

# MBR10150CTW

## SCHOTTKY BARRIER RECTIFIERS

**REVERSE VOLTAGE** – 150 Volts  
**FORWARD CURRENT** – 10 Amperes

### FEATURES

- Metal of silicon rectifier, majority carrier conduction
- Guard ring for transient protection
- Low power loss, high efficiency
- High surge & current capability, low  $V_F$
- Qualification is according to AEC-Q101 Rec\_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

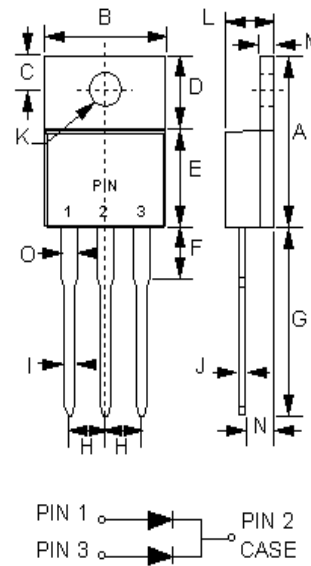
### APPLICATION

- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

### MECHANICAL DATA

- Package: JEDEC TO-220AB molded plastic
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free"
- Polarity: As marked on the body
- Marking Code: MBR10150CTW
- Weight: 1.927 grams (Approximate)
- Mounting Position: Any
- Max. mounting torque = 0.5N.m (5.1Kgf-cm)

### TO-220AB



TO-220AB		
DIM.	MIN.	MAX.
A	14.40	15.20
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	8.26	9.28
F	-	4.20
G	12.70	14.73
H	2.29	2.79
I	0.51	1.14
J	0.30	0.64
K	3.53 $\varnothing$	4.09 $\varnothing$
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
O	1.14	1.70

All Dimensions in millimeter

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

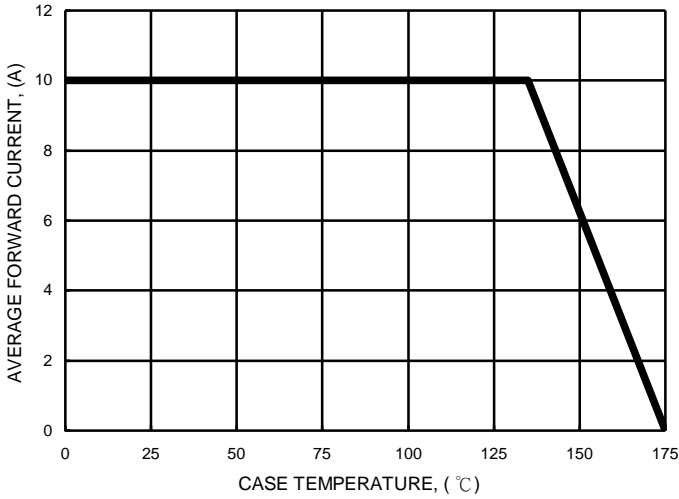
PARAMETER	SYMBOL	VALUE	UNIT
Maximum Repetitive Peak Reverse Voltage @ $I_R=100\mu A$	$V_{RRM}$	150	V
Maximum DC Blocking Voltage @ $I_R=100\mu A$	$V_{DC}$	150	V
Average Rectified Output Current @ $T_C=135^\circ C$	$I_F$	10	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	120	A
Maximum Forward Voltage $I_F=5A@ T_J=25^\circ C$ $I_F=5A@ T_J=125^\circ C$ $I_F=10A@ T_J=25^\circ C$ $I_F=10A@ T_J=125^\circ C$	$V_F$	0.92 0.75 1.00 0.85	V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_J=25^\circ C$ $T_J=125^\circ C$	$I_R$	8 2	$\mu A$ mA
Typical Junction Capacitance per Element (Note 5)	$C_j$	110	pF
Typical Thermal Resistance Junction to Case (Note 6)	$R_{\theta JC}$	5	$^\circ C/W$
Typical thermal resistance Junction to Lead (Note 6)	$R_{\theta JL}$	7	$^\circ C/W$
Typical thermal resistance Junction to Lead (Note 6)	$R_{\theta Ja}$	14	$^\circ C/W$
Operating Junction Temperature Range	$T_J$	-55 to +175	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55 to +175	$^\circ C$

