

MURHB860CT

Preferred Device

MEGAHERTZ™ Power Rectifier

D²PAK Power Surface Mount Package

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

Features

- Package Designed for Power Surface Mount Applications
- Ultrafast 35 Nanosecond Recovery Times
- 175°C Operating Junction Temperature
- 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
- Short Heat Sink Tab Manufactured – Not Sheared!
- Similar in Size to Industry Standard TO-220 Package
- Pb-Free Packages are Available

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.7 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface 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} | 8.0 | 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 |

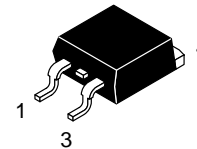
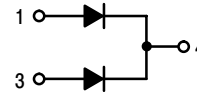
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur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



ON Semiconductor®

<http://onsemi.com>

ULTRAFAST RECTIFIER 8.0 AMPERES, 600 VOLTS



D²PAK
CASE 418B
STYLE 3

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† |
|---------------|---------------------------------|-----------------|
| MURHB860CT | D ² PAK | 50 Units/Rail |
| MURHB860CTG | D ² PAK (Pb-Free) | 50 Units/Rail |
| MURHB860CTT4 | D ² PAK | 800/Tape & Reel |
| MURHB860CTT4G | D ² PAK (Pb-Free) | 800/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

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THERMAL CHARACTERISTICS (Per Leg)

| Rating | Symbol | Value | Unit |
|---|-----------------|-------|----------------------|
| Maximum Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 3.0 | $^{\circ}\text{C/W}$ |
| Maximum Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 50 | $^{\circ}\text{C/W}$ |

ELECTRICAL CHARACTERISTICS (Per Leg)

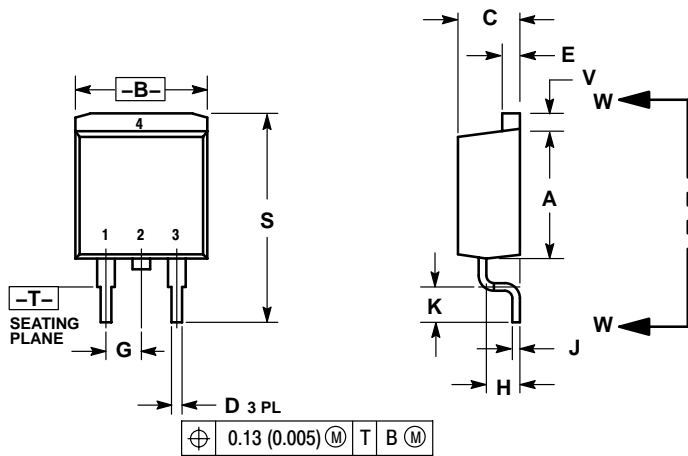
| Characteristic | Symbol | Max | Unit |
|---|----------|------------|---------------|
| Maximum Instantaneous Forward Voltage (Note 1) ($I_F = 4.0\text{ A}$, $T_C = 150^{\circ}\text{C}$) ($I_F = 4.0\text{ A}$, $T_C = 25^{\circ}\text{C}$) | V_F | 2.5 2.8 | V |
| Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, $T_C = 150^{\circ}\text{C}$) (Rated DC Voltage, $T_C = 25^{\circ}\text{C}$) | i_R | 500 10 | μA |
| 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 μs , Duty Cycle $\leq 2.0\%$

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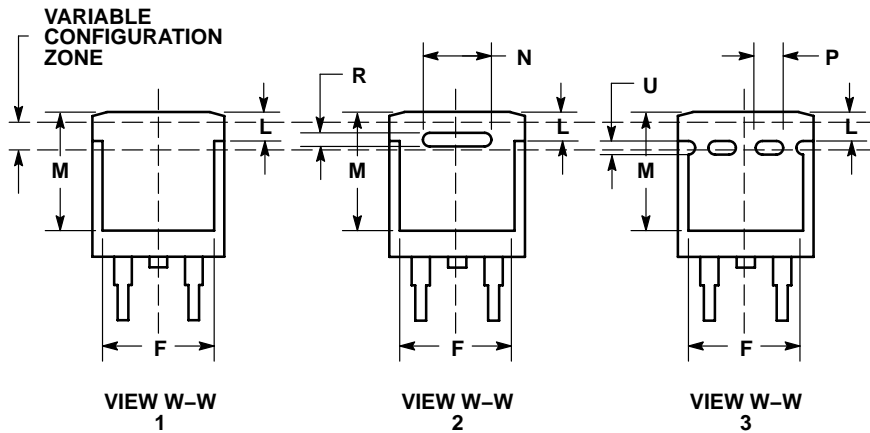
PACKAGE DIMENSIONS

D²PAK 3
CASE 418B-04
ISSUE J



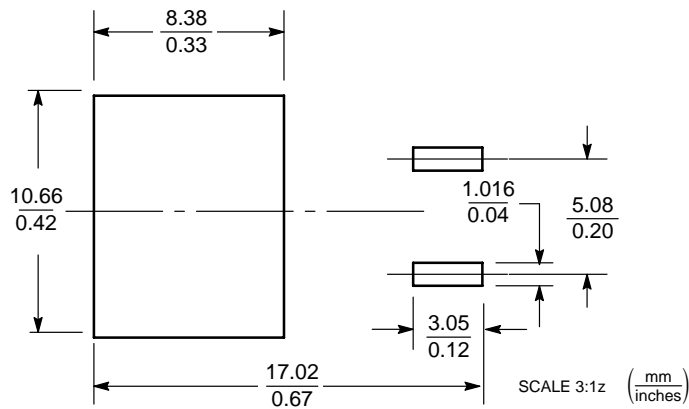
- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. 418B-01 THRU 418B-03 OBSOLETE, NEW STANDARD 418B-04.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.340 | 0.380 | 8.64 | 9.65 |
| B | 0.380 | 0.405 | 9.65 | 10.29 |
| C | 0.160 | 0.190 | 4.06 | 4.83 |
| D | 0.020 | 0.035 | 0.51 | 0.89 |
| E | 0.045 | 0.055 | 1.14 | 1.40 |
| F | 0.310 | 0.350 | 7.87 | 8.89 |
| G | 0.100 | BSC | 2.54 | BSC |
| H | 0.080 | 0.110 | 2.03 | 2.79 |
| J | 0.018 | 0.025 | 0.46 | 0.64 |
| K | 0.090 | 0.110 | 2.29 | 2.79 |
| L | 0.052 | 0.072 | 1.32 | 1.83 |
| M | 0.280 | 0.320 | 7.11 | 8.13 |
| N | 0.197 | REF | 5.00 | REF |
| P | 0.079 | REF | 2.00 | REF |
| R | 0.039 | REF | 0.99 | REF |
| S | 0.575 | 0.625 | 14.60 | 15.88 |
| V | 0.045 | 0.055 | 1.14 | 1.40 |



- STYLE 3:
- PIN 1. ANODE
 - CATHODE
 - ANODE
 - CATHODE


SOLDERING FOOTPRINT*



*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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