

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

Description and Applications

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

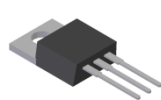
- Polarity Protection Diodes
- Re-Circulating Diodes
- Switching Diodes

Features and Benefits

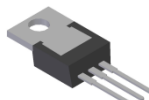
- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low-Voltage, High-Frequency Inverters, Free-Wheeling, and Polarity Protection Applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

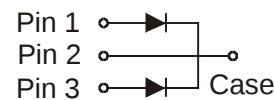
- Case: TO-220AB
- Case Material: Molded Plastic.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Bright Tin.
Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: As Marked on Body
- Marking: Type Number
- Weight: 2.24 grams (Approximate)



TO-220AB
Top View



TO-220AB
Bottom



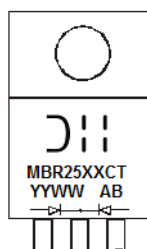
Package Pin Out
Configuration

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 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 (@ $T_A = +25^\circ\text{C}$, 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_{RRM}	45	60	V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
RMS Reverse Voltage	$V_{R(RMS)}$	32	42	V
Average Rectified Output Current @ $T_C = +130^\circ\text{C}$	I_O	30		A
Non-Repetitive Peak Forward Surge Current 8.3ms	I_{FSM}	150		A
Single Half Sine-Wave Superimposed on Rated Load				
Peak Repetitive Reverse Surge Current (Note 7)	I_{RRM}	1.0	0.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	MBR2535CT	MBR2545CT	MBR2550CT	MBR2560CT	Unit
Forward Voltage Drop @ $I_F = 15.0\text{A}, T_C = +25^\circ\text{C}$	V_{FM}	—	—	0.75		V
@ $I_F = 15.0\text{A}, T_C = +125^\circ\text{C}$		—	—	0.65		
@ $I_F = 30.0\text{A}, T_C = +25^\circ\text{C}$		0.82		—		
@ $I_F = 30.0\text{A}, T_C = +125^\circ\text{C}$		0.73		—		
Peak Reverse Current @ $T_C = +25^\circ\text{C}$	I_{RM}	0.2		1.0		mA
at Rated DC Blocking Voltage @ $T_C = +125^\circ\text{C}$		40		50		
Typical Total Capacitance (Note 6)	C_T	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. 2.0 μs pulse width, $f = 1.0\text{KHz}$.

