

MBR30100xx

Schottky Barrier Rectifier

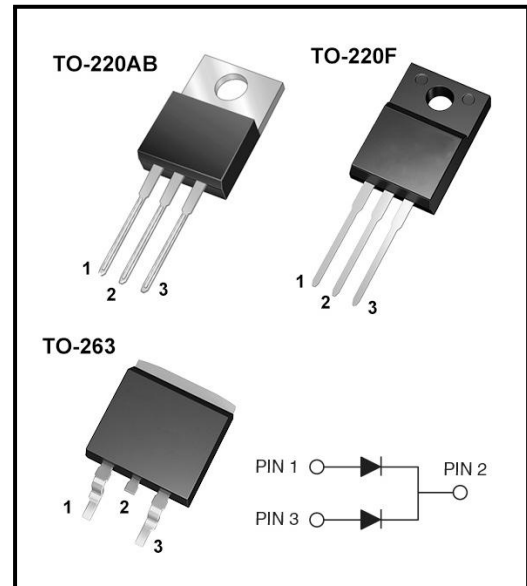
Features

- Low forward voltage drop
- High current capability
- High forward surge capability
- Low power losses, High efficiency
- Guarding for over voltage protection

Applications

Low VF Schottky barrier rectifier are designed for high frequency, miniature switched mode power supplies such as adapters ,lighting and on-board DC/DC conerters.

Package



Mechanical Data

- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106
- Case: Molded plastic
- Polarity: As marked
- Mounting Position: Any

Ordering information

Order code	Package	Base qty	Delivery mode
MBR30100CT	TO-220AB	50pcs/tube	1000pcs/box 5000pcs/carton
MBR30100FCT	TO-220F	50pcs/tube	1000pcs/box 5000pcs/carton
MBR30100BCT	TO-263	50pcs/tube	1000pcs/box 5000pcs/carton
MBR30100BCT-R	TO-263	800pcs/reel	800pcs/box 4000pcs/carton



MBR30100xx

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Maximum Ratings (@ $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameters	Value	Unit
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	100	V
V_{RWM}	Working Peak Reverse Voltage	100	V
V_{DC}	Maximum DC Blocking Voltage	100	V
I_O	Maximum Average Forward Rectified Current	Per Leg	15
		Total	30
I_{FSM}	Non-repetitive Peak Forward Surge Current 8.3ms Single half-sine-wave	350	A
$R_{\theta JC}$	Typical Thermal Resistance ¹	TO-220AB, TO-263	2
		TO-220F	4
T_J	Operating Junction Temperature Range	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$

Note1: Thermal resistance from Junction to case per leg mounted on the sink.

Electrical Characteristics (@ $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameters	Test Condition		Typ	Max	Unit
V_F	Forward Voltage Drop ²	at $I_F=5\text{A}$	$T_A = 25^{\circ}\text{C}$	0.71	—	V
			$T_A = 125^{\circ}\text{C}$	0.57	—	
		at $I_F=10\text{A}$	$T_A = 25^{\circ}\text{C}$	0.77	0.85	
			$T_A = 125^{\circ}\text{C}$	0.64	—	
		at $I_F=15\text{A}$	$T_A = 25^{\circ}\text{C}$	0.81	0.88	
			$T_A = 125^{\circ}\text{C}$	0.68	—	
I_R	Maximum Reverse Current	$V_R=100\text{V}$	$T_A = 25^{\circ}\text{C}$	0.6	10	μA
			$T_A = 125^{\circ}\text{C}$	0.6	—	mA

Note2: Pulse test: 300 μs pulse width, 1% duty cycle.



MBR30100xx

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Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1: Max. Forward Current Derating Curve

