MURH860CT

Preferred Device

MEGAHERTZ™ Power Rectifier

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

Features

- Ultrafast 35 Nanosecond Recovery Times
- 175°C Operating Junction Temperature
- Popular TO-220 Package
- 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
- Current Derating @ Both Case and Ambient Temperatures
- 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°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°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 +175	°C

THERMAL CHARACTERISTICS (Per Leg)

Rating	Symbol	Value	Unit
Max. Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	3.0	°C/W

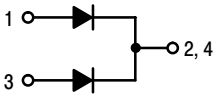
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

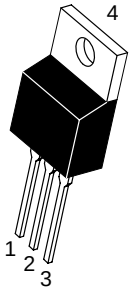
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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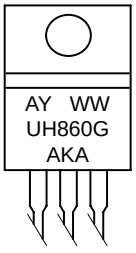
ULTRAFAST RECTIFIER 8.0 AMPERES, 600 VOLTS





TO−220AB
CASE 221A
PLASTIC

MARKING DIAGRAM



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

ORDERING INFORMATION

Device	Package	Shipping
MURH860CT	TO−220	50 Units/Rail
MURH860CTG	TO−220 (Pb−Free)	50 Units/Rail

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

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ELECTRICAL CHARACTERISTICS (Per Leg)

Rating	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1) (i_F = 4.0 A, T_C = 150°C) (i_F = 4.0 A, T_C = 25°C)	v_F	 2.5 2.8	V
Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, T_C = 150°C) (Rated DC Voltage, T_C = 25°C)	i_R	 500 10	μA
Maximum Reverse Recovery Time (I_F = 1.0 A, di/dt = 50 A/μs)	t_{rr}	35	ns

