

MBR3045CTW

SCHOTTKY BARRIER RECTIFIER

REVERSE VOLTAGE – 45 Volts
FORWARD CURRENT – 30 Amperes

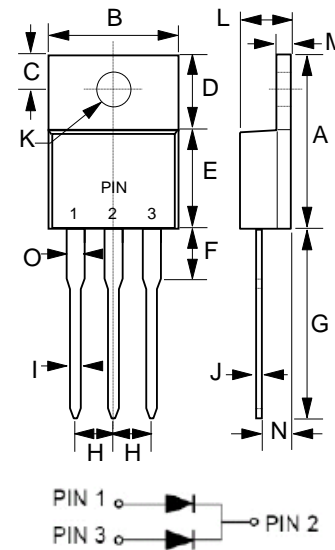
FEATURES

- 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
- Qualified according to AEC-Q101 Rev_C
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

MECHANICAL DATA

- Package: TO-220AB molded plastic
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free"
- Polarity: As marked on the body
- Weight: 0.072 ounces, 2.0275 grams (Approximate)
- Mounting Position: Any
- Marking Code: MBR3045CTW
- 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	2.60	2.90
D	5.84	6.86
E	8.50	9.00
F	--	4.20
G	13.00	14.00
H	2.29	2.79
I	0.51	1.14
J	0.30	0.64
K	3.53φ	4.09φ
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
O	1.14	1.70

All dimensions in millimeters

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}	45	V
Maximum RMS voltage	V_{RMS}	31.5	V
Maximum DC blocking voltage	V_{DC}	45	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}	200	A
Voltage rate of charge (Rated V_R)	dV/dt	10000	V/us
Operating and storage temperature range	T_J, T_{STG}	-55 to +175	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	MAX	UNIT
Forward voltage (Note 4)	$I_F=15A$ $T_J=25°C$	V_F	0.70	V
	$I_F=30A$ $T_J=25°C$		0.84	
	$T_J=125°C$		0.72	
Leakage current	$V_R=45V$ $T_J=25°C$ $T_J=125°C$	I_R	0.02 15	mA
Typical junction capacitance (Note 5)		C_j	450	pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Notes 6, 7)	R_{thJ_c}	1.5	°C/W
	R_{thJ_a}	5	

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.
7. Thermal Resistance test performed in accordance with JESD-51. The unit mounted on copper plate heatsink.

