

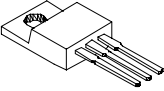
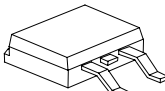
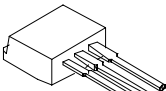
Technical Data
Data Sheet 2914 Rev. E

Applications:

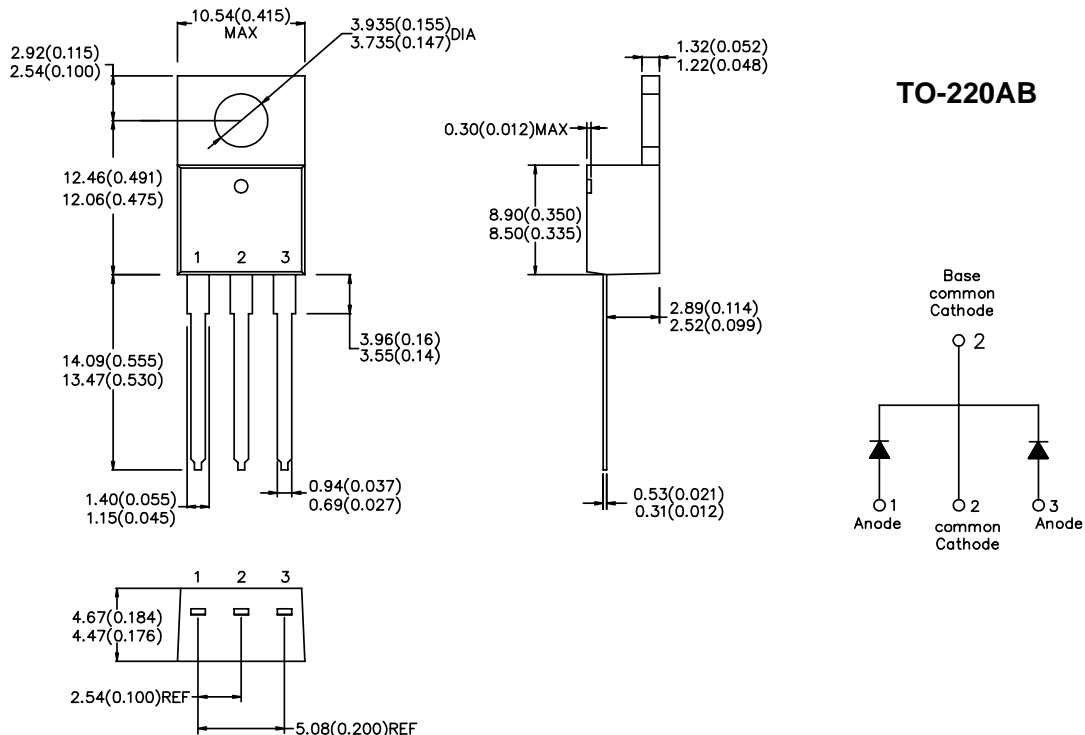
- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

Features:

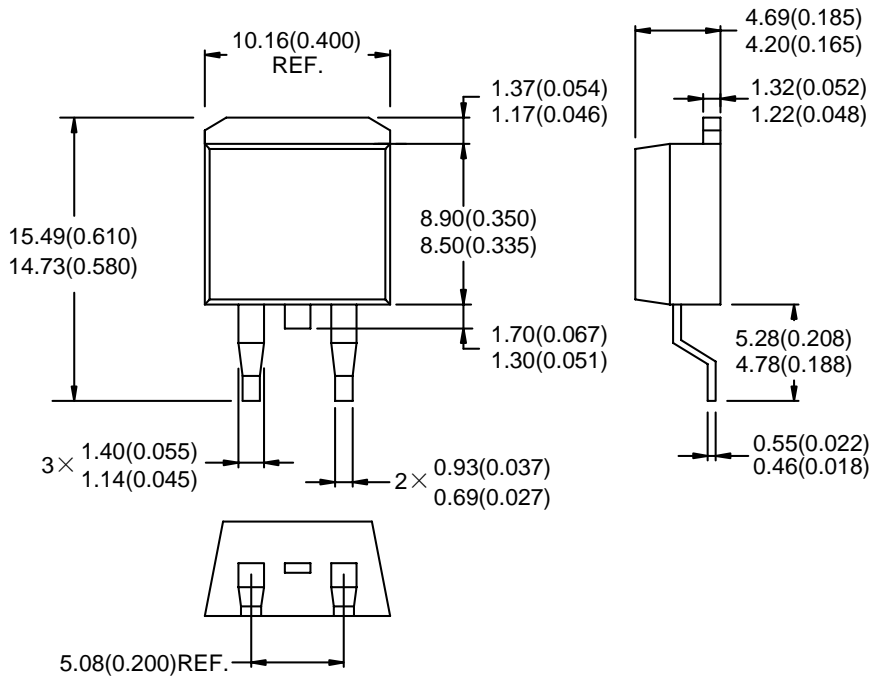
- 150 °C T_J operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

| Case styles | | |
|--|---|--|
| <p>MBR20...CT</p>  <p>TO-220AB</p> | <p>MBRB20...CT</p>  <p>D²PAK</p> | <p>MBR20...CT-1</p>  <p>TO-262</p> |

