



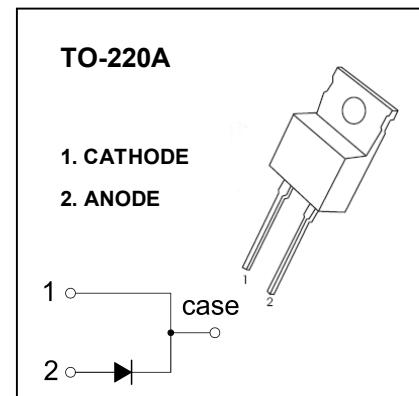
## TO-220A Plastic-Encapsulate Diodes

### **MBR1030,35,40,45,50**

SCHOTTKY BARRIER RECTIFIER

#### **FEATURES**

- 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



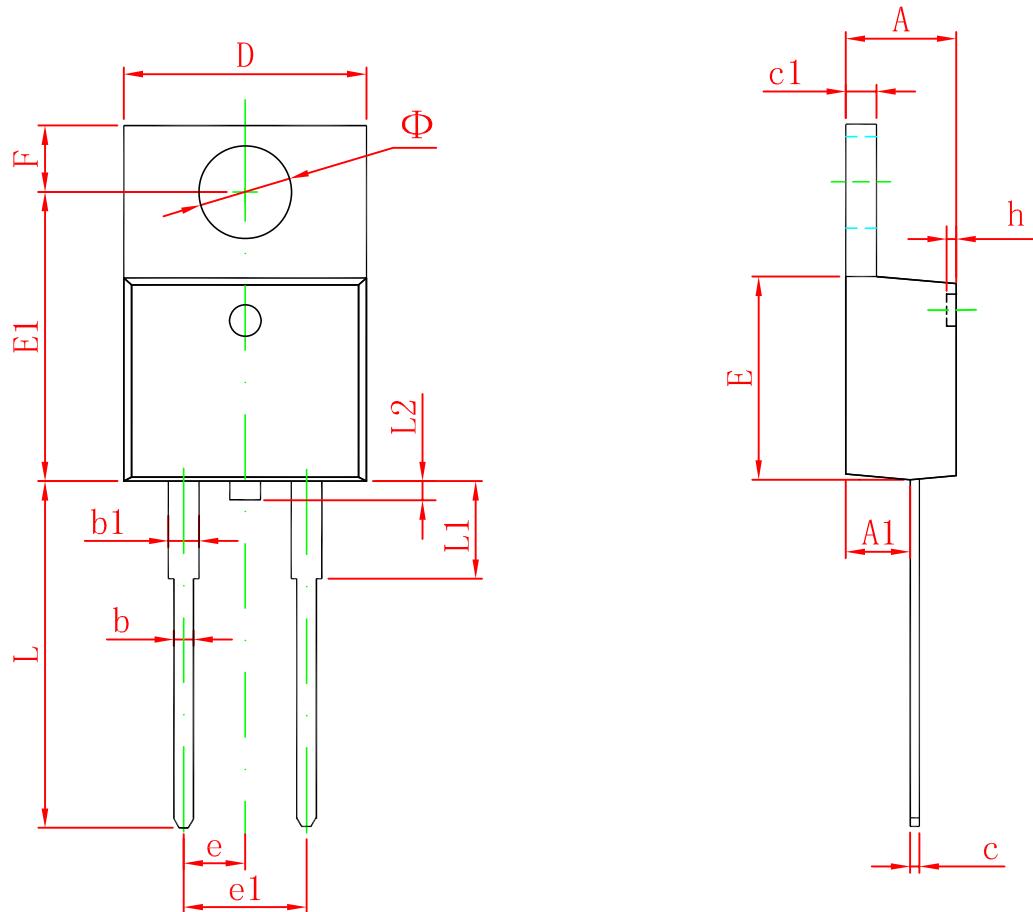
#### **MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted )**

Symbol	Parameter	Value					Unit
		MBR1030	MBR1035	MBR1040	MBR1045	MBR1050	
$V_{RRM}$	Peak repetitive reverse voltage						
$V_{RWM}$	Working peak reverse voltage	30	35	40	45	50	V
$V_R$	DC blocking voltage						
$V_{R(RMS)}$	RMS reverse voltage	21	24.5	28	31.5	35	V
$I_o$	Average rectified output current			10			A
$I_{FSM}$	Non-Repetitive peak forward surge current 8.3ms half sine wave			150			A
$P_D$	Power dissipation			2			W
$R_{\Theta JA}$	Thermal resistance from junction to ambient			50			$^\circ\text{C}/\text{W}$
$T_j$	Junction temperature			125			$^\circ\text{C}$
$T_{stg}$	Storage temperature			-55~+150			$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Device	Test conditions	Min	Typ	Max	Unit
<b>Reverse voltage</b>	V <sub>(BR)</sub>	MBR1030	I <sub>R</sub> =1mA	30			V
		MBR1035		35			
		MBR1040		40			
		MBR1045		45			
		MBR1050		50			
<b>Reverse current</b>	I <sub>R</sub>	MBR1030	V <sub>R</sub> =30V			0.1	mA
		MBR1035	V <sub>R</sub> =35V				
		MBR1040	V <sub>R</sub> =40V				
		MBR1045	V <sub>R</sub> =45V				
		MBR1050	V <sub>R</sub> =50V				
<b>Forward voltage</b>	V <sub>F</sub>	MBR1030-45	I <sub>F</sub> =10A			0.84	V
		MBR1050				0.95	
<b>Typical junction capacitance</b>	C <sub>j</sub>	MBR1030-50	V <sub>R</sub> =4V,f=1MHz		400		pF

## TO-220A Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
L2		1.000		0.039
Φ	3.735	3.935	0.147	0.155