

MURH840CT

Preferred Device

MEGAHERTZ™ Power Rectifier

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

- Ultrafast 28 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-220 Package
- Epoxy Meets UL94, V_O @ 1/8"
- High Temperature Glass Passivated Junction
- High Voltage Capability to 400 Volts
- 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
- Shipped 50 units per plastic tube
- Marking: UH840

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	400	V
Average Rectified Forward Current (Rated V _R , T _C = 120°C) Per Leg Total Device	I _{F(AV)}	4.0 8.0	A
Peak Repetitive Forward Current per Diode Leg (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
Controlled Avalanche Energy	W _{AVAIL}	20	mJ
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-65 to +175	°C

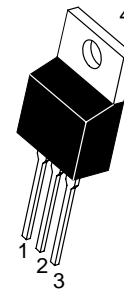
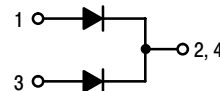
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur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



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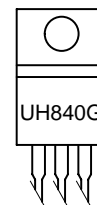
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**ULTRAFAST
RECTIFIER
8.0 AMPERES
400 VOLTS**



TO-220AB
CASE 221A
PLASTIC

MARKING DIAGRAM



UH840 = Device Code
G = Pb-Free Package

ORDERING INFORMATION

Device	Package	Shipping
MURH840CT	TO-220	50 Units/Rail
MURH840CTG	TO-220 (Pb-Free)	50 Units/Rail

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

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THERMAL CHARACTERISTICS (Per Diode Leg)

Rating	Symbol	Value	Unit
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Maximum Instantaneous Forward Voltage (Note 1.) ($i_F = 4.0$ Amps, $T_C = 150^{\circ}C$) ($i_F = 4.0$ Amps, $T_C = 25^{\circ}C$)	V_F	1.9 2.2	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_C = 150^{\circ}C$) (Rated dc Voltage, $T_C = 25^{\circ}C$)	i_R	500 10	μA
Maximum Reverse Recovery Time ($I_F = 1.0$ Amp, $di/dt = 50$ Amps/ μs)	t_{rr}	28	ns