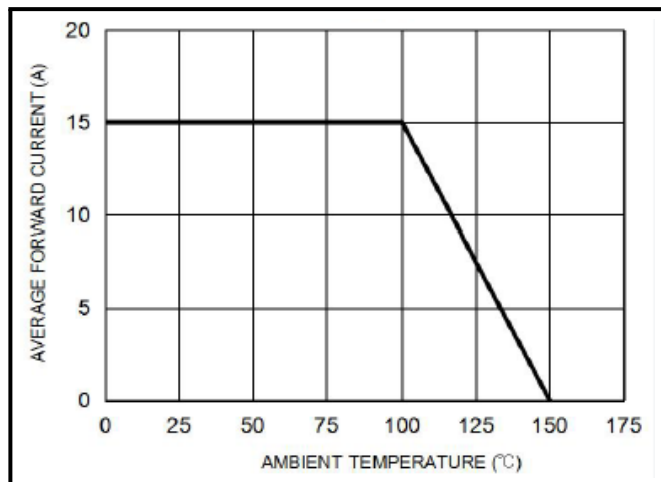


Figure 2: Max. Non-Repetitive Forward Surge Current

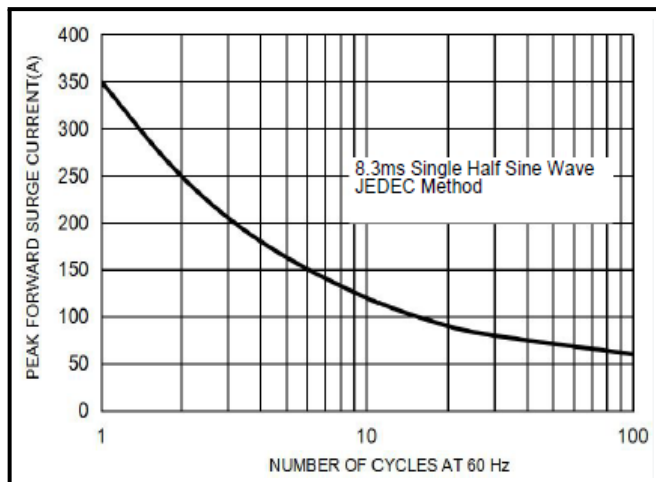


Figure 3: Typical Forward Characteristics

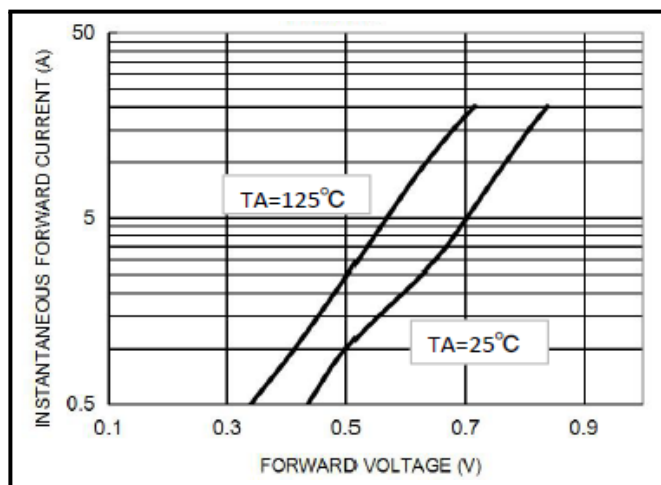
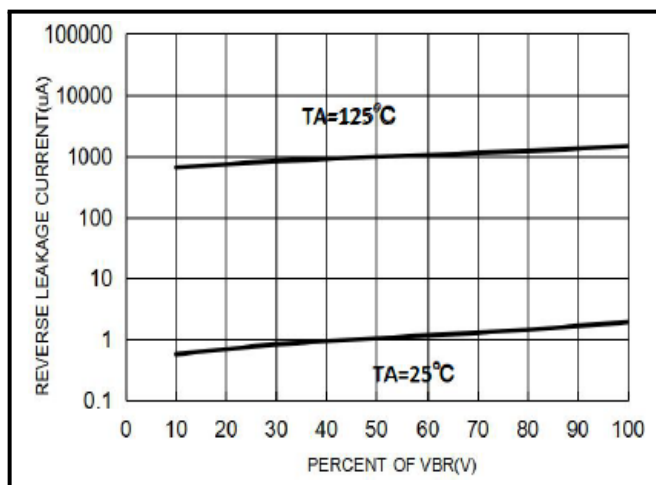


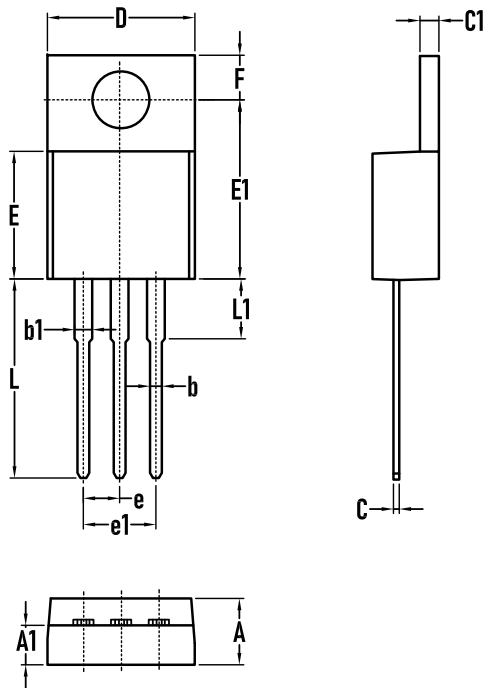
Figure 4: Typical Reverse Characteristics



