

**SENSITRON**  
**SEMICONDUCTOR**

**MBR4080/90/100CT**  
**MBRB4080/90/100CT**  
**MBR4080/90/100CT-1**

Technical Data  
Data Sheet 3208, Rev. B

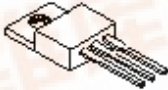
**MBR40...CT/MBRB40...CT/MBR40...CT-1**  
**SCHOTTKY RECTIFIER**

**Applications:**

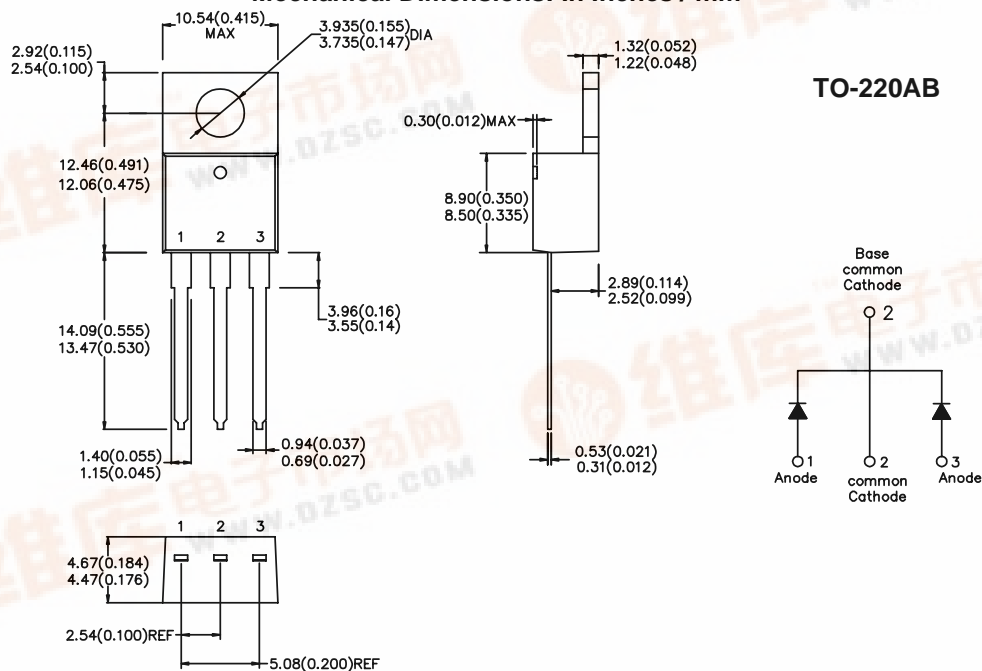
- Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection

