

MBR2045xx

Schottky Barrier Rectifiers

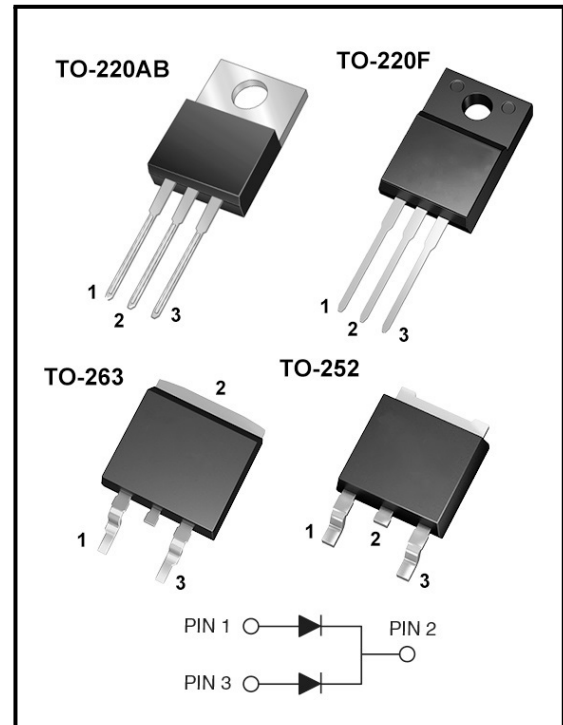
Features

- Low forward voltage
- 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 converters.

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
MBR2045CT	TO-220AB	50 pcs / tube	1000pcs/box 5000pcs/carton
MBR2045FCT	TO-220F	50 pcs / tube	1000pcs/box 5000pcs/carton
MBR2045BCT	TO-263	50 pcs / tube	1000pcs/box 5000pcs/carton
MBR2045BCT-R	TO-263	800 pcs / reel	1600pcs/box 8000pcs/carton
MBR2045DCT	TO-252	2500 pcs / reel	5000pcs/box 25000pcs/carton



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Maximum Ratings (@T_A=25°C unless otherwise noted)

Symbol	Parameters	Value	Unit
V _{RRM}	Rcurrent Peak Reverse Voltage	45	V
V _{RWM}	Working Peak Reverse Voltage	45	V
V _{DC}	DC Blocking Voltage	45	V
I _O	Average Forward Rectified Current(Per Leg)	10	A
	Average Forward Rectified Current(Total)	20	
I _{FSM}	Peak forward surge current 8.3 ms single half sine-wave	250	A
T _j	Operating junction temperature	150	°C
T _{STG}	Storage temperature range	-55 to +150	°C
R _{θJC}	Typical Thermal Resistance ⁽¹⁾ (TO-220AB,TO-263,TO-252)	2	°C/W
	Typical Thermal Resistance ⁽¹⁾ (TO-220F)	4	

Note:(1)Thermal resistance from Junction to case per leg mounted on heatsink.

Electrical Characteristics@ (T_A=25°C unless otherwise noted)

Symbol	Parameters	Test conditions	Typ	Max	Unit
V _F	Forward Voltage ⁽²⁾	I _F =3A, T _A =25°C	0.46	—	V
		I _F =3A, T _A =125°C	0.37	—	
		I _F =5A, T _A =25°C	0.50	—	
		I _F =5A, T _A =125°C	0.43	—	
		I _F =10A, T _A =25°C	0.59	0.65	
		I _F =10A, T _A =125°C	0.55	—	
I _R	Reverse Current	V _R =45V, T _A =25°C	8	40	uA
		V _R =45V, T _A =125°C	3	—	mA

Note:(2)Pulse test: 300 μs pulse width, 1% duty cycle.



