

MBR20150CTW

SCHOTTKY BARRIER RECTIFIERS

REVERSE VOLTAGE – 150 Volts
FORWARD CURRENT – 20 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 Rev_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

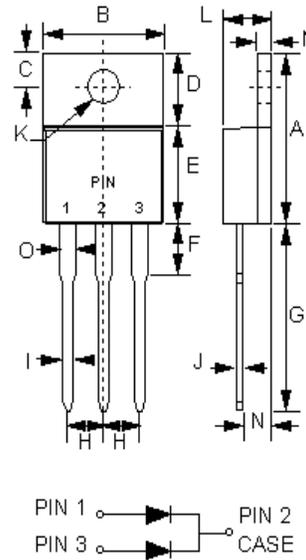
APPLICATION

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

MECHANICAL DATA

- Package: JEDEC TO-220AB
- Package Material: “Green” molding compound UL flammability classification 94V-0, “Halogen-free”
- Marking Code: MBR20150CTW
- Polarity: As marked on the body
- Weight: 1.927 grams
- 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	@ $T_C=140^\circ C$ I_F	20	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	180	A
Maximum Forward Voltage (Note 4)	$I_F=10A@ T_J=25^\circ C$	0.92	V
	$I_F=10A@ T_J=125^\circ C$	0.75	
	$I_F=20A@ T_J=25^\circ C$	1.00	
	$I_F=20A@ T_J=125^\circ C$	0.86	
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_J=25^\circ C$ I_R	8	uA
	$T_J=125^\circ C$	5	
Typical Junction Capacitance per Element (Note 5)	C_j	170	pF
Typical Thermal Resistance Junction to Case (Note 6)	$R_{\theta JC}$	2	°C/W
Typical Thermal Resistance Junction to Lead (Note 6)	$R_{\theta JL}$	3	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta Ja}$	4	°C/W
Operating Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°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. The unit mounted on fin-type heatsink 42 x 25 x 25mm.

