

# MBR30150CTW

## SCHOTTKY BARRIER RECTIFIER

**REVERSE VOLTAGE** – 150 Volts  
**FORWARD CURRENT** – 30 Amperes

### FEATURES

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

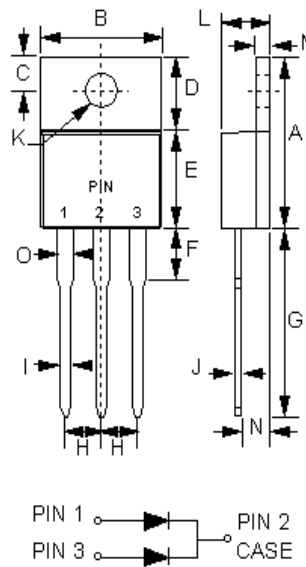
### APPLICATION

- For use in low voltage, high frequency inverters
- Free wheeling
- Polarity protection applications

### MECHANICAL DATA

- Package: JEDEC TO-220AB
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free"
- Polarity: As marked on the body
- Weight: 1.927 grams (Approximate)
- Mounting Position: Any
- Marking Code: MBR30150CTW
- 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.

### ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	150	V
Maximum DC blocking voltage	$V_{DC}$	150	V
Maximum average rectified output current	$I_{(AV)}$	30	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	$I_{FSM}$	180	A
Operating and storage temperature range	$T_J, T_{STG}$	-55 to +175	°C

### STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=15A$ $T_J=25^\circ C$ $T_J=125^\circ C$	$V_F$	-- 0.76	0.93 0.90	V
Reverse leakage current	$V_R=150V$ $T_J=25^\circ C$ $T_J=125^\circ C$	$I_R$	-- 0.32	70 5	$\mu A$ mA
Typical junction capacitance (Note 5)		$C_j$		190	pF

### THERMAL CHARACTERISTICS

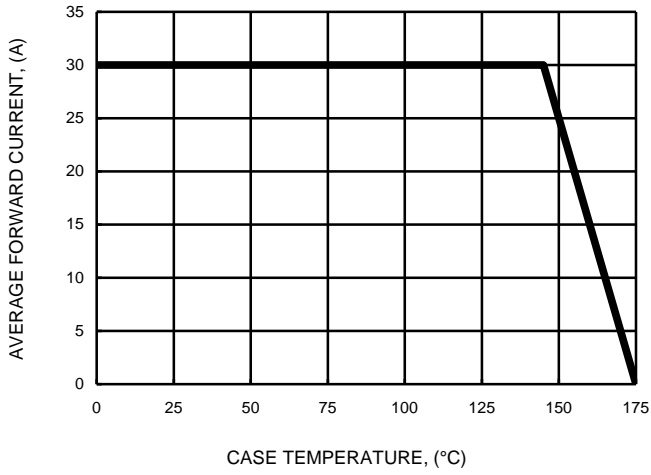
PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Notes 6, 7)	$R_{thJc}$ $R_{thJL}$	1 1	°C/W

### Notes:

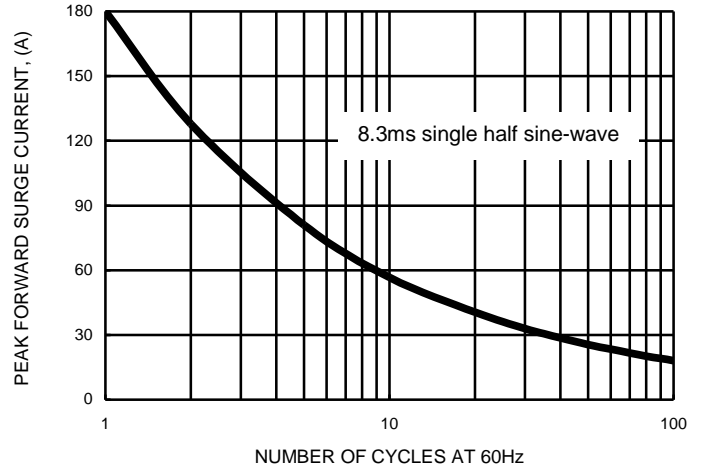
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- 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 test performed in accordance with JESD-51.
7. The unit mounted on copper heatsink 100mm x 100mm x 1.9mm.

