

# MBRF2045CT(LS)

## SCHOTTKY BARRIER RECTIFIERS

**REVERSE VOLTAGE - 45 Volts  
FORWARD CURRENT - 20 Amperes**

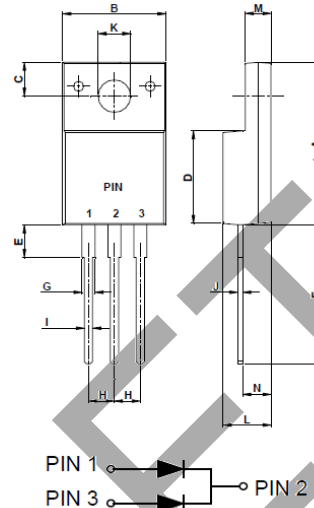
### FEATURES

- 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
- Plastic package has UL flammability classification 94V-0
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ITO-220AB
  - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Available in "Green" Package: ITO-220AB
  - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
  - **Halogen and Antimony Free. "Green" Device (Note 3)**

### MECHANICAL DATA

- Package: ITO-220AB molded plastic
- Polarity: As marked on the body
- Weight: 0.06 ounces, 1.7 grams
- Mounting position: Any
- Max. mounting torque = 0.5N.m (5.1Kgf.cm)

### ITO-220AB



ITO-220AB		
DIM	MIN	MAX
A	15.50	16.50
B	10.00	10.40
C	3.00	3.50
D	9.00	9.30
E	2.90	3.60
F	13.46	14.22
G	1.15	1.70
H	2.40	2.70
I	0.75	1.00
J	0.45	0.70
K	3.00 Ø	3.30 Ø
L	4.36	4.77
M	2.48	2.80
N	2.50	2.80

All dimension in millimeter

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at +25°C ambient temperature unless otherwise specified.

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Maximum Recurrent 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 Forward Rectified Current (See Fig.4) @ $T_C=+120^\circ C$	$I_{(AV)}$	20	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave @ $T_J=+25^\circ C$	$I_{FSM}$	150	A
Voltage Rate of Change (Rated VR)	$dv/dt$	10000	V/us
Maximum Forward Voltage (Note 4)	$V_F$	- 0.57 0.84 0.72	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	$I_R$	0.02 15	mA
Typical Junction Capacitance per Element (Note 5)	$C_J$	580	pF
Typical Thermal Resistance (Note 6)	$R_{\theta JC}$	2.0	$^\circ C/W$
Operating Temperature Range	$T_J$	-55 to +150	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55 to +175	$^\circ C$
Dielectric Strength from Terminals to Case AC with t=1 Minute, RH<30%	$V_{dis}$	2000	V

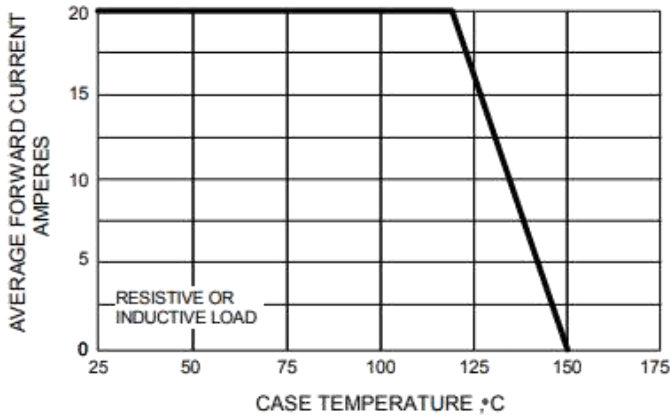
#### Notes:

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 <90ppm bromine, <90ppm 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 4.0V DC.
6. Thermal Resistance Junction to Case. Device mounted on 135mm x 135mm x 8mm Al plate.

