

## Product Summary

$V_{RRM}$ (V)	$I_o$ (A)	$V_F(MAX)$ (V) @ +25°C	$I_R(MAX)$ (mA) @ +25°C
45	15	-	0.2
45	30	0.82	0.2
60	15	0.75	1.0
60	30	-	1.0

## Features and Benefits

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- 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)**
- **Qualified to AEC-Q101 Standards for High Reliability**

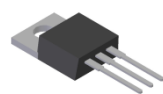
## Description and Applications

The MBR2545CT & MBR2560CT are designed to meet the stringent requirements of commercial applications, such as:

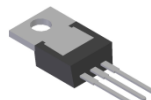
- Polarity Protection Diodes
- Re-Circulating Diodes
- Switching Diodes

## Mechanical Data

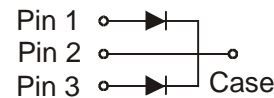
- Case: TO-220AB
- Case Material: Molded Plastic.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Bright Tin.  
Solderable per MIL-STD-202, Method 208 ③
- Polarity: As Marked on Body
- Marking: Type Number
- Weight: 2.24 grams (Approximate)



TO-220AB  
Top View



TO-220AB  
Bottom



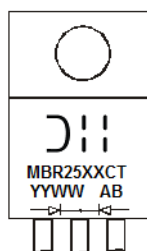
Package Pin Out  
Configuration

## Ordering Information (Note 4)

Part Number	Case	Packaging
MBR2545CT	TO-220AB	50/Tube
MBR2560CT	TO-220AB	50/Tube

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



MBR25XXCT = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 15= 2015)  
 WW = Week (01 - 53)

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

Characteristic	Symbol	MBR2545CT	MBR2560CT	Unit
Peak Repetitive Reverse Voltage	V <sub>R(RM)</sub>			
Working Peak Reverse Voltage	V <sub>R(WM)</sub>	45	60	V
DC Blocking Voltage	V <sub>R</sub>			
RMS Reverse Voltage	V <sub>R(RMS)</sub>	32	42	V
Average Rectified Output Current @ T <sub>C</sub> = +130°C	I <sub>O</sub>	30		A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	150		A
Peak Repetitive Reverse Surge Current (Note 7)	I <sub>R(RM)</sub>	1.0	0.5	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	1.5	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	MBR2535CT	MBR2545CT	MBR2550CT	MBR2560CT	Unit
Forward Voltage Drop @ I <sub>F</sub> = 15.0A, T <sub>C</sub> = +25°C @ I <sub>F</sub> = 15.0A, T <sub>C</sub> = +125°C @ I <sub>F</sub> = 30.0A, T <sub>C</sub> = +25°C @ I <sub>F</sub> = 30.0A, T <sub>C</sub> = +125°C	V <sub>FM</sub>	—	—	0.75	—	V
		—	—	0.65	—	
		0.82	—	—	—	
		0.73	—	—	—	
Peak Reverse Current at Rated DC Blocking Voltage @ T <sub>C</sub> = +25°C @ T <sub>C</sub> = +125°C	I <sub>RM</sub>	0.2	—	1.0	—	mA
		40	—	50	—	
Typical Total Capacitance (Note 6)	C <sub>T</sub>	750	—	500	—	pF

- Notes: 5. Thermal resistance junction to case mounted on heatsink.  
6. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC and per element.  
7. 2.0µs pulse width, f = 1.0KHz.

