

MBRF20100CTW

SCHOTTKY BARRIER RECTIFIERS

REVERSE VOLTAGE – 100 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)**

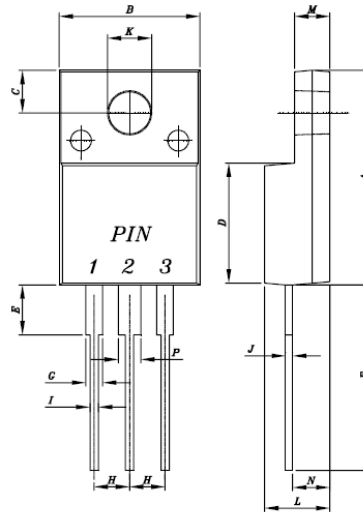
APPLICATION

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

MECHANICAL DATA

- Package: JEDEC ITO-220AB
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free"
- Polarity: As marked on the body
- Weight: 1.558 grams (Approximate)
- Marking Code: MBRF20100CTW
- Mounting Position: Any
- Max. mounting torque = 0.5N.m (5.1Kgf.cm)

ITO-220AB(WB)



ITO-220AB (WB)		
DIM.	MIN.	MAX.
A	14.95	15.95
B	10.00	10.40
C	2.76	3.36
D	8.50	8.80
E	3.30	3.90
F	13.0	13.70
G	1.15	1.70
H	2.40	2.70
I	0.50	0.80
J	0.45	0.70
K	3.00	3.30
L	4.46	4.87
M	2.48	2.80
N	2.50	2.80
P	1.50	1.90

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	V_{RRM}	100	V
Maximum DC Blocking Voltage	$V_{DC(AV)}$	100	V
Average Rectified Output Current @ $T_C=130^\circ\text{C}$	I_F	20	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	150	A
Maximum Forward Voltage $I_F=10\text{A}$ @ $T_J=25^\circ\text{C}$ (Note 4) $I_F=10\text{A}$ @ $T_J=125^\circ\text{C}$	V_F	0.85 0.75	V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	I_R	10 10	μA mA
Typical Thermal Resistance (Note 5)	C_J	240	pF
Typical Thermal Resistance (Notes 6, 7)	$R_{\theta JC}$	3	$^\circ\text{C/W}$
	$R_{\theta JL}$	4	
	$R_{\theta JA}$	14	
Operating Junction Temperature Range	T_J	-55 to +175	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +175	$^\circ\text{C}$

Notes:

- EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
- 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.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 300us Pulse Width, 2% Duty Cycle.
- Measured at 1.0MHz and applied reverse voltage of 4.0 V_{DC} .
- Thermal Resistance Junction to Case, Lead and Ambient.
- The unit mounted on Copper heatsink (75 x 75 x 2mm)+Negative pin contact aluminum plate (20 x 20 x 1.7mm).