**RATING AND CHARACTERISTIC CURVES**  
**MBR30150CTW**

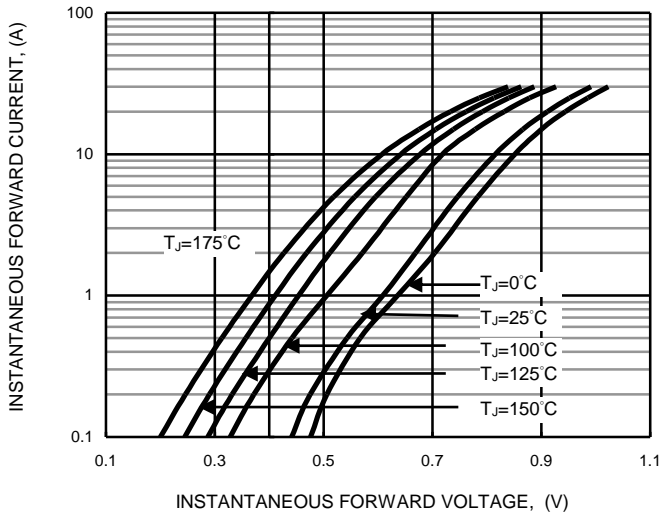
**FIG.1- FORWARD CURRENT DERATING CURVE**



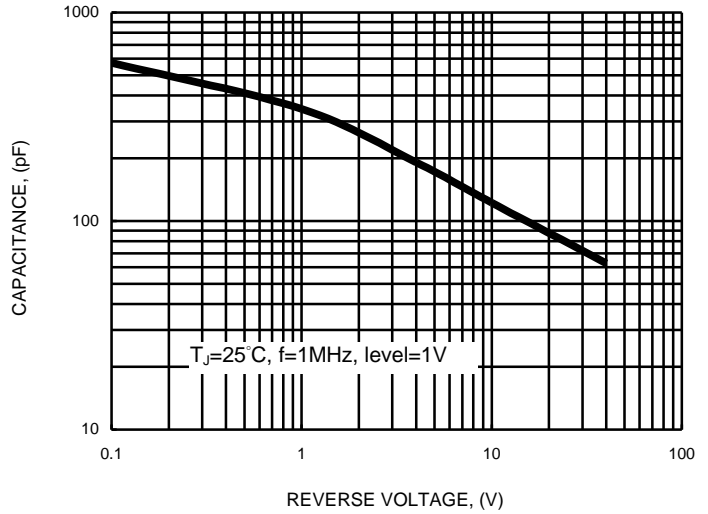
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



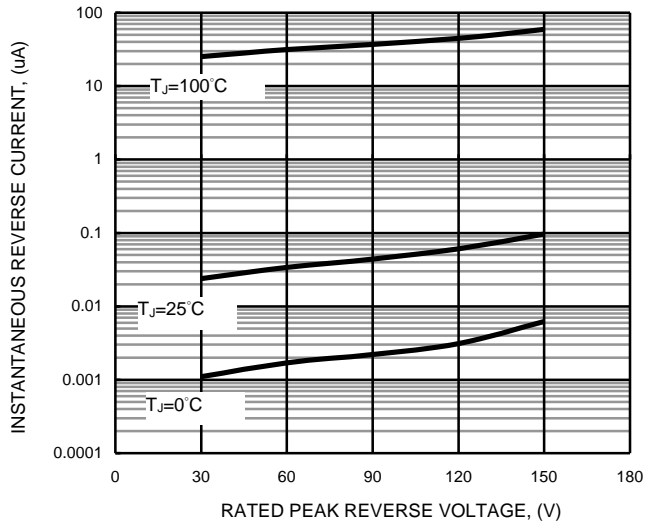
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