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

Figure 1: MAX. Forward Current Derating Curve

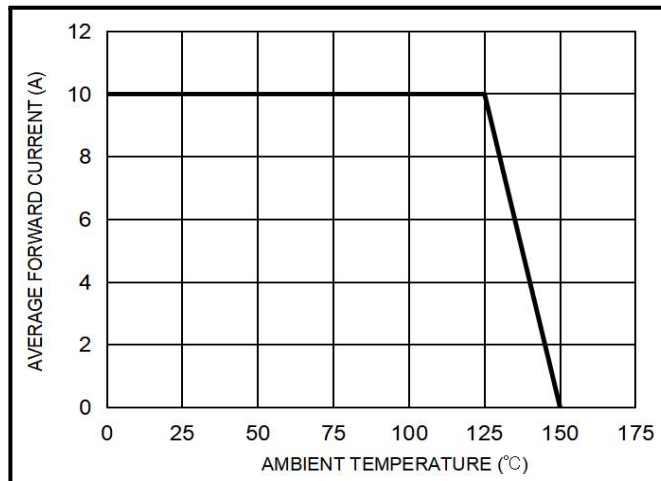


Figure 2: MAX. Non-Repetitive Forward Surge Current

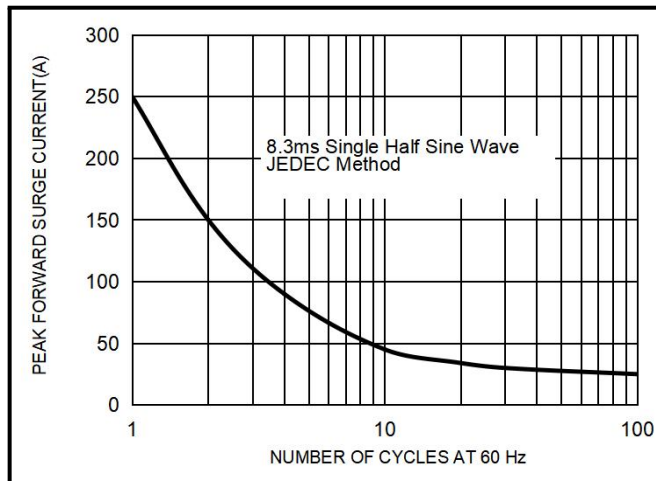


Figure 3: Typical Forward Characteristics

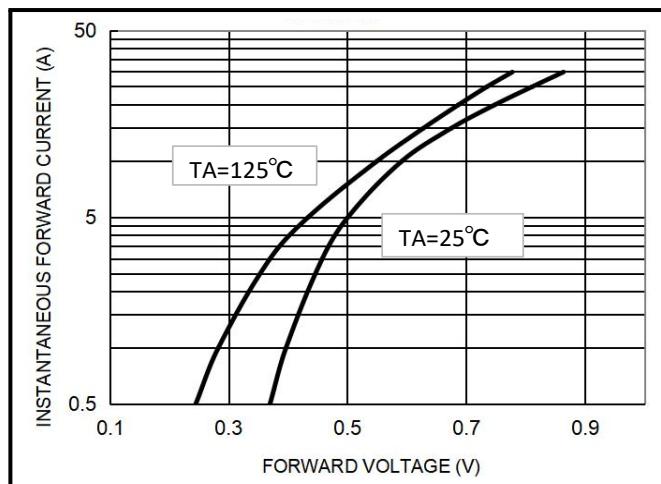
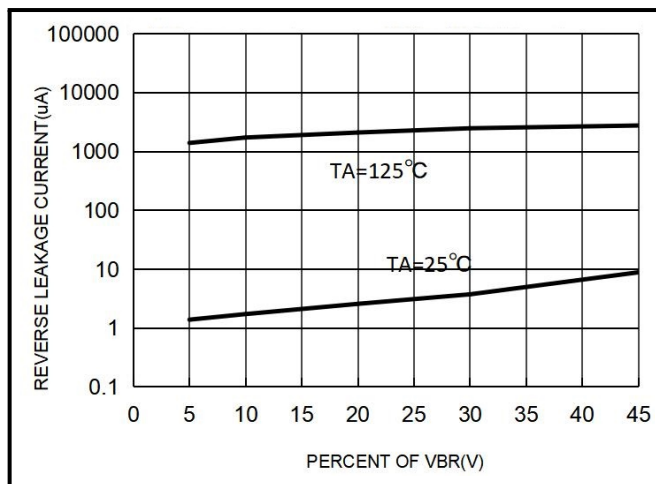


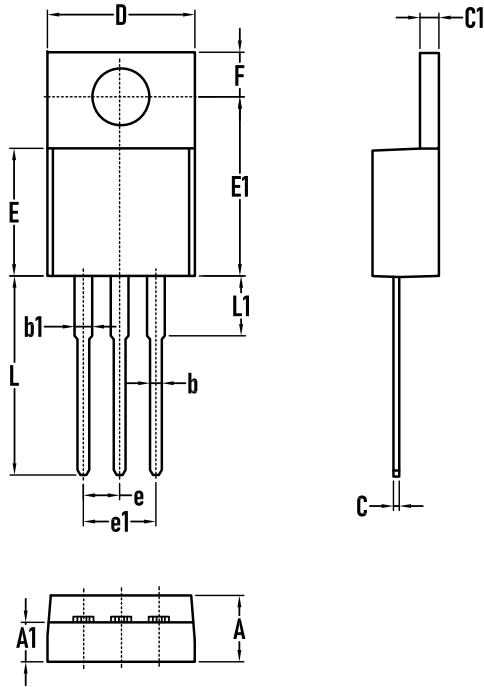
Figure 4: Typical Reverse Characteristics