RATING AND CHARACTERISTIC CURVES

MBR20150CTW

FIG.1- FORWARD CURRENT DERATING CURVE

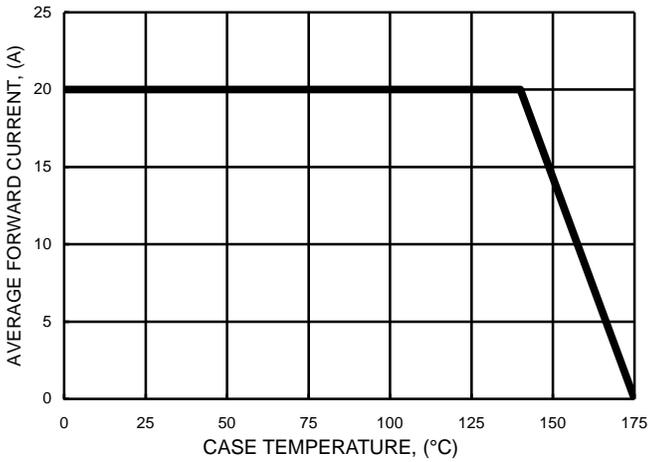


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

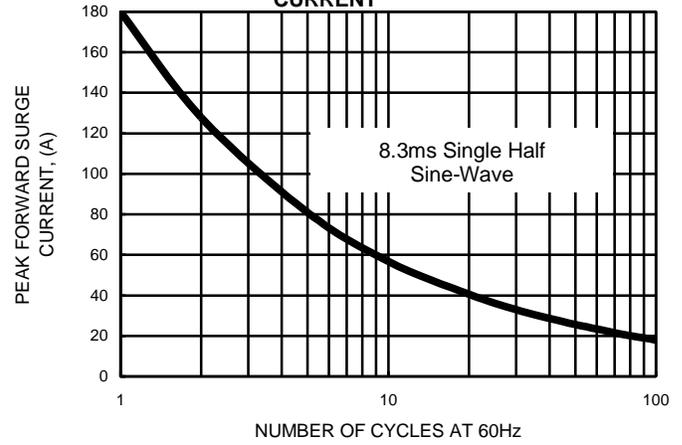


FIG.3- TYPICAL JUNCTION CAPACITANCE

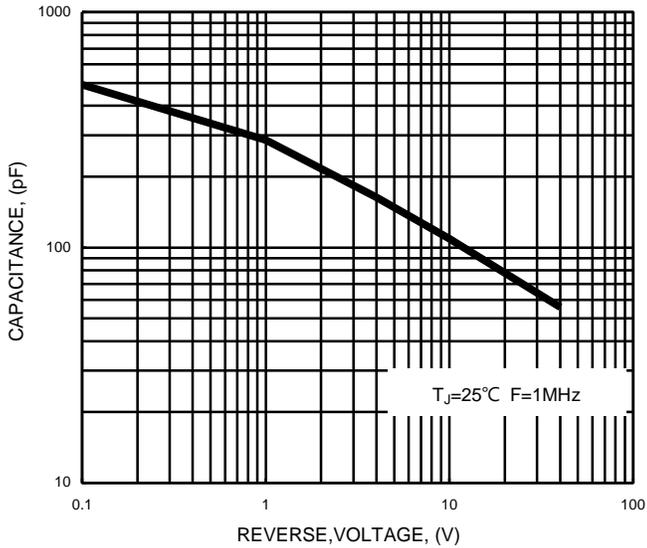


FIG.4- TYPICAL FORWARD CHARACTERISTICS

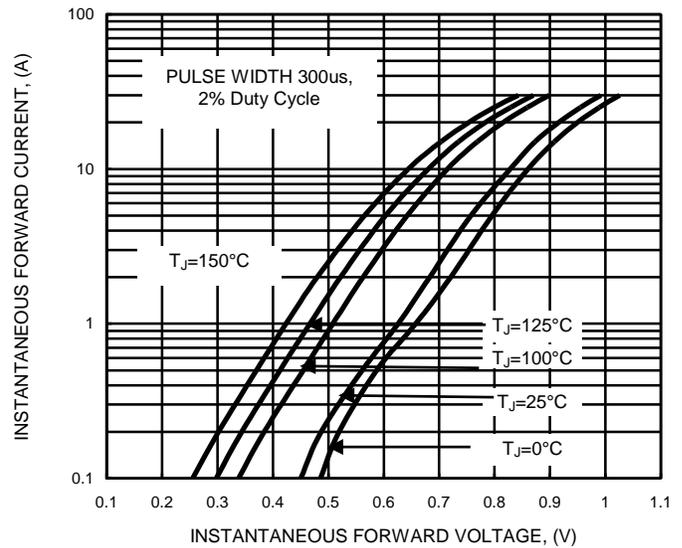
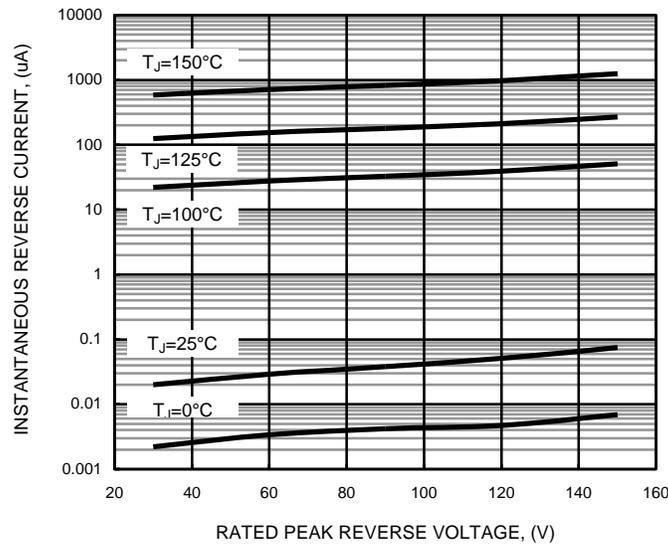