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

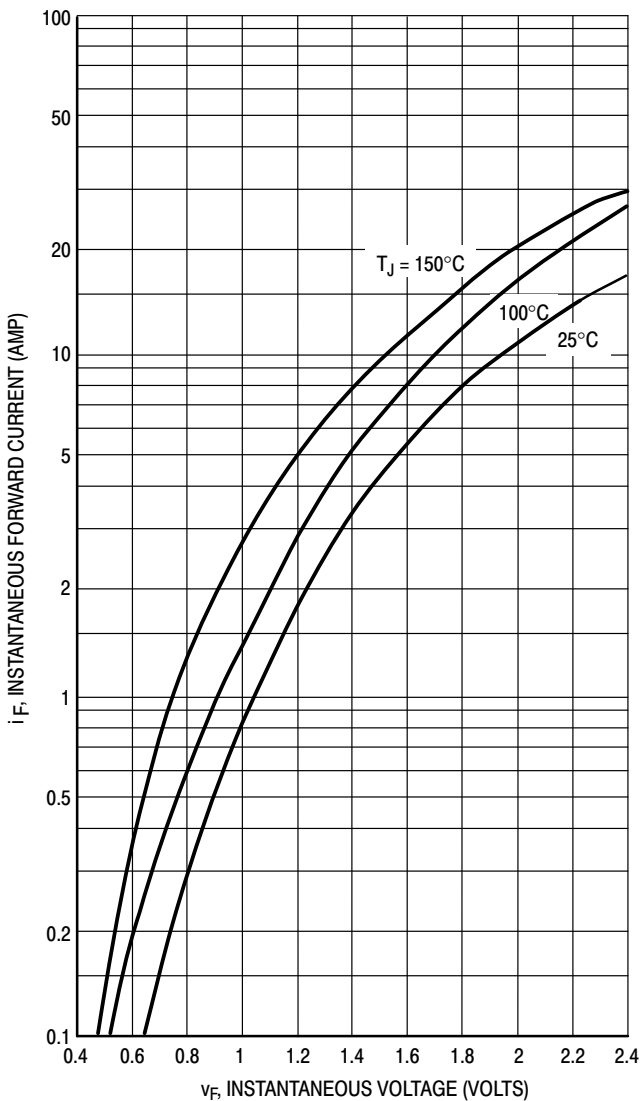


Figure 1. Typical Forward Voltage

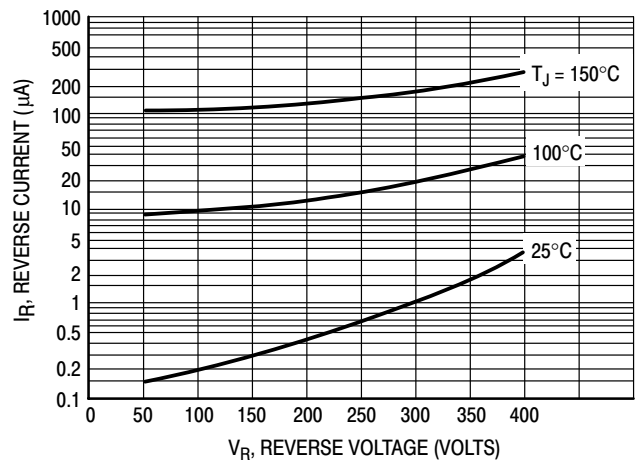


Figure 2. Typical Reverse Current, Per Leg

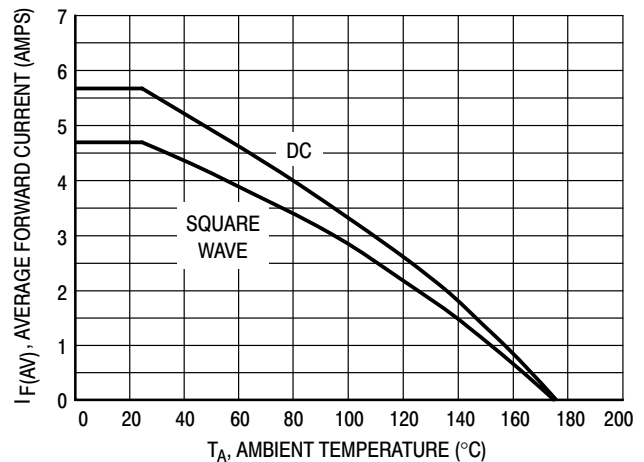


Figure 3. Forward Current Derating, Ambient, Per Leg

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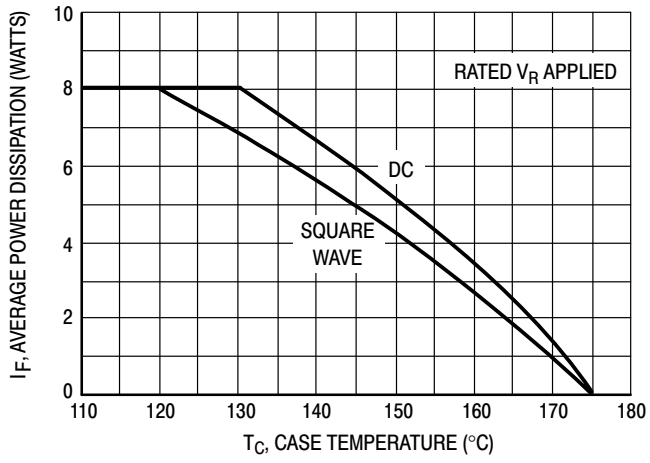


Figure 4. Current Derating, Case, Per Leg

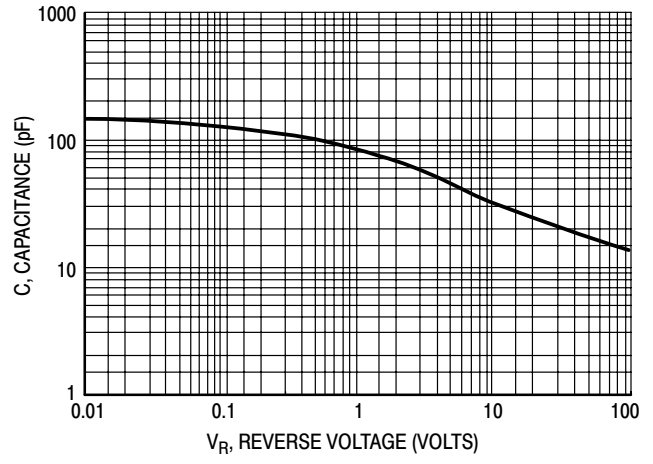


Figure 5. Typical Capacitance, Per Leg

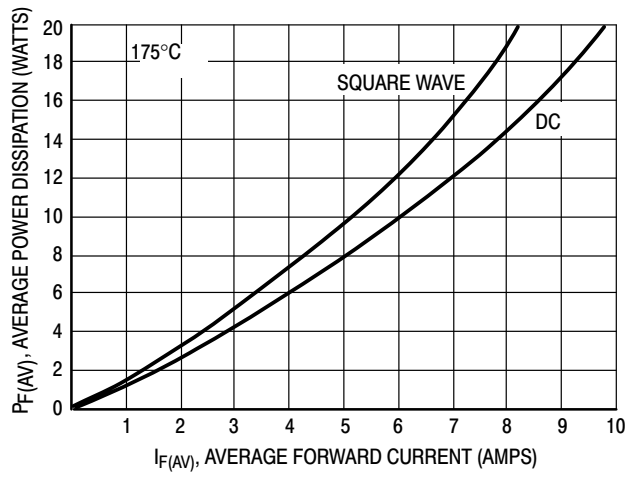
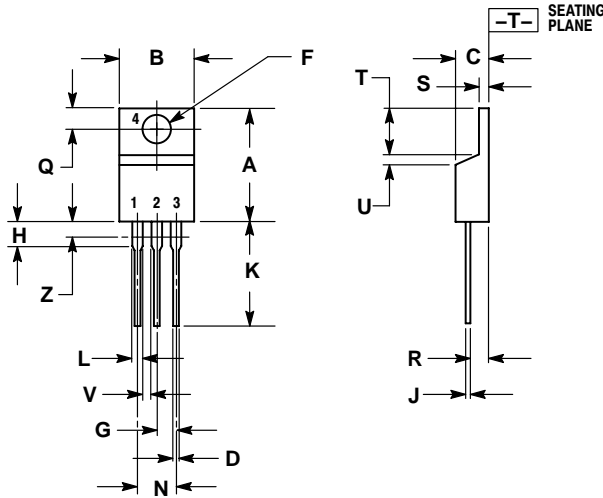


Figure 6. Forward Power Dissipation, Per Leg

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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.

DIM	INCHES		MILLIMETERS	
	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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