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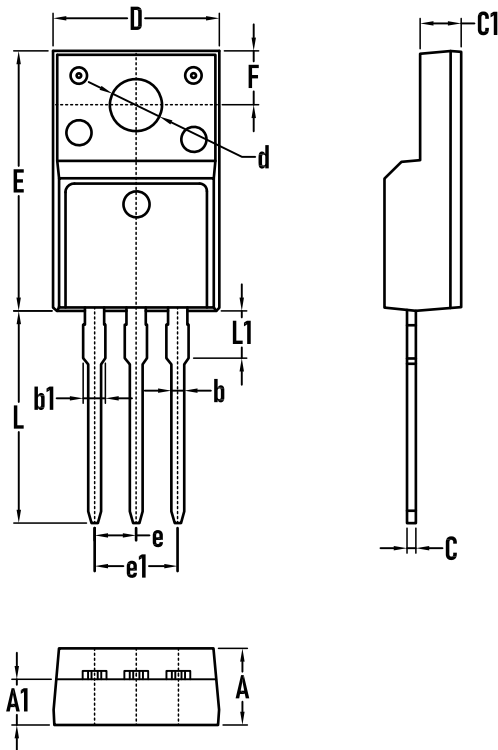
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Packaging Tape - TO-220AB



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



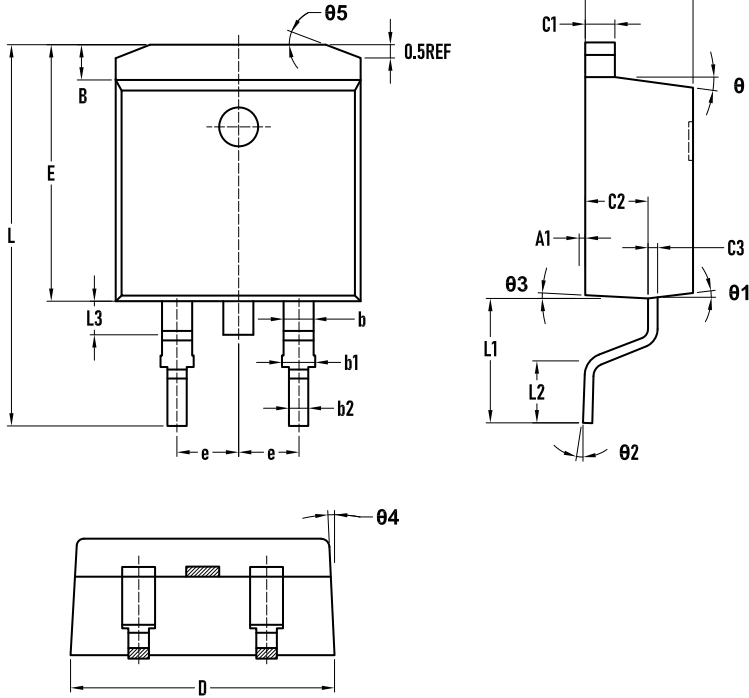
Symbol	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.60	4.80
A1	2.70	2.80	2.90
b	0.70	0.80	0.90
b1	1.20	1.30	1.40
C	0.40	0.50	0.60
C1	2.40	2.60	2.80
D	9.90	10.00	10.20
E	15.20	15.60	16.00
e	2.44	2.54	2.64
e1	4.88	5.08	5.26
F	3.00	3.30	3.60
L	12.70	13.20	13.70
L1	2.70	2.90	3.10
d	3.10	3.20	3.30



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Packaging Tape - TO-263



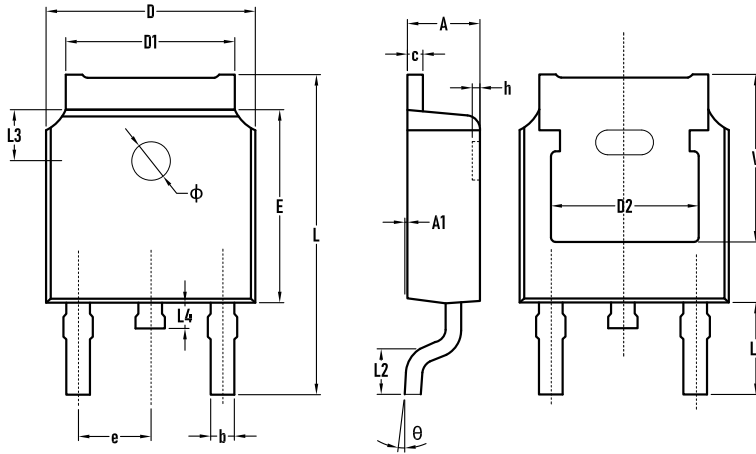
Symbol	Millimeters		
	MIN.	TYP.	MAX.
A1	0	—	0.25
B	1.32	1.37	1.42
b	—	1.27	—
b1	1.30	1.40	1.45
b2	—	0.81	—
C	4.52	4.57	4.62
C1	—	1.27	—
C2	2.64	2.69	2.74
C3	—	0.38	—
D	10.11	10.16	10.21
E	10.02	10.07	10.12
e	—	2.54	—0
L	14.65	14.95	15.25
L1	4.60	4.90	5.20
L2	2.25	2.45	2.65
L3	1.10	1.30	1.50
0	6°	7°	8°
01	6°	7°	8°
02	0°	—	8°
03	2°	3°	4°
04	2°	3°	4°
05	—	—	20°



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Packaging Tape - TO-252



Symbol	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
phi	1.100	1.300	0.043	0.051
theta	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	