### Notes:

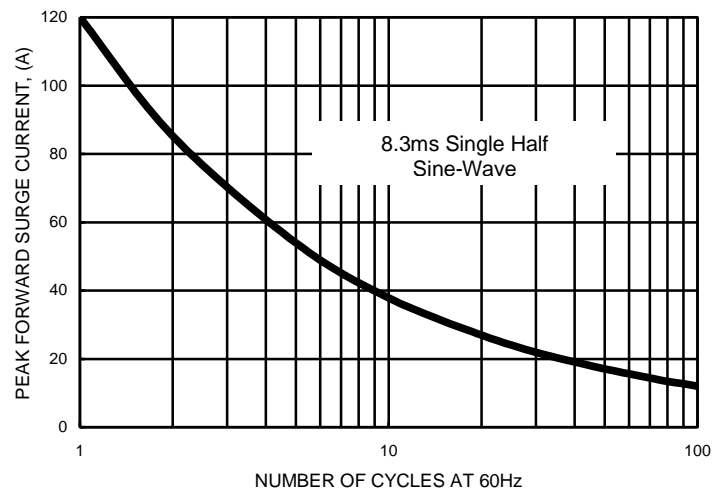
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 300us Pulse Width, 2% Duty Cycle.
5. Measured at 1.0MHz and applied reverse voltage of 4.0  $V_{DC}$ .
6. Thermal Resistance Junction to Case, device mounted on fin-type heatsink 23 x 20 x 8.6 mm.

**RATING AND CHARACTERISTIC CURVES**  
**MBR10150CTW**

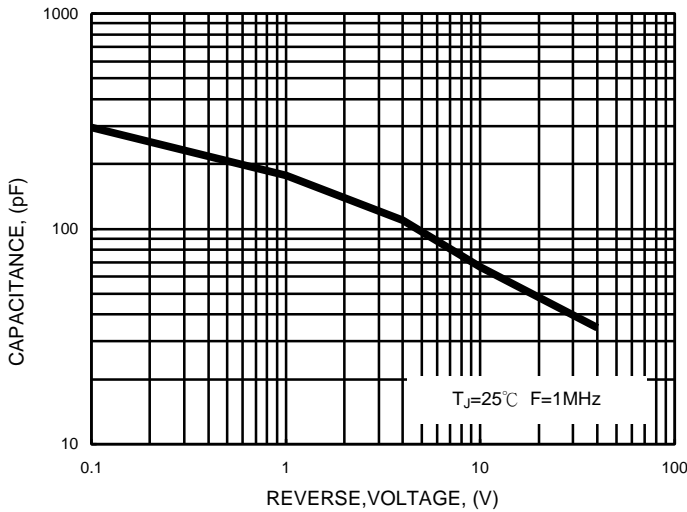
**FIG.1- FORWARD CURRENT DERATING CURVE**



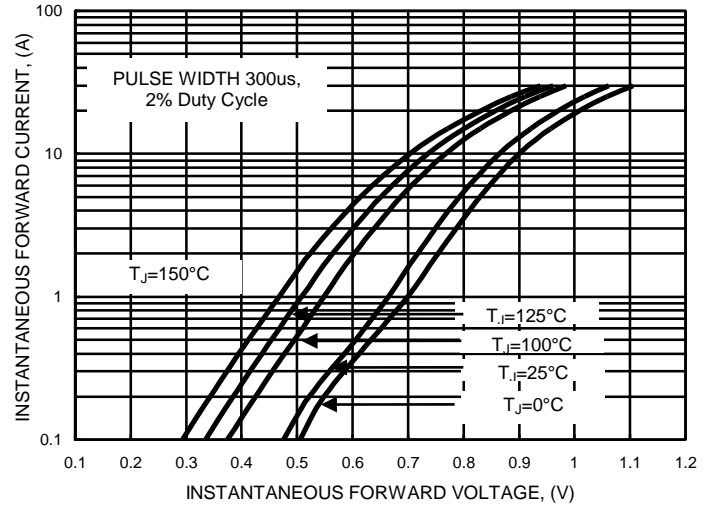
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



