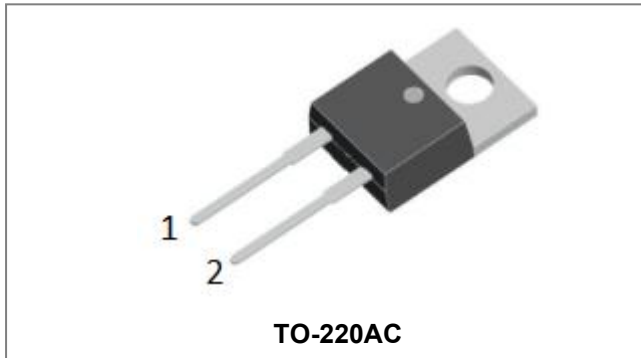


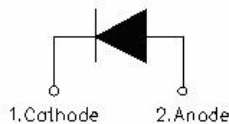
## MBR20150 SCHOTTKY RECTIFIER



### Features

- 150 °C T<sub>J</sub> operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced
- mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	150	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage	V <sub>R</sub>			
Average Rectified Forward Current (Per Device)	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =110°C, rectangular wave form	20	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	250	A
Non-Repetitive Avalanche Energy	E <sub>AS</sub>	T <sub>J</sub> = 25°C, I <sub>AS</sub> = 2 A, L = 1mH	2	mJ

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V <sub>F1</sub>	@ 20A, Pulse, T <sub>J</sub> = 25 °C	0.85	0.95	V
	V <sub>F2</sub>	@ 20 A, Pulse, T <sub>J</sub> = 125 °C	0.72	0.92	V
Reverse Current(Per Leg)*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C	0.0008	1.0	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C	0.3	15.0	mA
Junction Capacitance(Per Leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	450	900	pF
Series Inductance(Per Leg)	L <sub>S</sub>	Measured lead to lead 5 mm from package body	8.0	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

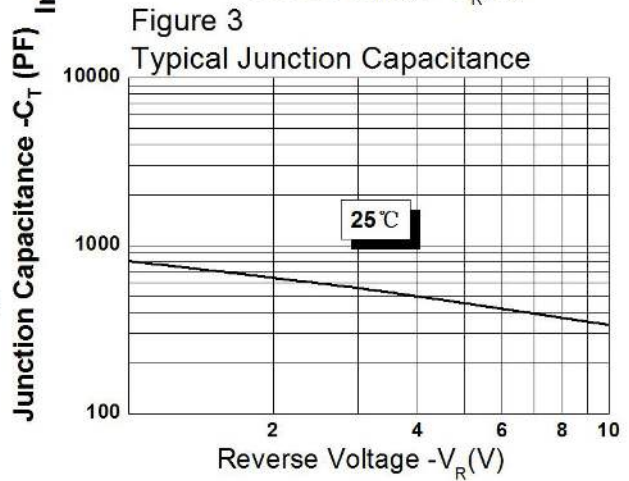
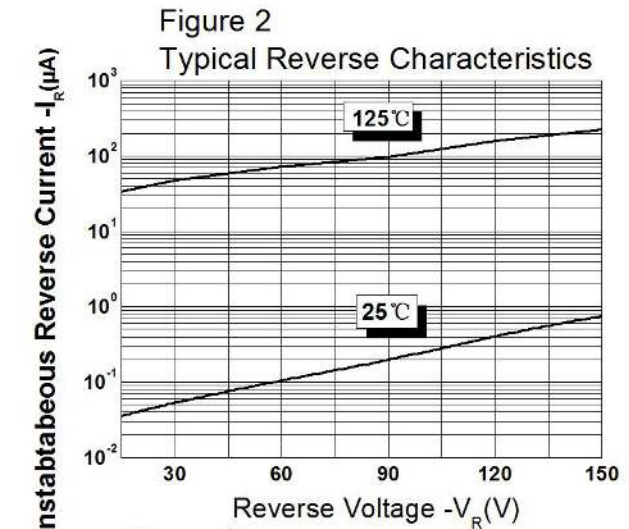
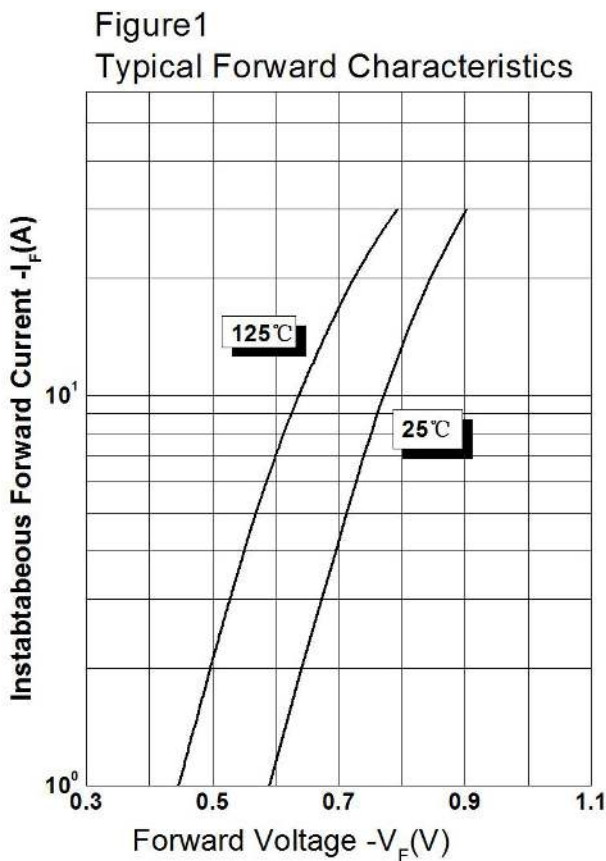
\* Pulse width < 300 μs, duty cycle < 2%