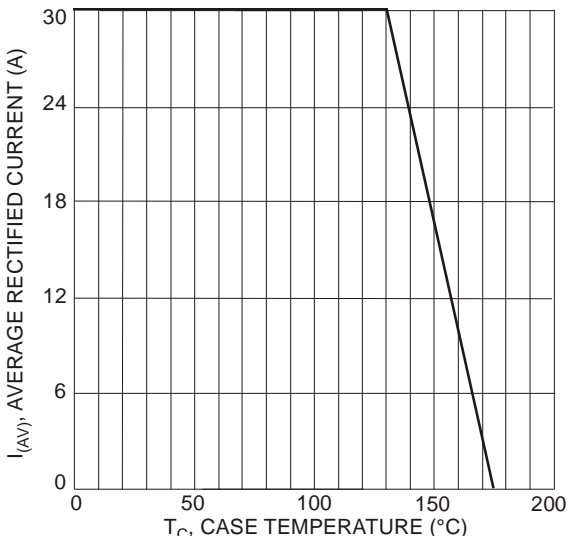


Fig. 1 Forward Derating Curve

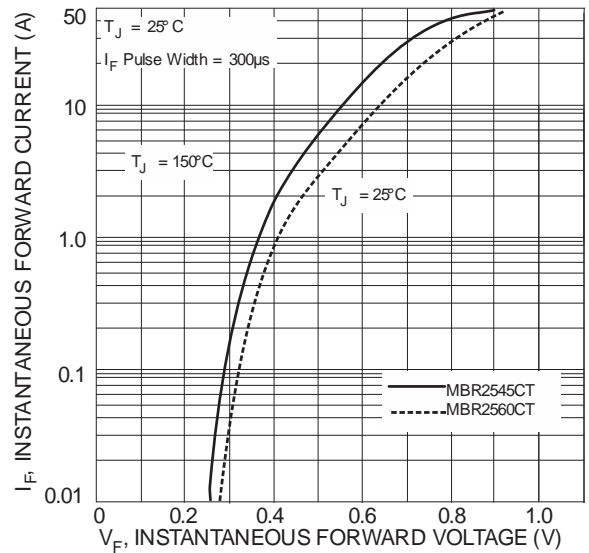


Fig. 2 Typical Forward Characteristics

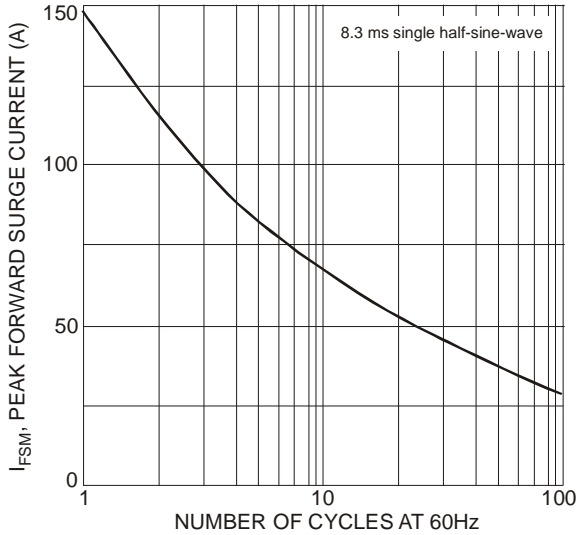


Fig. 3 Maximum Non-Repetitive Surge Current

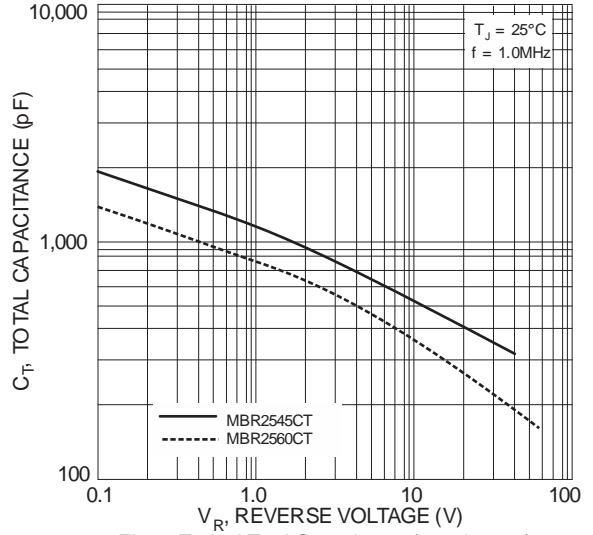
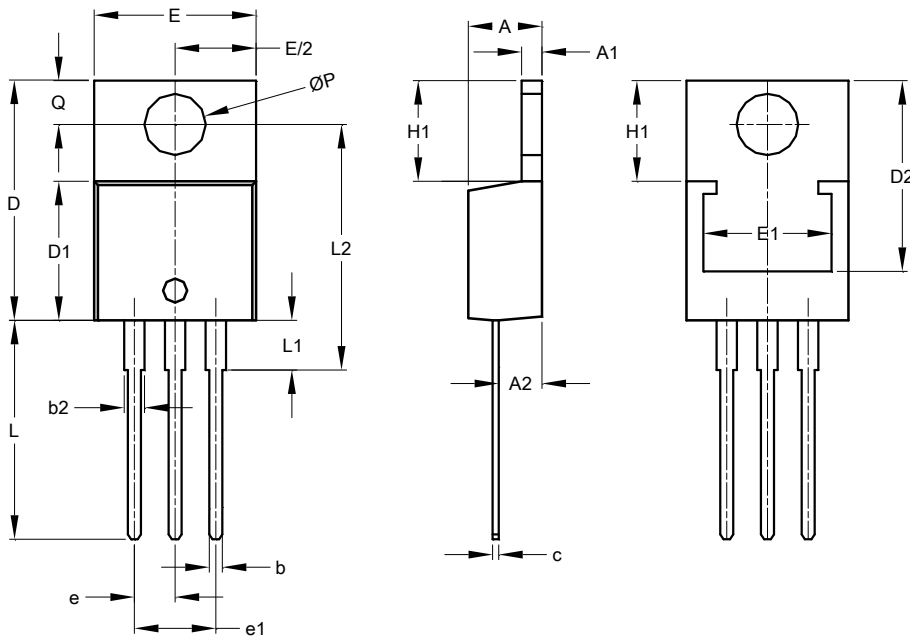


Fig. 4 Typical Total Capacitance (per element)

**Package Outline Dimensions**

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



TO220AB			
Dim	Min	Max	Typ
A	3.56	4.82	-
A1	0.51	1.39	-
A2	2.04	2.92	-
b	0.39	1.01	0.81
b2	1.15	1.77	1.24
c	0.356	0.61	-
D	14.22	16.51	-
D1	8.39	9.01	-
D2	11.45	12.87	-
e	-	-	2.54
e1	-	-	5.08
E	9.66	10.66	-
E1	6.86	8.89	-
H1	5.85	6.85	-
L	12.70	14.73	-
L1	-	6.35	-
L2	15.80	16.20	16.00
P	3.54	4.08	-
Q	2.54	3.42	-
<b>All Dimensions in mm</b>			

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