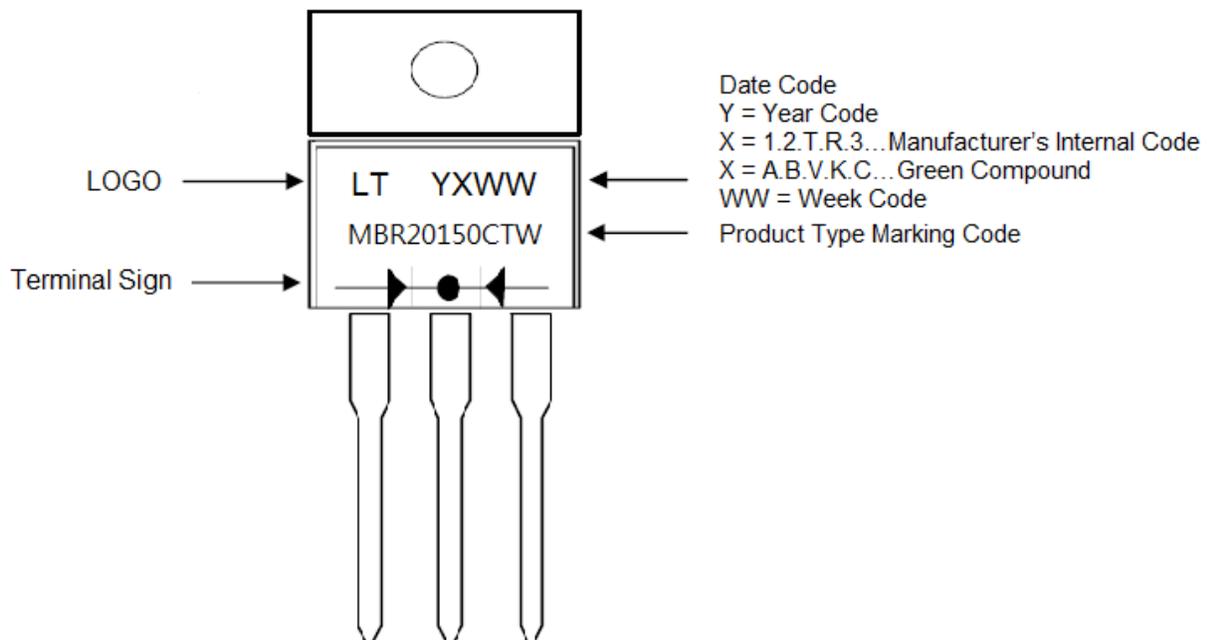
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
MBR20150CTW	TO-220AB	50 pcs	Tube

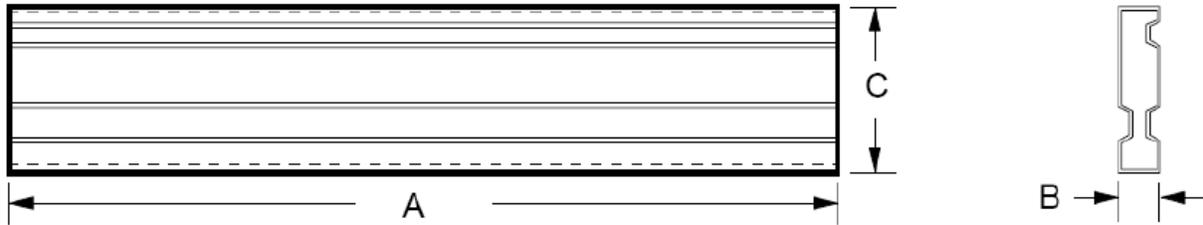
Marking Information:



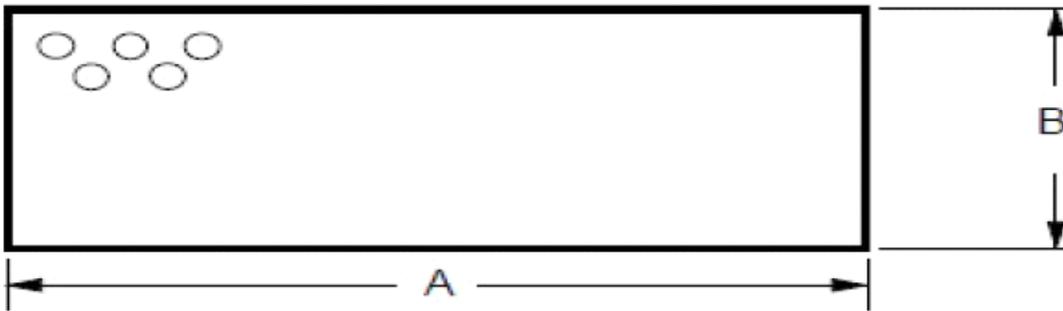
PACKAGING INFORMATION
MBR20150CTW

Packaging Information:

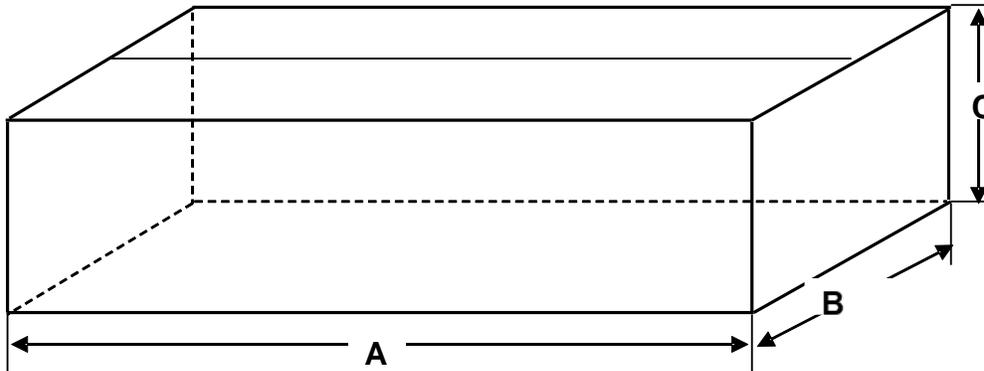
1. TUBE



2. AIR BAG



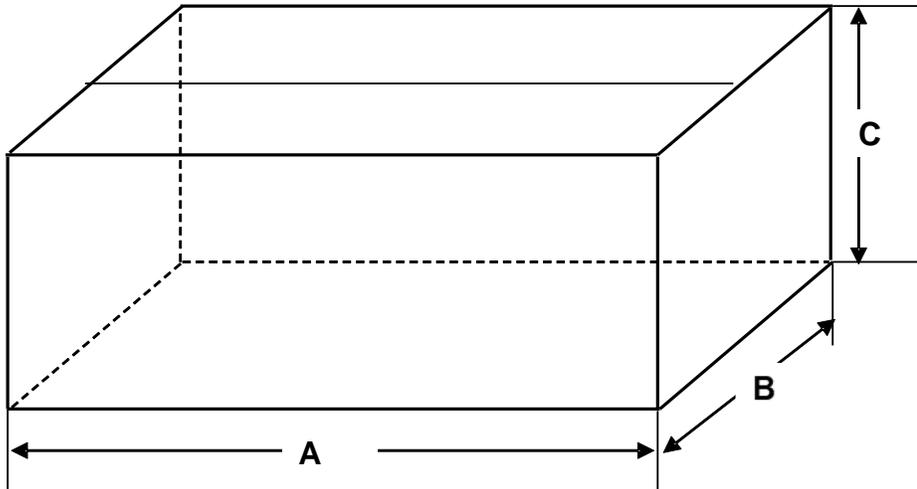
3. INNERBOX



PACKAGING INFORMATION
MBR20150CTW

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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