanosecond Recovery Times
- 150°C Operating Junction Temperature
- Electrically Isolated. No Isolation Hardware Required
- Epoxy Meets UL 94 V-0 @ 0.125 in
- High Temperature Glass Passivated Junction
- High Voltage Capability to 600 V
- Low Leakage Specified @ 150°C Case Temperature
- Pb-Free Package is Available\*

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max for 10 Seconds

### MAXIMUM RATINGS (Per Leg)

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 $V_R$ , $T_C = 120^\circ\text{C}$ ) Total Device	$I_{F(AV)}$	4.0 8.0	A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20 kHz, $T_C = 120^\circ\text{C}$ )	$I_{FM}$	16	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	100	A
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-65 to +150	°C

### THERMAL CHARACTERISTICS (Per Leg)

Rating	Symbol	Value	Unit
Max Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	4.1	°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.

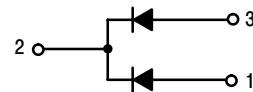
\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



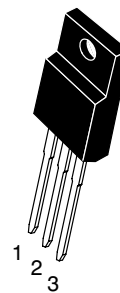
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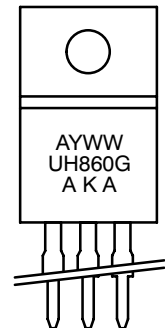
## ULTRAFAST RECTIFIER 8.0 AMPERES, 600 VOLTS



### MARKING DIAGRAM



ISOLATED TO-220  
CASE 221D  
STYLE 3



A = Assembly Location  
Y = Year  
WW = Work Week  
UH860 = Device Code  
G = Pb-Free Package  
AKA = Diode Polarity

### ORDERING INFORMATION

Device	Package	Shipping
MURHF860CT	TO-220	50 Units/Rail
MURHF860CTG	TO-220 (Pb-Free)	50 Units/Rail

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

# MURHF860CT

## ELECTRICAL CHARACTERISTICS (Per Leg)

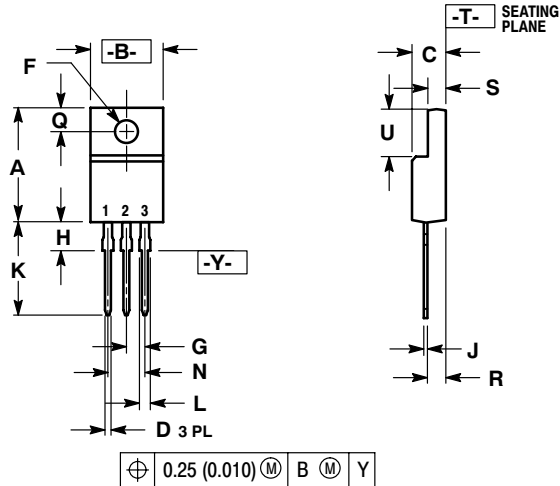
Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1) ( $i_F = 4.0\text{ A}$ , $T_C = 150^\circ\text{C}$ ) ( $i_F = 4.0\text{ A}$ , $T_C = 25^\circ\text{C}$ )	$v_F$	2.5 2.8	V
Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, $T_C = 150^\circ\text{C}$ ) (Rated DC Voltage, $T_C = 25^\circ\text{C}$ )	$i_R$	500 10	$\mu\text{A}$
Maximum Reverse Recovery Time ( $I_F = 1.0\text{ A}$ , $di/dt = 50\text{ A}/\mu\text{s}$ )	$t_{rr}$	35	ns

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

# MURHF860CT

## PACKAGE DIMENSIONS

TO-220 FULLPAK  
CASE 221D-03  
ISSUE J



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH
3. 221D-01 THRU 221D-02 OBSOLETE, NEW STANDARD 221D-03.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.617	0.635	15.67	16.12
B	0.392	0.419	9.96	10.63
C	0.177	0.193	4.50	4.90
D	0.024	0.039	0.60	1.00
F	0.116	0.129	2.95	3.28
G	0.100 BSC		2.54 BSC	
H	0.118	0.135	3.00	3.43
J	0.018	0.025	0.45	0.63
K	0.503	0.541	12.78	13.73
L	0.048	0.058	1.23	1.47
N	0.200 BSC		5.08 BSC	
Q	0.122	0.138	3.10	3.50
R	0.099	0.117	2.51	2.96
S	0.092	0.113	2.34	2.87
U	0.239	0.271	6.06	6.88

**STYLE 3:**

- PIN 1. ANODE
2. CATHODE
3. ANODE

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**MURHF860CT/D**