**Features:**

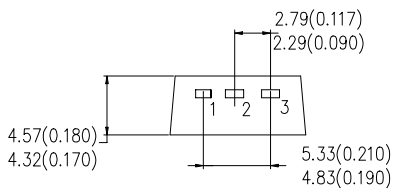
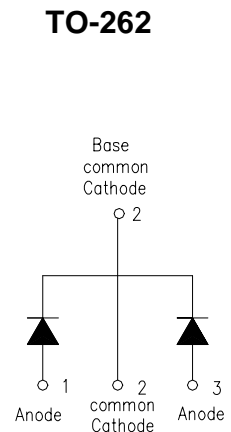
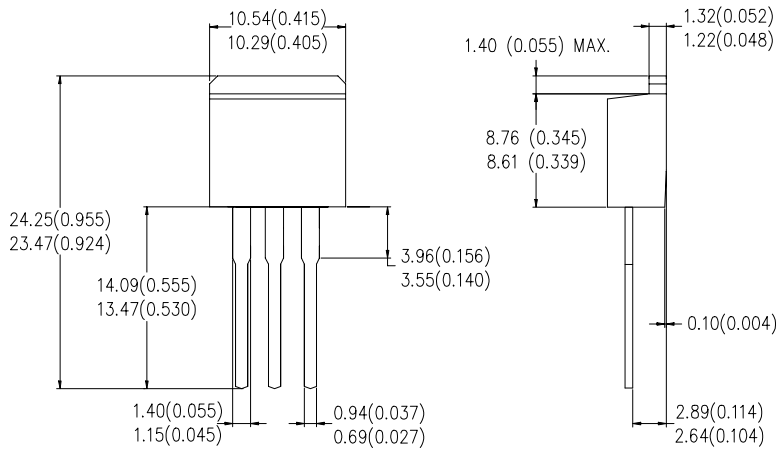
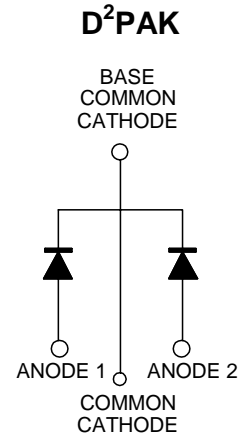
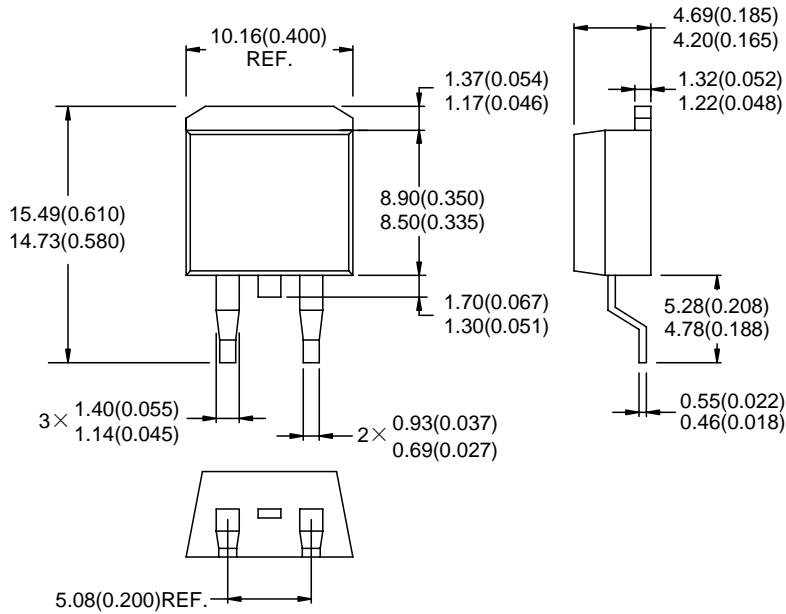
- 150 °C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Case styles		
 <b>TO-220AB</b>	 <b>D<sup>2</sup>PAK</b>	 <b>TO-262</b>

Mechanical Dimensions: In Inches / mm



Data Sheet 3208, Rev. B



Data Sheet 3208, Rev. B

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units	
Peak Inverse Voltage	$V_{RWM}$	-	80	MBR4080CT MBRB4080CT MBR4080CT-1	V
			90	MBR4090CT MBRB4090CT MBR4090CT-1	
			100	MBR40100CT MBRB40100CT MBR40100CT-1	
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C = 135^\circ\text{C}$ , rectangular wave form	20(Per leg) 40(Per device)	A	
Peak Repetitive Forward Current(per leg)	$I_{FRM}$	Rated $V_R$ square wave, 20KHz $T_C = 133^\circ\text{C}$	20	A	
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	Surge applied at rated load conditions halfwave, single phase,60Hz	280	A	

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 20 A, Pulse, $T_J = 25^\circ\text{C}$	0.88	V
		@ 40 A, Pulse, $T_J = 25^\circ\text{C}$	1.02	
	$V_{F2}$	@ 20 A, Pulse, $T_J = 125^\circ\text{C}$	0.74	V
		@ 40 A, Pulse, $T_J = 125^\circ\text{C}$	0.88	
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	1.0	mA
		$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	6.0
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	400	pF
Typical Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ $\mu\text{s}$

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

Data Sheet 3208, Rev. B

**Thermal-Mechanical Specifications:**

<b>Characteristics</b>	<b>Symbol</b>	<b>Condition</b>	<b>Specification</b>	<b>Units</b>
Max. Junction Temperature	$T_J$	-	-55 to +150	°C
Max. Storage Temperature	$T_{stg}$	-	-55 to +150	°C
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	2.0	°C/W
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta JA}$	DC operation	50	°C/W
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.50	°C/W
Approximate Weight	wt	-	2	g
Mounting Torque	$T_M$	-	6(Min.) 12(Max.)	Kg-cm
Case Style	TO-220AB D <sup>2</sup> PAK TO-262			

**SENSITRON**  
**SEMICONDUCTOR**

**MBR4080/90/100CT**  
**MBRB4080/90/100CT**  
**MBR4080/90/100CT-1**

Data Sheet 3208, Rev. B

**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.