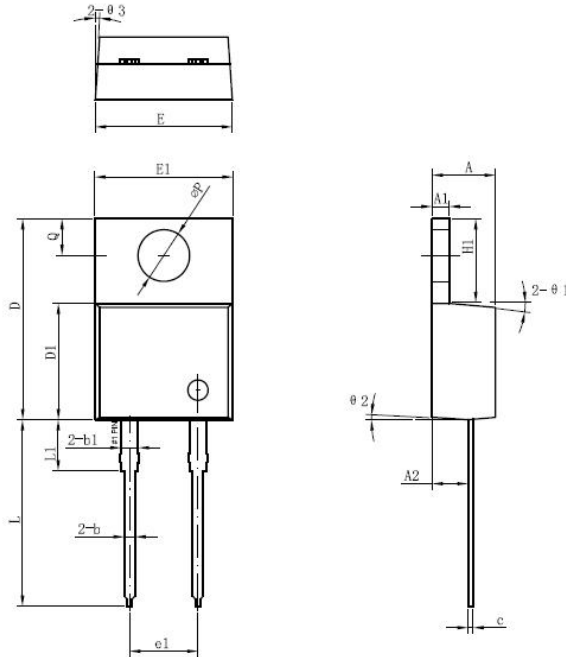
- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**Thermal-Mechanical Specifications:**

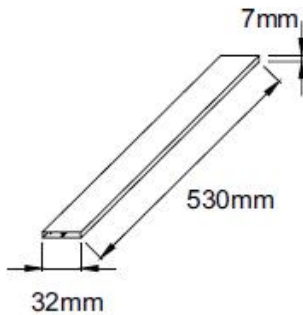
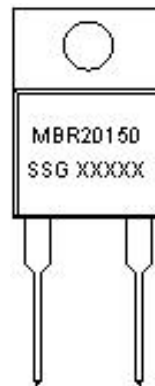
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta\text{JC}}$	DC operation	3	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	1.6	g
Case Style	TO-220AC			

**Ratings and Characteristics Curves**



**Mechanical Dimensions TO-220AC**


Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.47	4.70	4.85
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	0.38	0.61
D	14.64	14.94	15.24
D1	8.50	8.07	8.90
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1	4.98	5.08	5.18
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1	3.56	3.80	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		5°	
Θ2		4°	
Θ3		4°	

**Tube Specification**

**Marking Diagram**


Where XXXXX is YYWWL

MBR = Device Type  
 20 = Forward Current (20A)  
 150 = Reverse Voltage(150V)  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

**Ordering Information**

Device	Package	Shipping
MBR20150	TO-220AC (Pb-Free)	50 pcs/ tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging Specification.

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