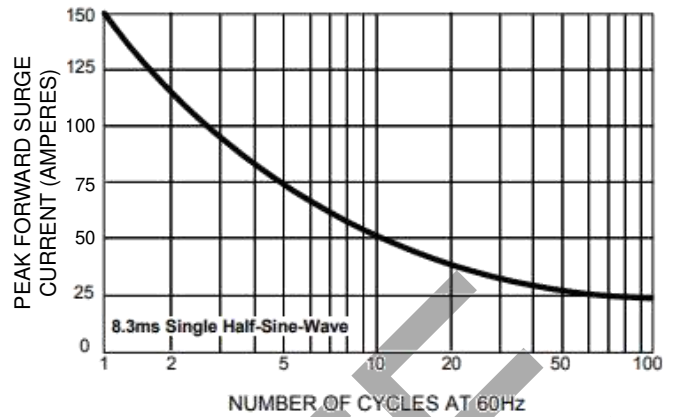
**RATING AND CHARACTERISTIC CURVES**  
**MBRF2045CT**

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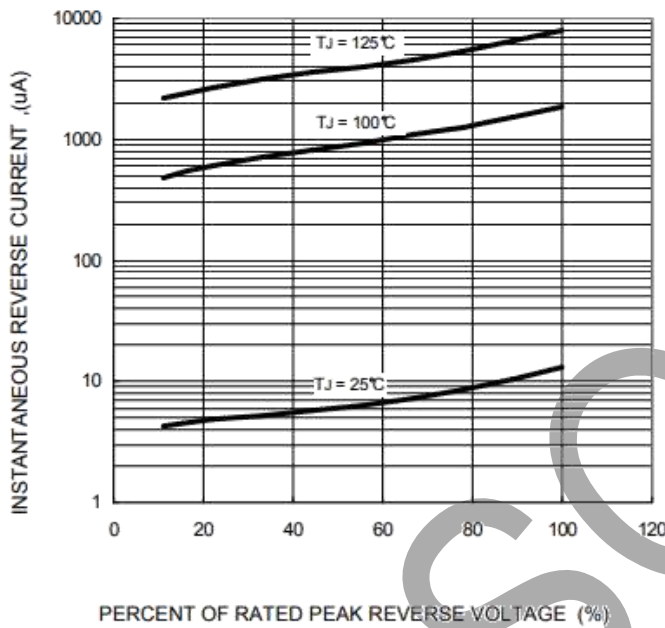
**FIG.1 - FORWARD CURRENT DERATING CURVE**



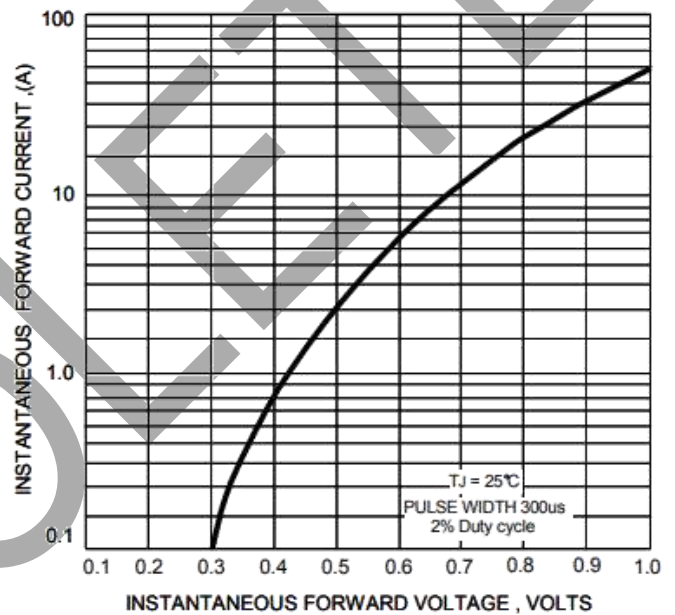
**FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT**