RATING AND CHARACTERISTIC CURVES
MBR3045CTW

FIG.1- FORWARD CURRENT DERATING CURVE

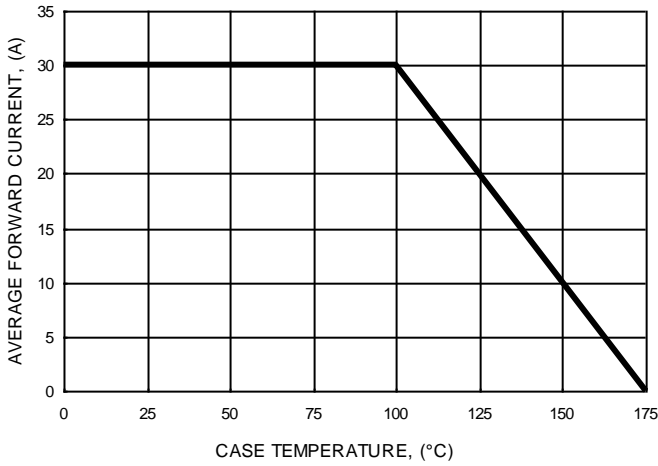


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

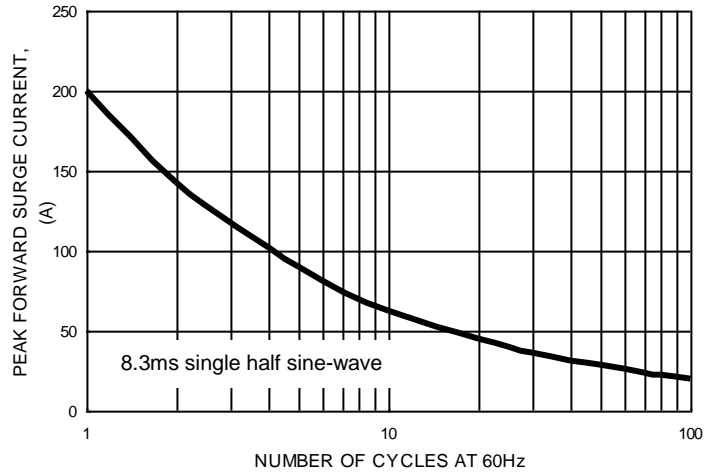


FIG.3- TYPICAL FORWARD CHARACTERISTICS

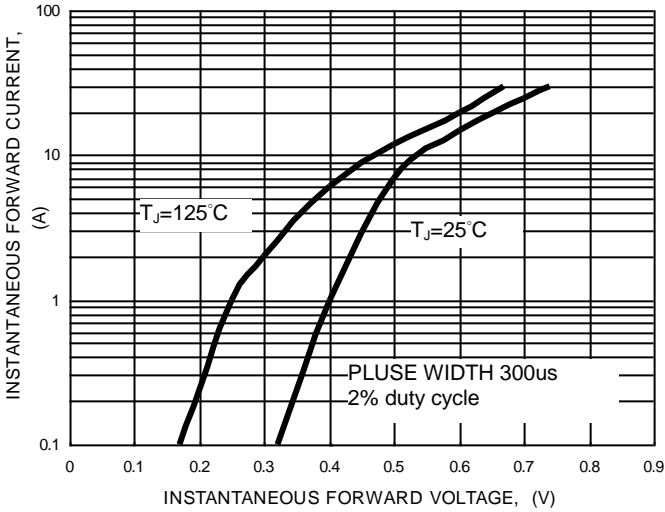


FIG.4- TYPICAL JUNCTION CAPACITANCE

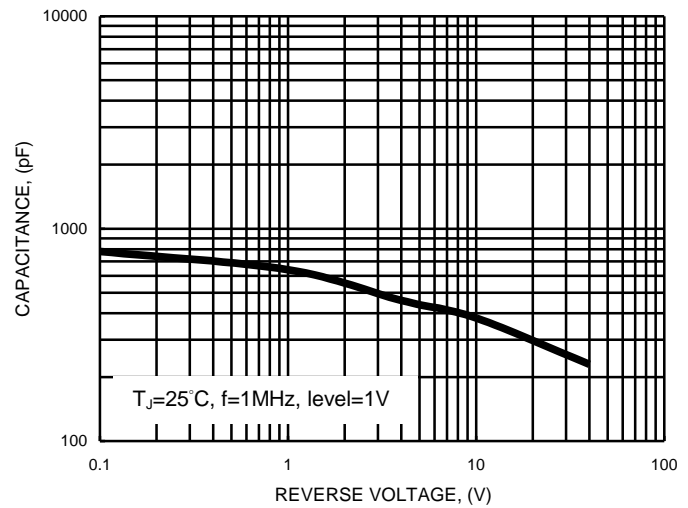
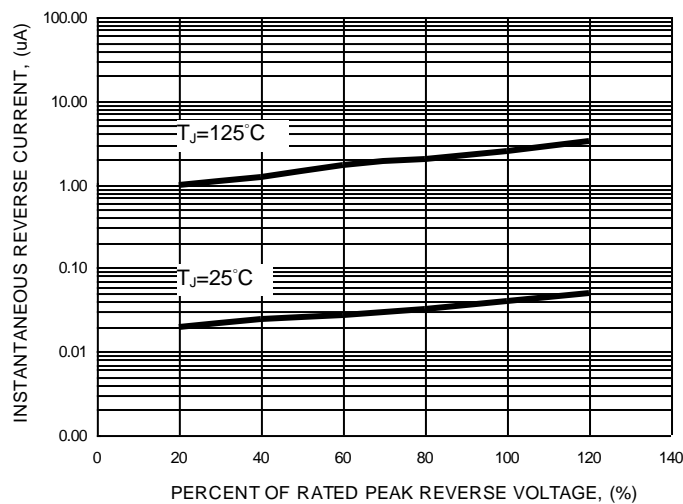


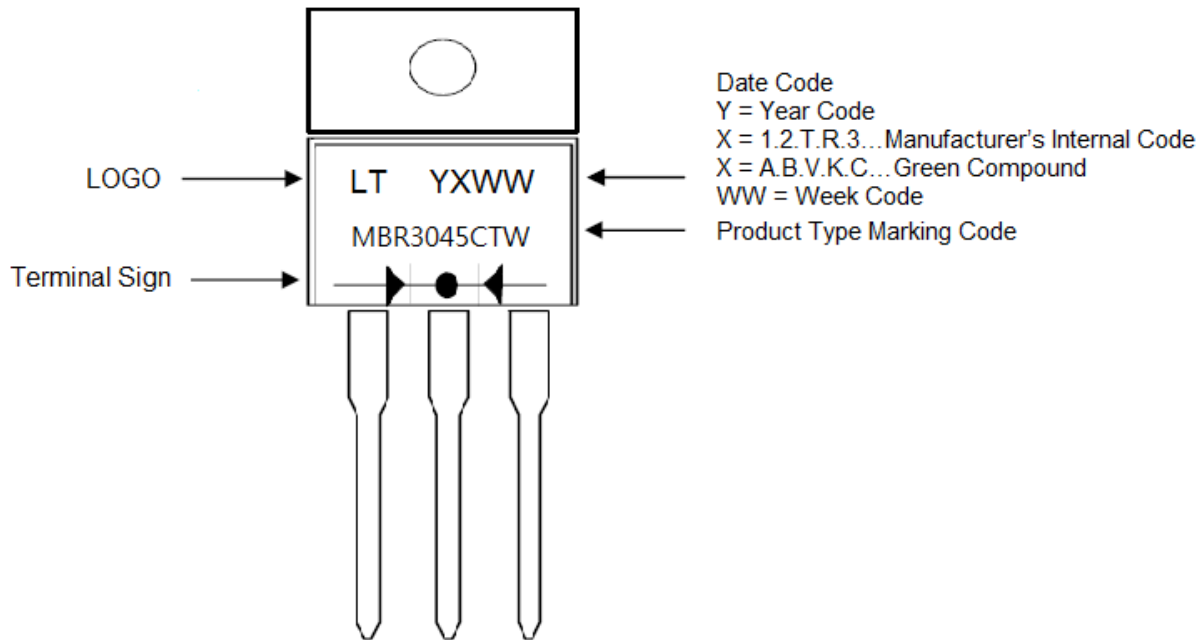
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
MBR3045CTW	TO-220AB	50 pcs	Tube

Marking Information:



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