RATING AND CHARACTERISTIC CURVES
MBRF20100CTW

FIG.1- FORWARD CURRENT DERATING CURVE

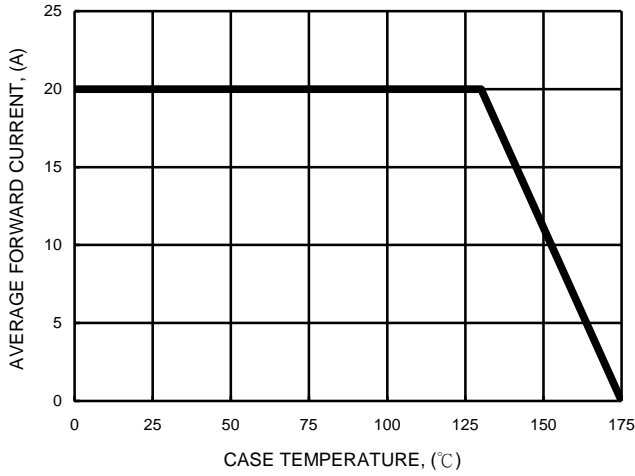


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

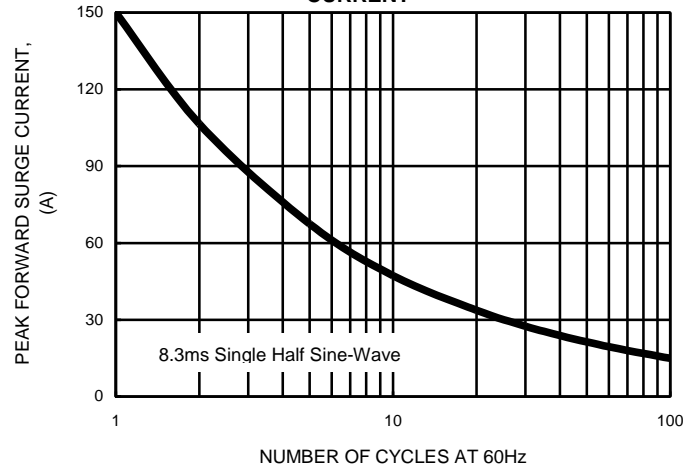


FIG.3- TYPICAL JUNCTION CAPACITANCE

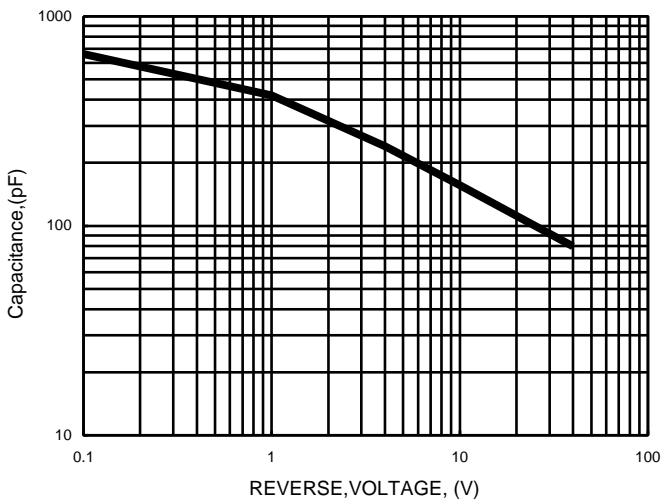


FIG.4- TYPICAL FORWARD CHARACTERISTICS

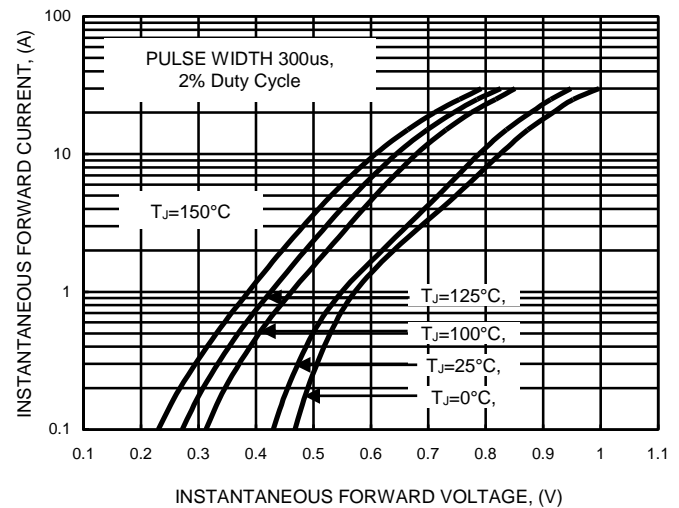
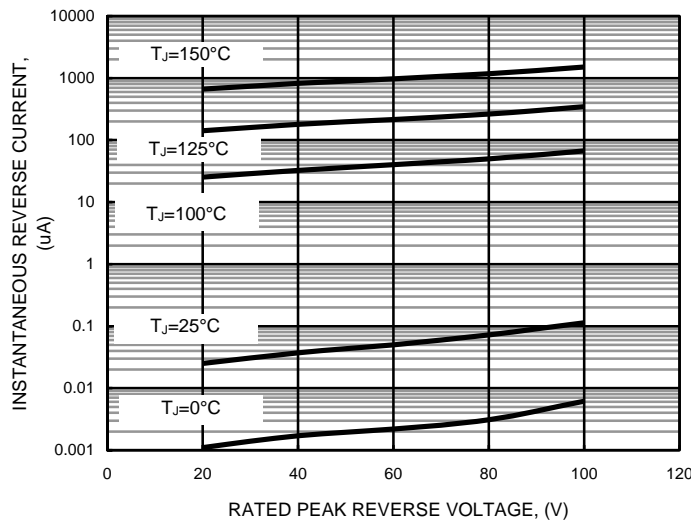


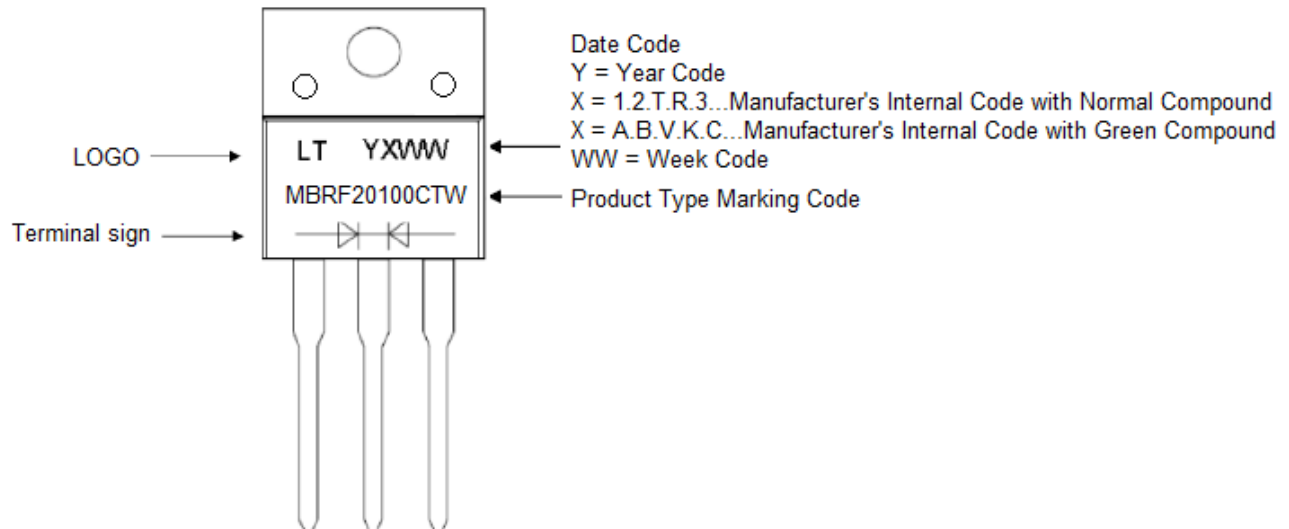
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
MBRF20100CTW	ITO-220AB(WB)	50pcs	Tube

Marking Information:



Packaging Information:

DEVICE	Q'TY / TUBE (PCS)	TUBE SIZE (mm)	BOX SIZE (mm)	Q'TY/BOX (PCS)	CARTON SIZE (mm)	Q'TY/CARTON (PCS)
MBRF20100CTW	50	536X5.6X31.8	555X165X105	2K	575X179X225	4K

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