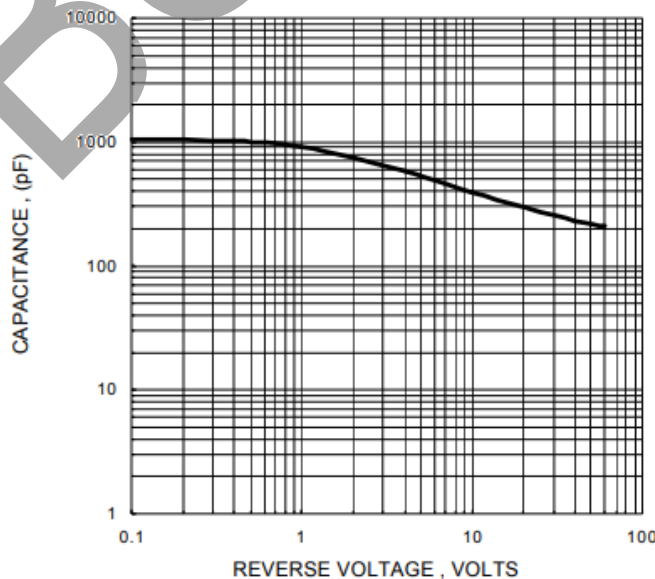
**FIG.3 - TYPICAL REVERSE CHARACTERISTICS**



**FIG.4 - TYPICAL FORWARD CHARACTERISTICS**



**FIG.5 - TYPICAL JUNCTION CAPACITANCE**

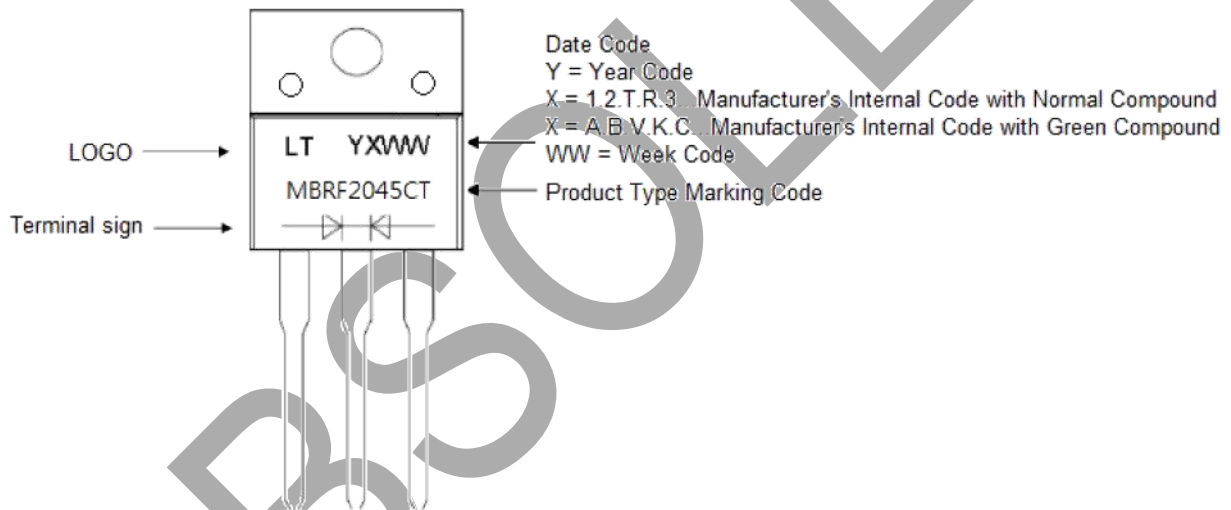


**Ordering Information :**

Part Number		Package	Packing	
Lead Free	Green		Qty.	Carrier
NA	MBRF2045CT_HF	ITO-220AB	50pcs	Tube
MBRF2045CT-LS	NA	ITO-220AB	50pcs	Tube



**Marking Information :**



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