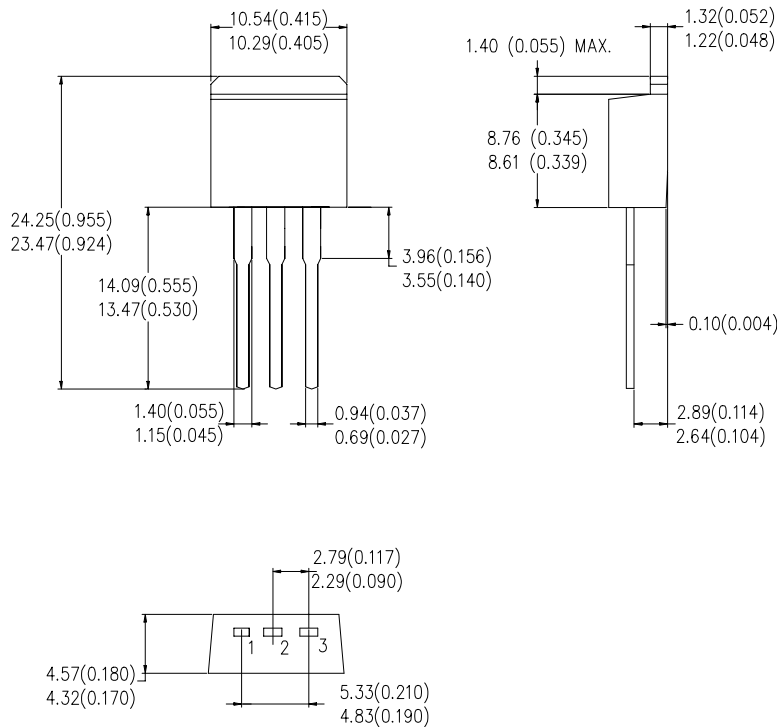
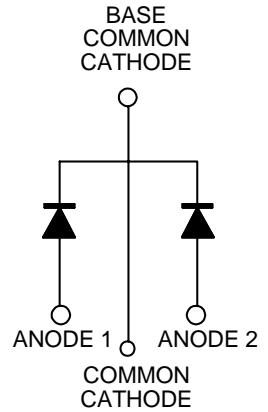
Mechanical Dimensions: In mm/ inches



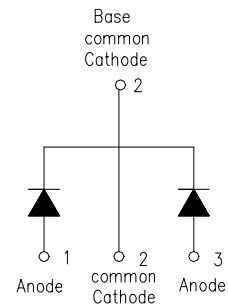
Technical Data
Data Sheet 2914 Rev. E



D²PAK



TO-262



Technical Data
Data Sheet 2914 Rev. E

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|--|-------------|---|----------------|-------|
| Peak Inverse Voltage | V_{RWM} | - | 80 | V |
| | | | 90 | |
| | | | 100 | |
| Max. Average Forward | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 133^\circ\text{C}$, rectangular wave form | 10(Per leg) | A |
| | | | 20(Per device) | |
| Max. Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | 8.3 ms, half Sine pulse | 150 | A |
| Peak Repetitive Reverse Surge Current (per leg) | I_{RRM} | 2.0 μs , 1.0KHz | 0.5 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Max. | Units |
|--------------------------------------|----------|---|--|------------------|
| Max. Forward Voltage Drop (per leg)* | V_{F1} | @ 10A, Pulse, $T_J = 25^\circ\text{C}$ | 0.85 | V |
| | | @ 20 A, Pulse, $T_J = 25^\circ\text{C}$ | 0.95 | |
| | V_{F2} | @ 10 A, Pulse, $T_J = 125^\circ\text{C}$ | 0.75 | V |
| | | @ 20 A, Pulse, $T_J = 125^\circ\text{C}$ | 0.85 | |
| Max. Reverse Current (per leg)* | I_{R1} | @ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$ | 1.00 | mA |
| | | I_{R2} | @ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$ | |
| Max. Voltage Rate of Change | dv/dt | - | 10,000 | V/ μs |

* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|------------------------------------|--------------|---------------------|--------------------|
| Max. Junction Temperature | T_J | - | -55 to +150 | $^\circ\text{C}$ |
| Max. Storage Temperature | T_{stg} | - | -55 to +150 | $^\circ\text{C}$ |
| Maximum Thermal Resistance Junction to Case (per leg) | $R_{\theta JC}$ | DC operation | 2.0 | $^\circ\text{C/W}$ |
| Approximate Weight | wt | - | 1.9 | g |
| Mounting Torque | T_M | - | 6(Min.) 12(Max.) | Kg-cm |
| Case Style | TO-220AB D ² PAK TO-262 | | | |

Technical Data
Data Sheet 2914 Rev. E

DISCLAIMER:

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.