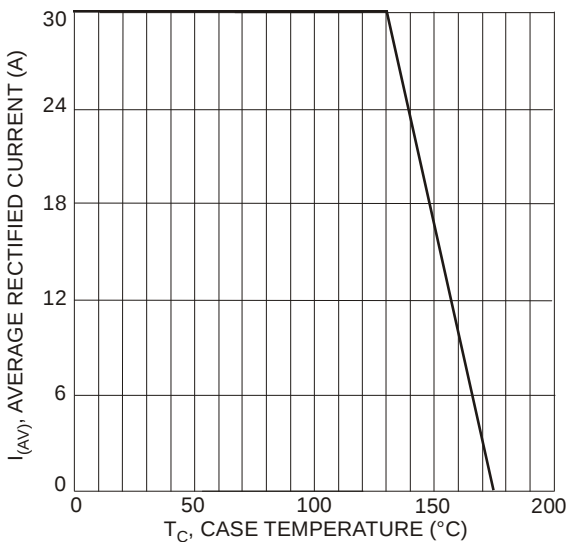


Fig. 1 Forward Derating Curve

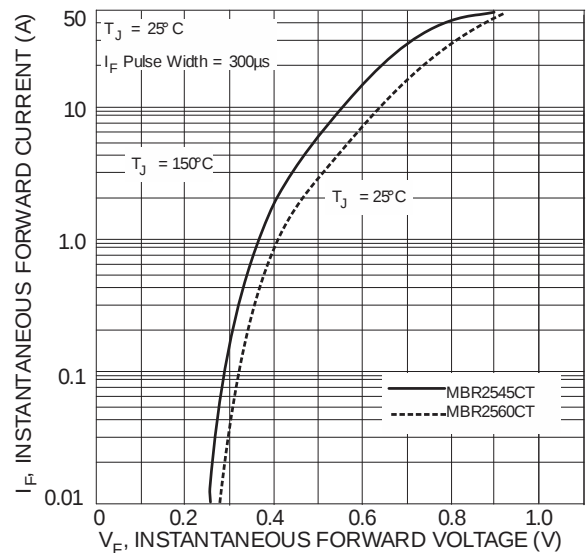


Fig. 2 Typical Forward Characteristics

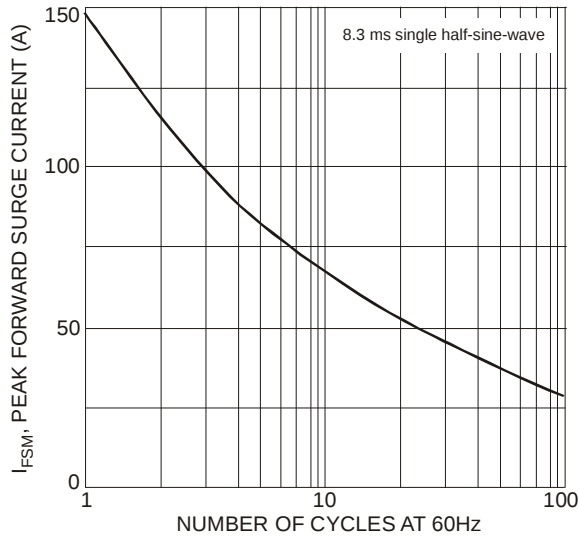


Fig. 3 Maximum Non-Repetitive Surge Current

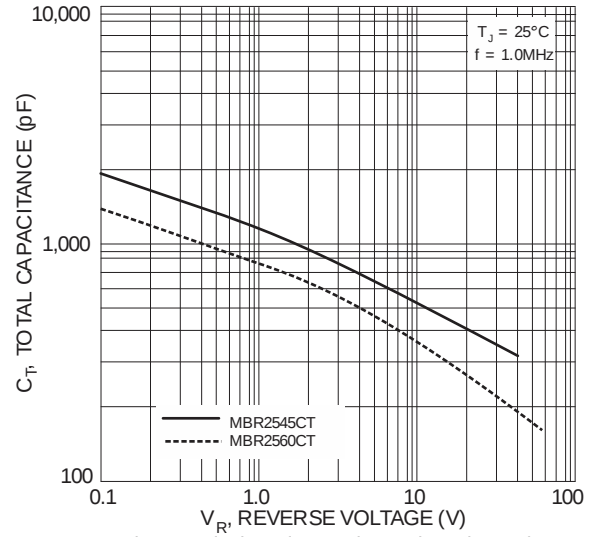
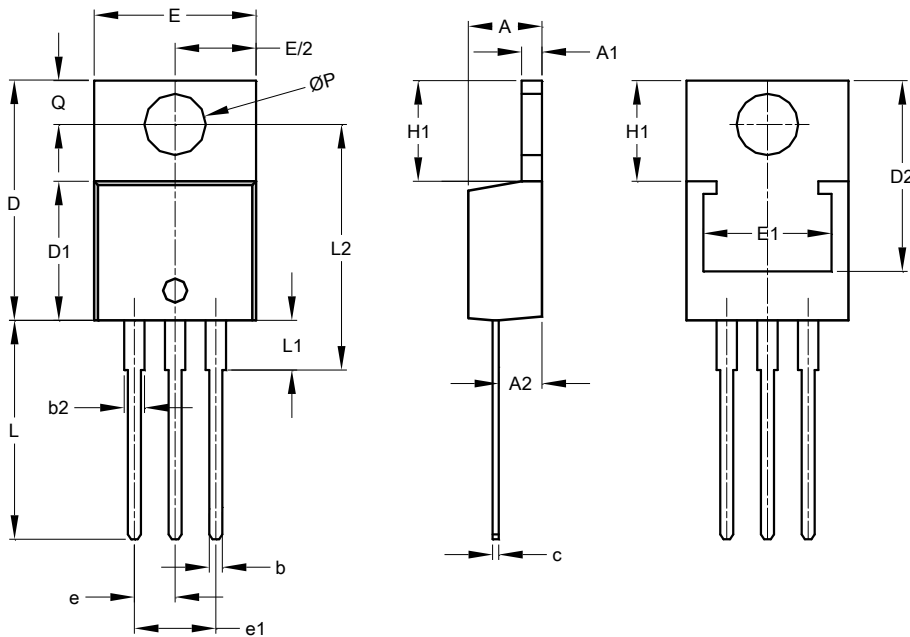


Fig. 4 Typical Total Capacitance (per element)

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	-
All Dimensions in mm			

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