MBR30100xx

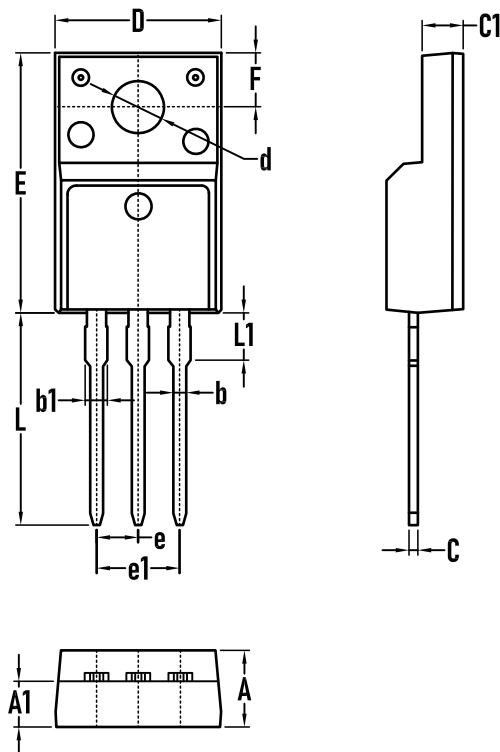
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Packaging Tape - TO-220AB



Symbol	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	2.52	2.67	2.82
b	0.71	0.81	0.91
b1	1.17	1.27	1.37
C	0.30	0.40	0.50
C1	1.17	1.27	1.37
D	9.90	10.00	10.20
E	8.50	8.70	8.90
E1	12.00	12.25	12.50
e	2.44	2.54	2.64
e1	4.88	5.08	5.26
F	2.60	2.75	2.80
L	13.00	13.50	14.00
L1	3.80	4.00	4.20

Packaging Tape - TO-220F



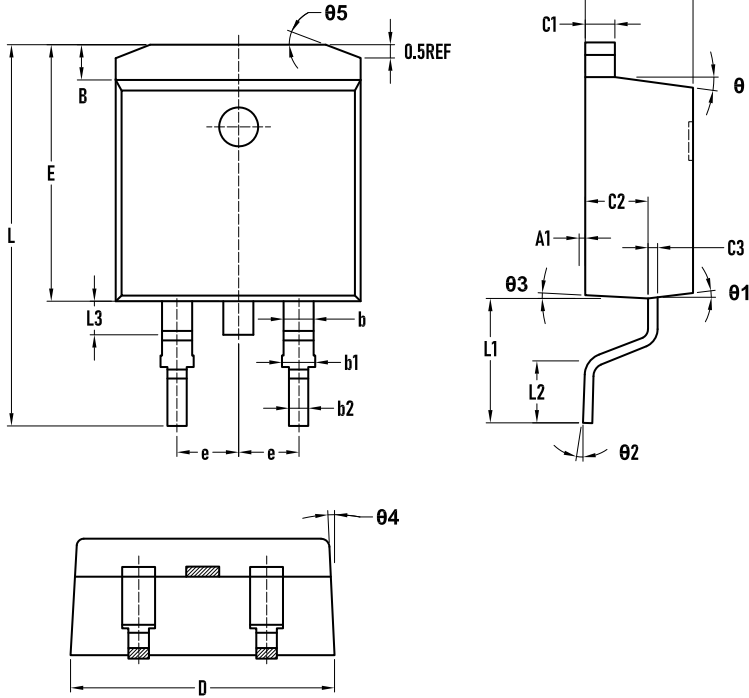
Symbol	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.60	4.80
A1	2.70	2.80	2.90
b	0.70	0.80	0.90
b1	1.20	1.30	1.40
C	0.40	0.50	0.60
C1	2.40	2.60	2.80
D	9.90	10.00	10.20
E	15.20	15.60	16.00
e	2.44	2.54	2.64
e1	4.88	5.08	5.26
F	3.00	3.30	3.60
L	12.70	13.20	13.70
L1	2.70	2.90	3.10
d	3.10	3.20	3.30



MBR30100xx

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Packaging Tape - TO-263



Symbol	Millimeters		
	MIN.	TYP.	MAX.
A1	0	—	0.25
B	1.32	1.37	1.42
b	—	1.27	—
b1	1.30	1.40	1.45
b2	—	0.81	—
C	4.52	4.57	4.62
C1	—	1.27	—
C2	2.64	2.69	2.74
C3	—	0.38	—
D	10.11	10.16	10.21
E	10.02	10.07	10.12
e	—	2.54	—0
L	14.65	14.95	15.25
L1	4.60	4.90	5.20
L2	2.25	2.45	2.65
L3	1.10	1.30	1.50
θ	6°	7°	8°
θ1	6°	7°	8°
θ2	0°	—	8°
θ3	2°	3°	4°
θ4	2°	3°	4°
θ5	—	—	20°

