



**THE DATASHEET OF  
MURHB860CTT4**



# MURHB860CT

## Power Rectifier

### D<sup>2</sup>PAK Power Surface Mount Package

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

#### 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
- 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
- Pb-Free Packages are Available

#### MAXIMUM RATINGS (Per Leg)

| Rating  | Symbol                          | Value       | Unit |
|---|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                            | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 600         | V    |
| Average Rectified Forward Current<br>(Rated $V_R$ , $T_C = 120^\circ\text{C}$ ) Total Device                      | $I_{F(AV)}$                     | 4.0<br>8.0  | A    |
| Peak Repetitive Forward Current<br>(Rated $V_R$ , Square Wave, 20 kHz,<br>$T_C = 120^\circ\text{C}$ )             | $I_{FM}$                        | 8.0         | A    |
| Non-Repetitive Peak Surge Current<br>(Surge Applied at Rated Load<br>Conditions Halfwave, Single Phase,<br>60 Hz) | $I_{FSM}$                       | 100         | A    |
| Operating Junction and Storage<br>Temperature Range   | $T_J, T_{stg}$                  | -65 to +175 | °C   |

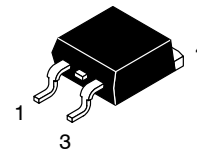
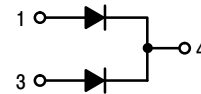
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



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### ULTRAFAST RECTIFIER 8.0 AMPERES, 600 VOLTS



D<sup>2</sup>PAK  
CASE 418B  
STYLE 3

#### MARKING DIAGRAM



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

#### ORDERING INFORMATION

| Device        | Package                         | Shipping†       |
|---------------|---------------------------------|-----------------|
| MURHB860CT    | D <sup>2</sup> PAK              | 50 Units/Rail   |
| MURHB860CTG   | D <sup>2</sup> PAK<br>(Pb-Free) | 50 Units/Rail   |
| MURHB860CTT4  | D <sup>2</sup> PAK              | 800/Tape & Reel |
| MURHB860CTT4G | D <sup>2</sup> PAK<br>(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.

# MURHB860CT

## THERMAL CHARACTERISTICS (Per Leg)

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

## ELECTRICAL CHARACTERISTICS (Per Leg)

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

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

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

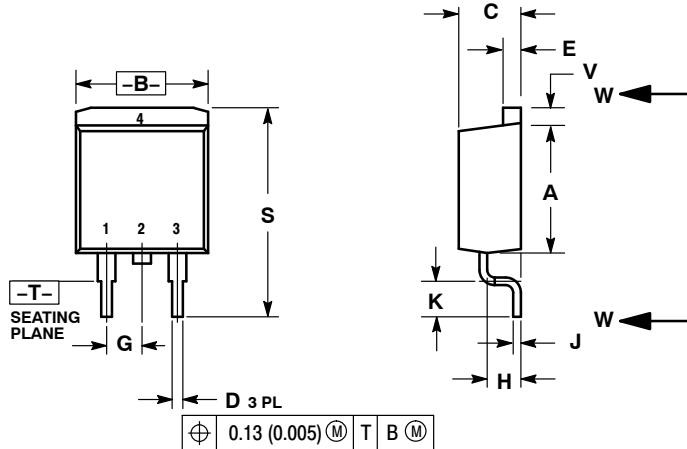
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**D<sup>2</sup>PAK 3**  
CASE 418B-04  
ISSUE L

DATE 17 FEB 2015

SCALE 1:1

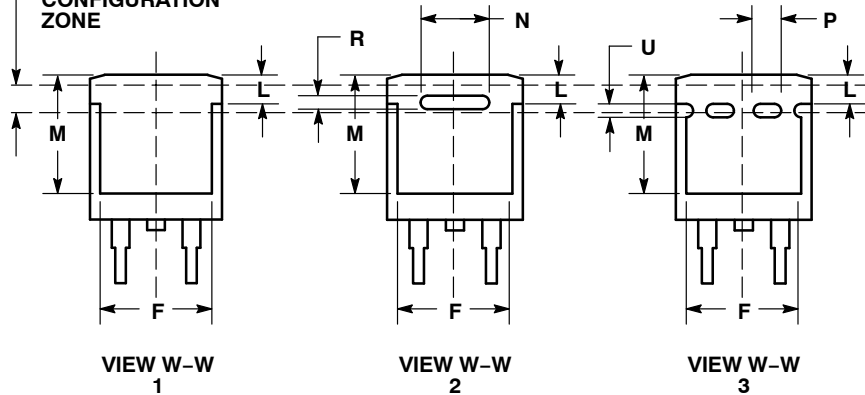


**NOTES:**

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  |

**VARIABLE CONFIGURATION ZONE**



- |  |   |   |  |   |  |
|--|---|---|--|---|--|
| <b>STYLE 1:</b><br>PIN 1. BASE<br>2. COLLECTOR<br>3. EMITTER<br>4. COLLECTOR | <b>STYLE 2:</b><br>PIN 1. GATE<br>2. DRAIN<br>3. SOURCE<br>4. DRAIN | <b>STYLE 3:</b><br>PIN 1. ANODE<br>2. CATHODE<br>3. ANODE<br>4. CATHODE | <b>STYLE 4:</b><br>PIN 1. GATE<br>2. COLLECTOR<br>3. EMITTER<br>4. COLLECTOR | <b>STYLE 5:</b><br>PIN 1. CATHODE<br>2. ANODE<br>3. CATHODE<br>4. ANODE | <b>STYLE 6:</b><br>PIN 1. NO CONNECT<br>2. CATHODE<br>3. ANODE<br>4. CATHODE |
|--|---|---|--|---|--|

**MARKING INFORMATION AND FOOTPRINT ON PAGE 2**

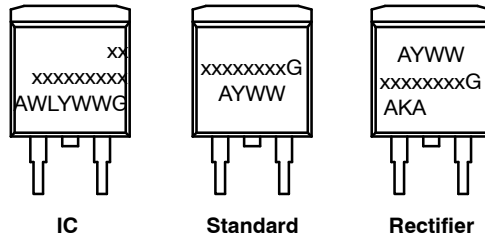
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**D<sup>2</sup>PAK 3**  
CASE 418B-04  
ISSUE L

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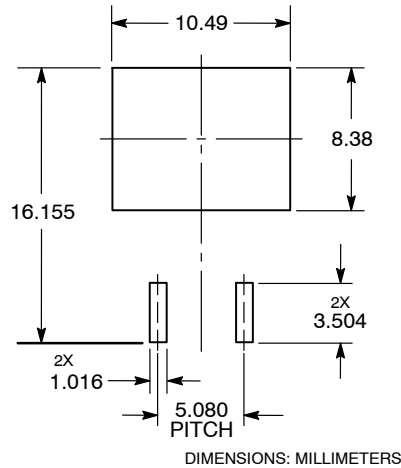
**GENERIC  
MARKING DIAGRAM\***



- xx = Specific Device Code
- A = Assembly Location
- WL = Wafer Lot
- Y = Year
- WW = Work Week
- G = Pb-Free Package
- AKA = Polarity Indicator

\*This information is generic. Please refer to device data sheet for actual part marking.  
Pb-Free indicator, "G" or microdot "▪", may or may not be present.

**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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