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%

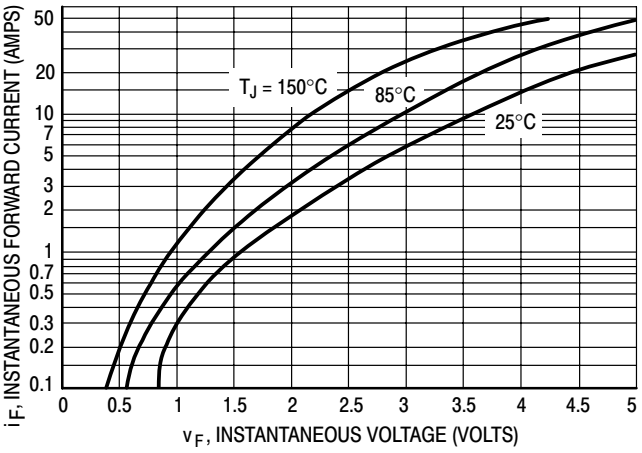


Figure 1. Typical Forward Voltage, Per Leg

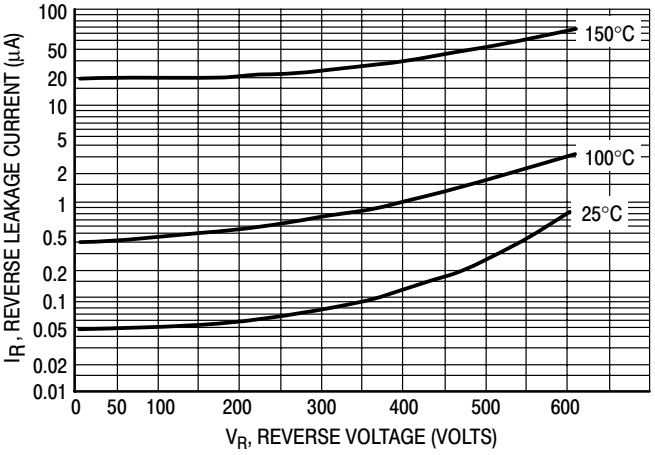


Figure 2. Typical Reverse Leakage Current, Per Leg

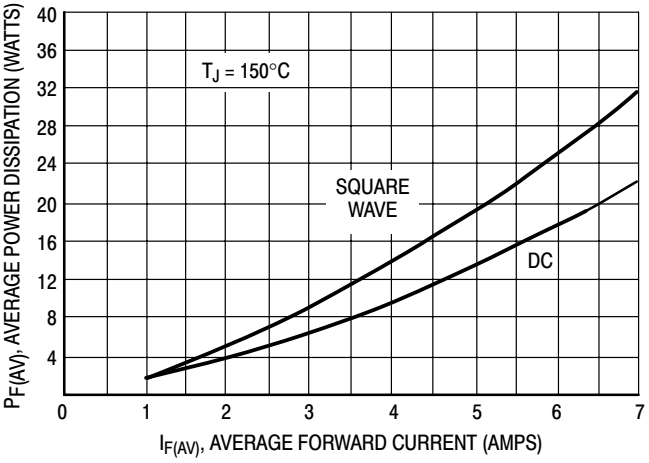


Figure 3. Typical Forward Dissipation, Per Leg

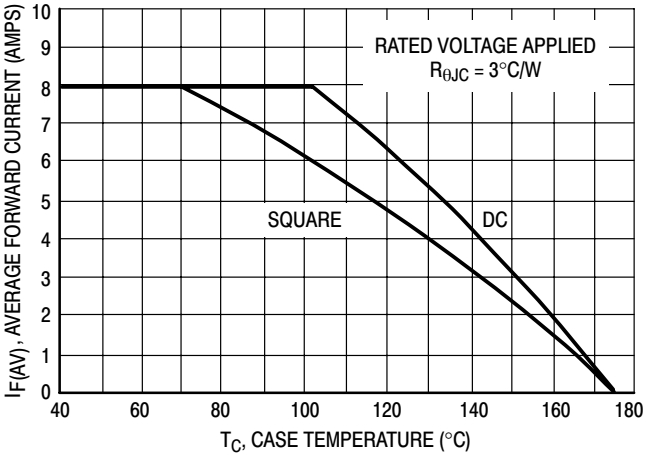


Figure 4. Typical Current Derating, Case, Per Leg

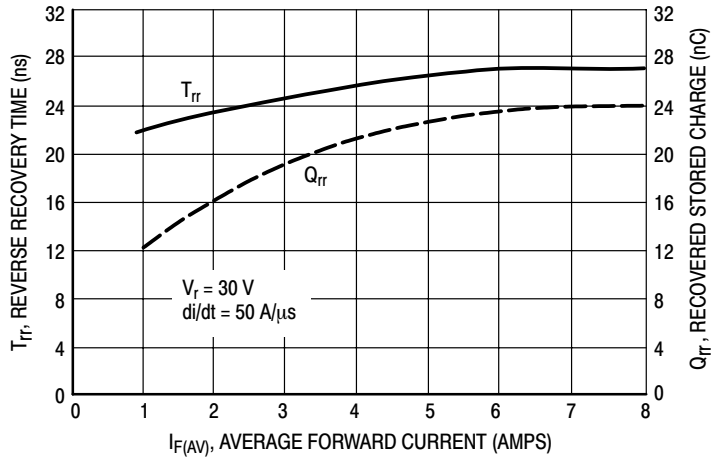


Figure 5. Typical Recovery Characteristics

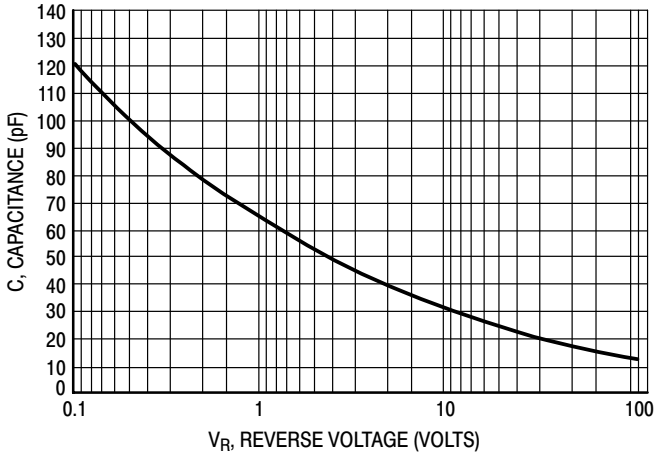
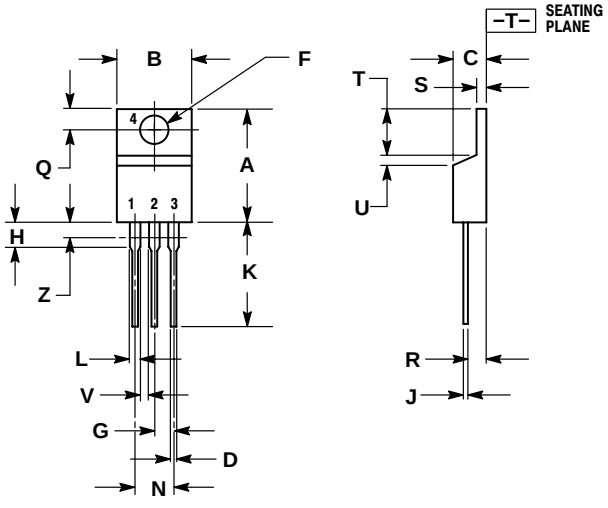


Figure 6. Typical Capacitance, Per Leg

MURH860CT

PACKAGE DIMENSIONS

TO−220 THREE−LEAD
TO−220AB
CASE 221A−09
ISSUE AA



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

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