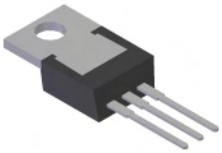
Features and Benefits

- 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 (Note 1)**

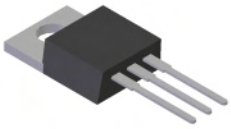
Mechanical Data

- Case: TO220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: As Marked on Body
- Terminals: Finish – Bright Tin. Solderable per MIL-STD-202, Method 208 (e3)
- Marking: Type Number
- Weight: 2.24 grams (approximate)

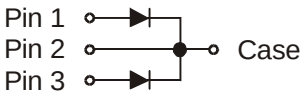
TO220AB



Top View



Bottom View



Device Schematic

Ordering Information (Note 2)

Device	Packaging	Shipping
MBR10xxCT*	TO220AB	50/Tube

* xx = Device type, e.g. MBR1045CT

Maximum Ratings @T_A = 25°C unless otherwise specified

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

Characteristic	Symbol	MBR 1030CT	MBR 1035CT	MBR 1040CT	MBR 1045CT	MBR 1050CT	MBR 1060CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage (Note 3)	V_{RRM} V_{RWM} V_R	30	35	40	45	50	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	24.5	28	31.5	35	42	V
Average Rectified Output Current (Note 4) @ T_C = 105°C	I_O	10						A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	125						A
Repetitive Peak Reverse Surge Current @ t ≤ 2.0µs	I_{RRM}	1.0						A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 4)	$R_{\theta JC}$	3.0	K/W
Voltage Rate of Change (Rated V_R)	dV/dt	1000	V/µS
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*
2. For packaging details, visit our website at http://www.diodes.com.
3. Short duration pulse test used to minimize self-heating effect.
4. Thermal resistance junction to case mounted on heatsink..

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Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	MBR 1030CT	MBR 1035CT	MBR 1040CT	MBR 1045CT	MBR 1050CT	MBR 1060CT	Unit
Forward Voltage Drop	@ I_F = 5.0A, T_C = 125°C	V_{FM}	0.57				0.70		V
	@ I_F = 5.0A, T_C = 25°C		0.70				0.80		
	@ I_F = 10A, T_C = 25°C		0.84				0.95		
Peak Reverse Current	@ T_C = 25°C	I_{RM}	0.1						mA
at Rated DC Blocking Voltage (Note 3)	@ T_C = 125°C		15						
Typical Total Capacitance (Note 5)		C_T	150						pF

Notes: 5. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC and per element.