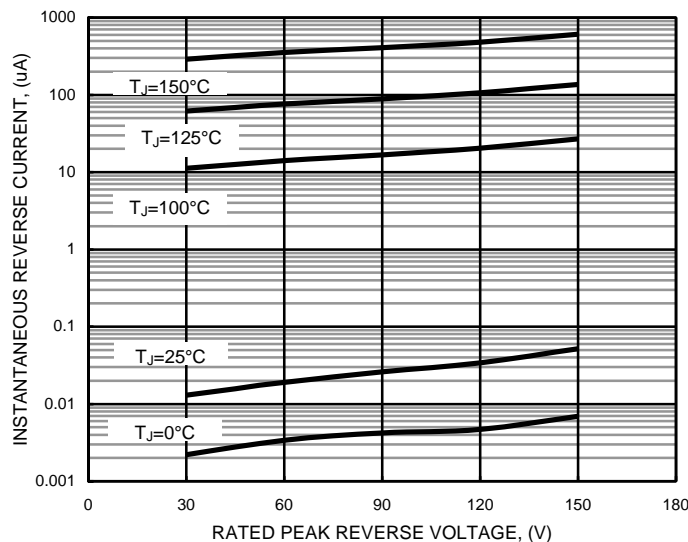
**FIG.3- TYPICAL JUNCTION CAPACITANCE**



**FIG.4- TYPICAL FORWARD CHARACTERISTICS**



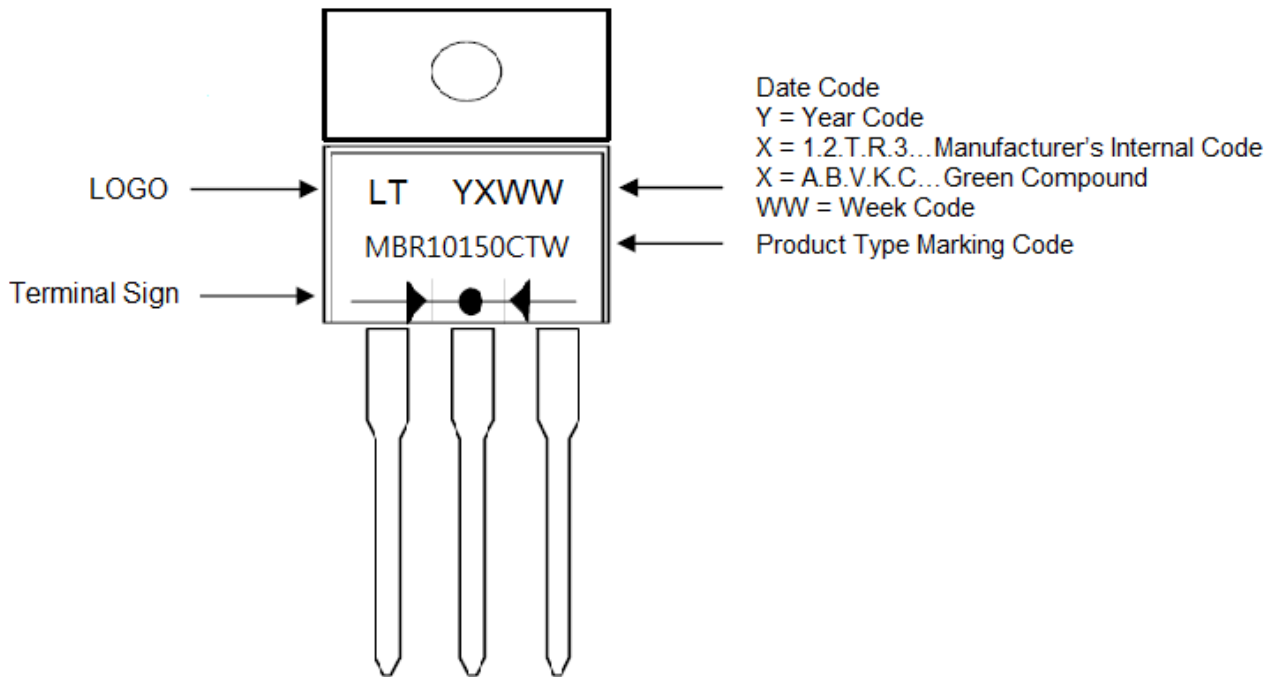
**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



### Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
MBR10150CTW	TO-220AB	50 pcs	Tube

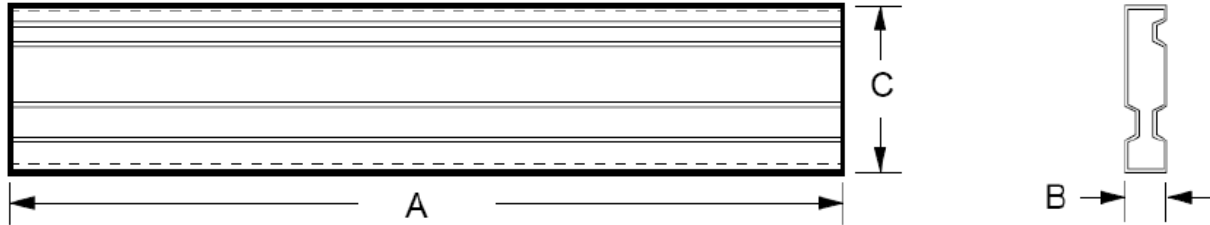
### Marking Information:



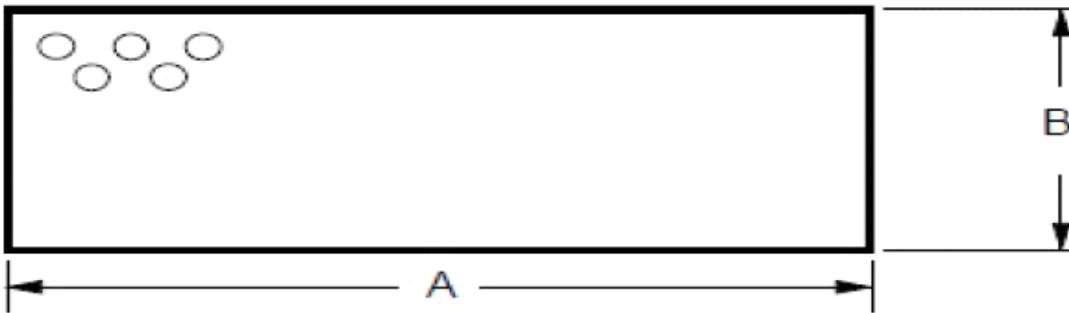
**PACKAGING INFORMATION**  
**MBR10150CTW**

**Packaging Information:**

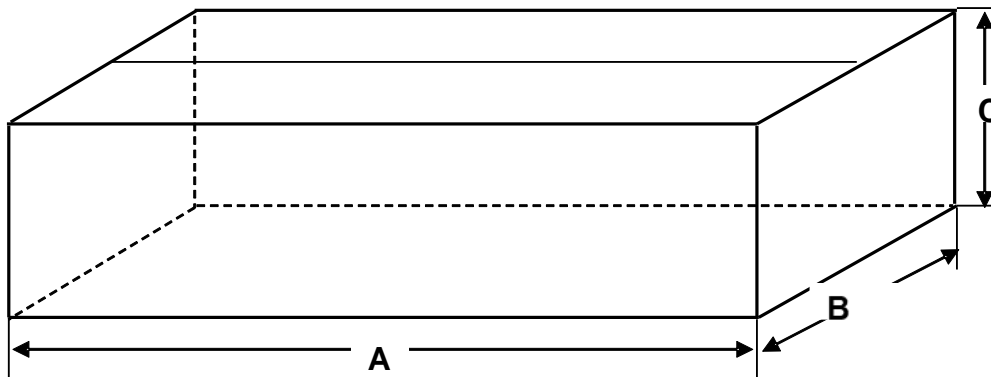
**1. TUBE**



**2. AIR BAG**



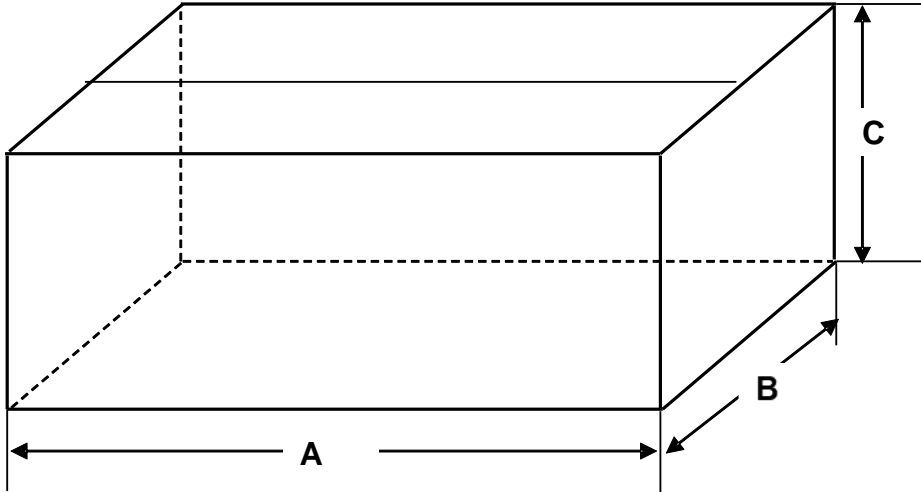
**3. INNERBOX**



**PACKAGING INFORMATION**  
**MBR10150CTW**

**Packaging Information:**

**4. CARTON**



**Unit:mm**

<b>P/N</b>	<b>DIMENSION "A"</b>	<b>DIMENSION "B"</b>	<b>DIMENSION "C"</b>	<b>Q'ty/per</b>	<b>REMARK</b>
<b>TUBE</b>	<b>536</b>	<b>5.6</b>	<b>31.8</b>	<b>50</b>	<b>/</b>
<b>AIR BAG</b>	<b>800</b>	<b>550</b>	<b>/</b>	<b>/</b>	<b>/</b>
<b>INNERBOX</b>	<b>555</b>	<b>165</b>	<b>105</b>	<b>2000</b>	<b>40TUBE</b>
<b>CARTON</b>	<b>575</b>	<b>179</b>	<b>225</b>	<b>4K</b>	<b>2 INNER BOX</b>

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