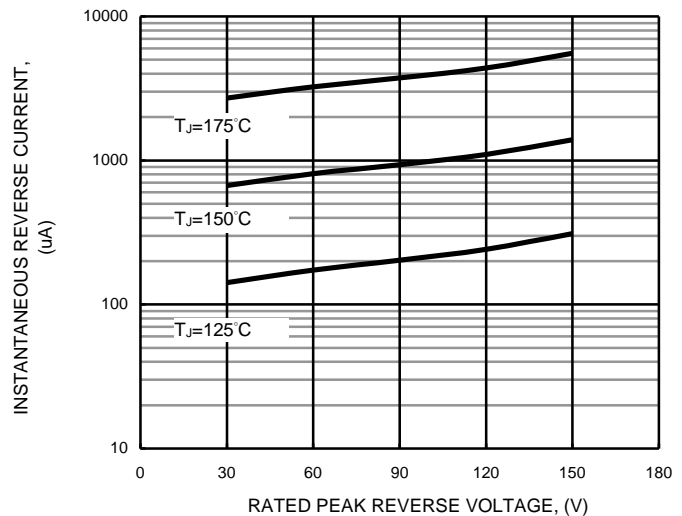
**FIG.4- TYPICAL JUNCTION CAPACITANCE**



**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



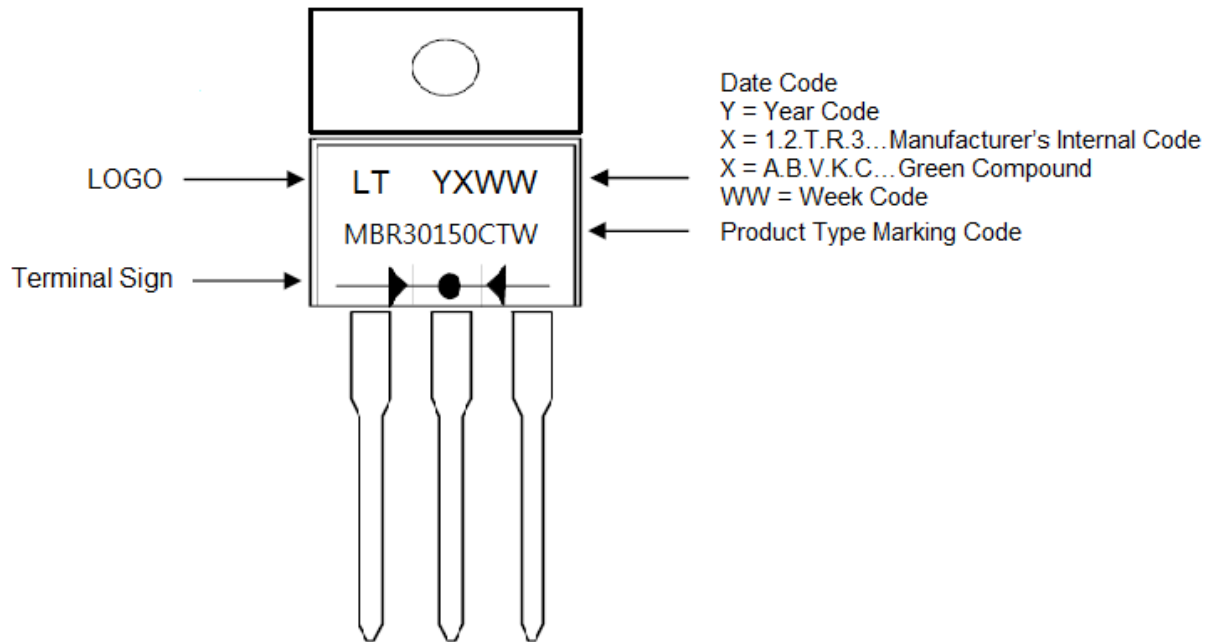
**FIG.6- TYPICAL REVERSE CHARACTERISTICS**



### Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
MBR30150CTW	TO-220AB	50 pcs	Tube

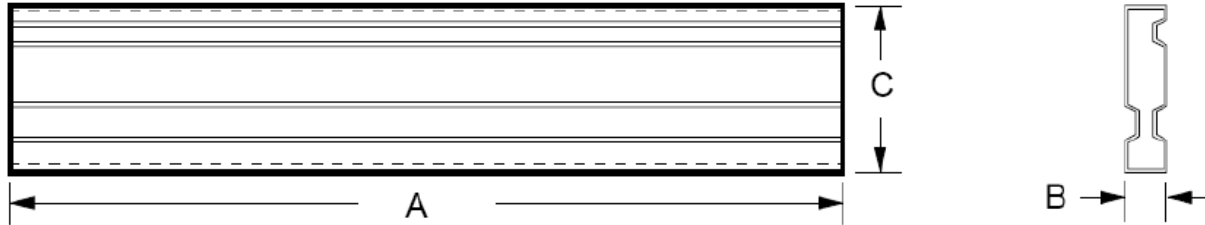
### Marking Information:



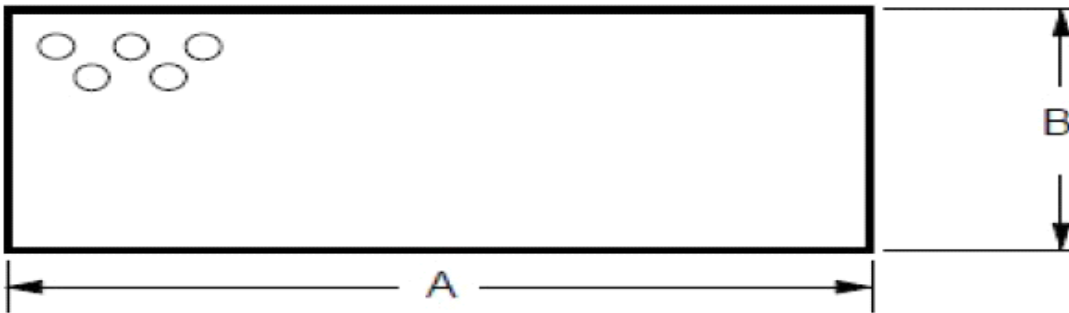
**PACKAGING INFORMATION**  
**MBR30150CTW**

**Packaging Information:**

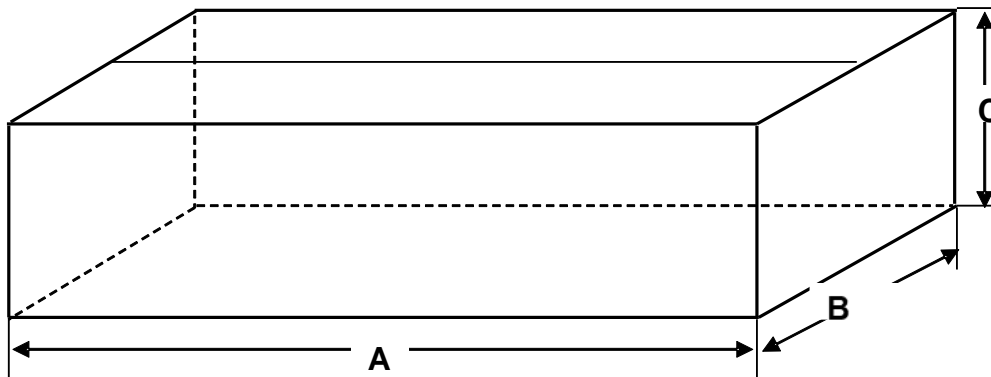
**1. TUBE**



**2. AIR BAG**



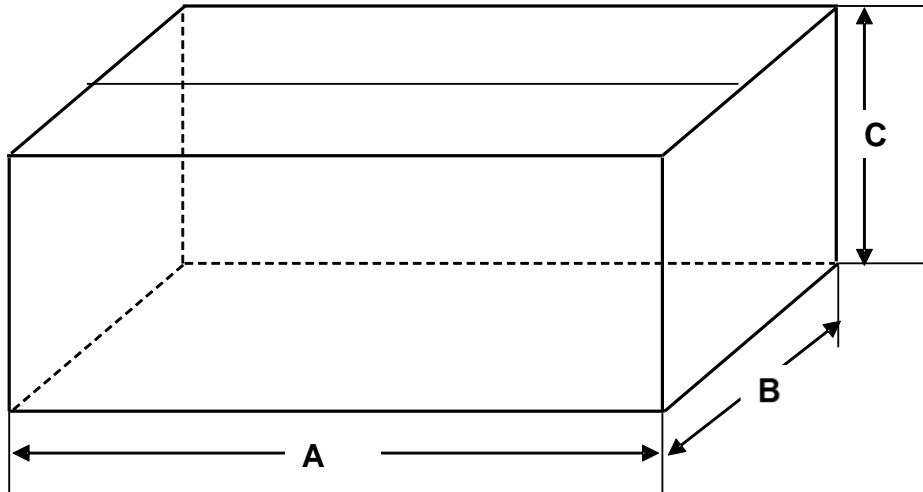
**3. INNERBOX**



**PACKAGING INFORMATION**  
**MBR30150CTW**

**Packaging Information:**

**4. CARTON**



**Unit:mm**

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

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