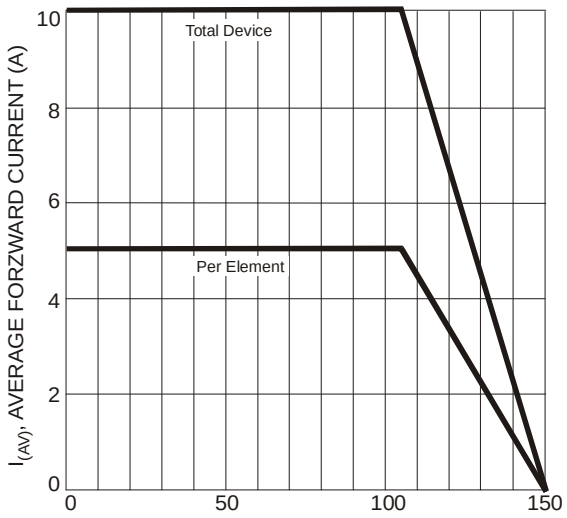


Fig. 1 Forward Current Derating Curve

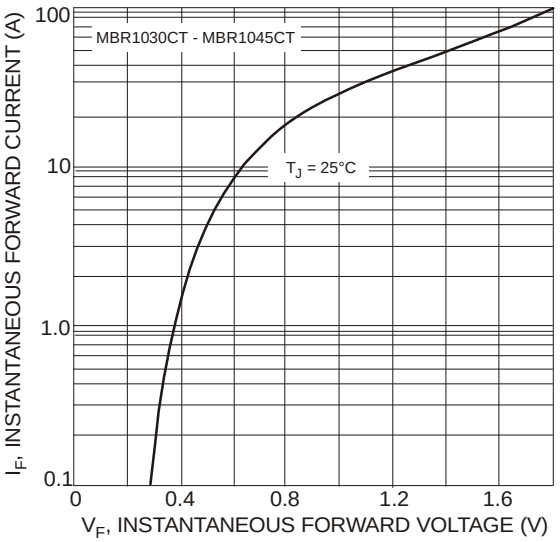


Fig. 2 Typical Forward Characteristics, per Element

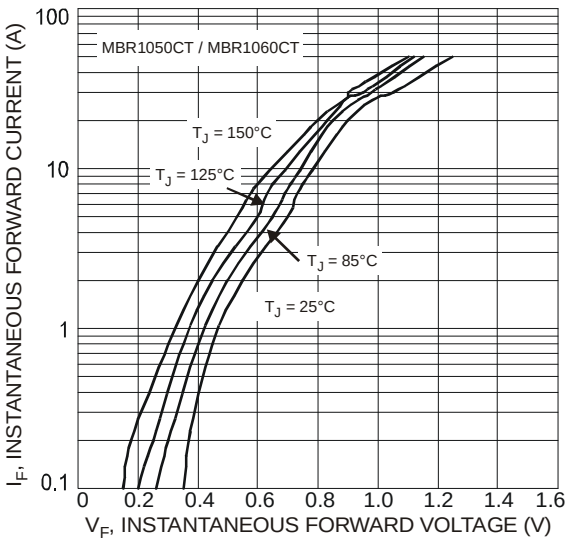


Fig. 3 Typical Forward Characteristics, per Element

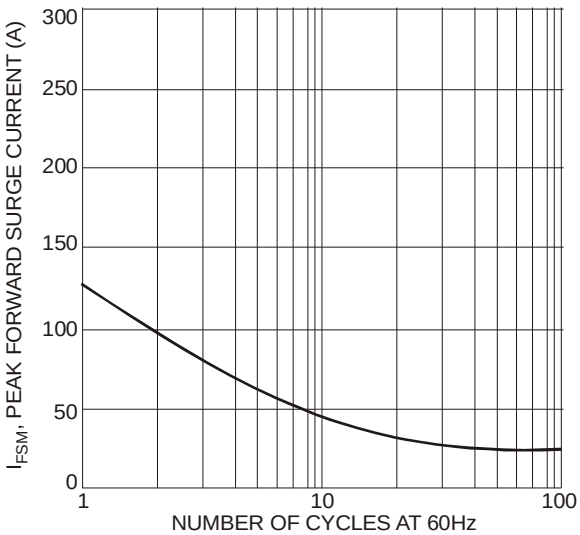


Fig. 4 Max Non-Repetitive Surge Current

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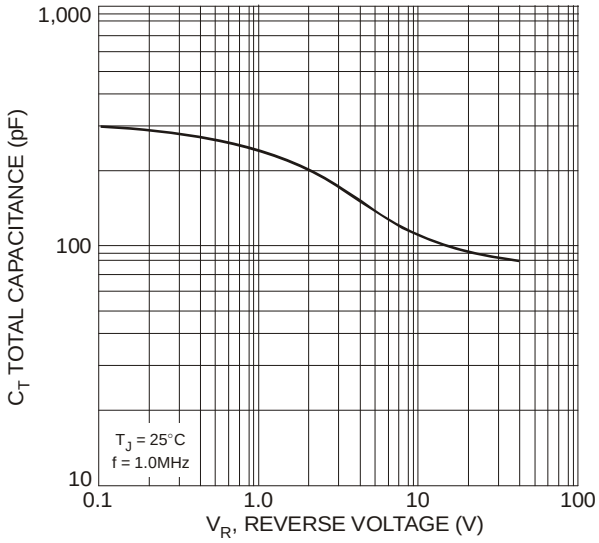
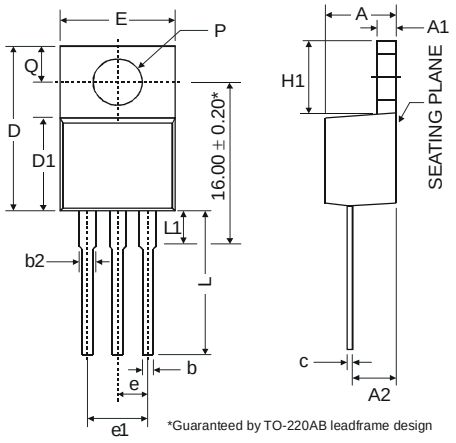


Fig. 5 Typical Total Capacitance, per Element

Package Outline Dimensions



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

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