



Technical Data  
Data Sheet N0763, Rev. -

*Green Products*

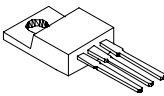
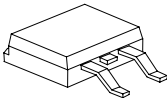
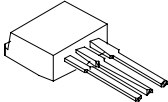
**MBR20200CT/MBRB20200CT/MBR20200CT-1**  
**SCHOTTKY RECTIFIER**

**Applications:**

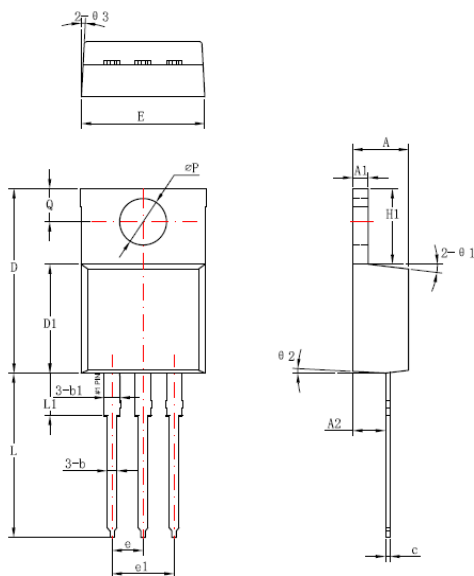
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

**Features:**

- 175 °C T<sub>J</sub> operation
- Center tap configuration
- 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

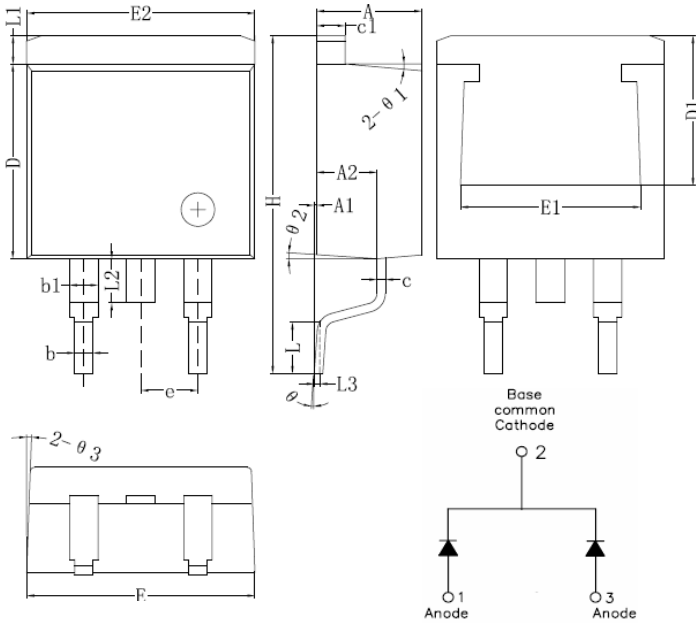
Case styles		
<b>MBR20200CT</b>    <b>TO-220AB</b>	<b>MBRB20200CT</b>    <b>D<sup>2</sup>PAK</b>	<b>MBR20200CT-1</b>    <b>TO-262</b>

**Mechanical Dimensions: In Inches / mm**



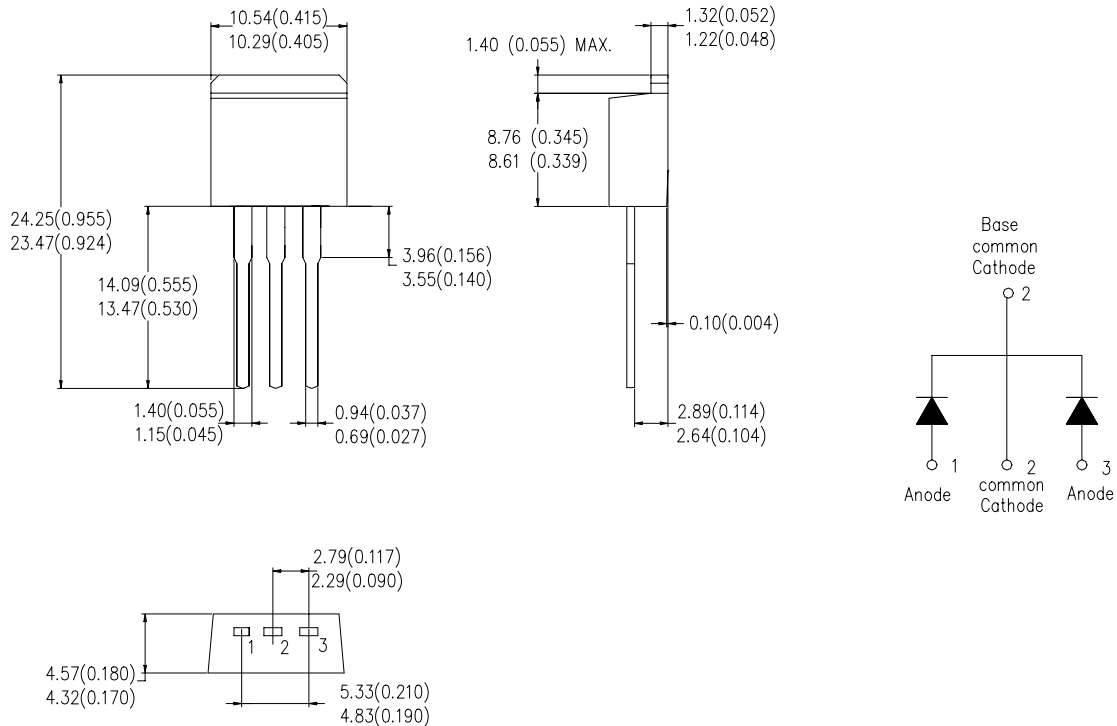
Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		7°	
θ2		3°	
θ3		4°	

**TO-220AB**



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

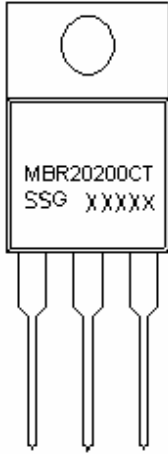
**D<sup>2</sup>PAK**



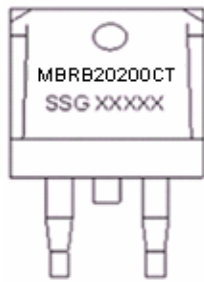
**TO-262**



**Marking Diagram:**



MBR20200CT



MBRB20200CT

Where XXXXX is YYWWL

- MBR = Device Type
- B = Package type
- 20 = Forward Current (20A)
- 200 = Reverse Voltage (200V)
- CT/CT-1 = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Ordering Information:**

Device	Package	Shipping
MBR20200CT	TO-220AB (Pb-Free)	50pcs / tube
MBRB20200CT	D <sup>2</sup> PAK (Pb-Free)	800pcs / reel

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

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	200	V
Maximum RMS Voltage	$V_{RMS}$	-	140	V
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C = 125^\circ C$ , rectangular wave form	10(Per leg) 20(Per device)	A
Peak Repetitive Surge current (Rated $V_R$ , Square Wave, 20KHz)	$I_{RRM}$	-	0.5	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	180	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg)*	V <sub>F1</sub>	@ 10A, Pulse, T <sub>J</sub> = 25 °C	0.90	V
	V <sub>F2</sub>	@ 10A, Pulse, T <sub>J</sub> = 125 °C	0.80	V
Max. Reverse Current (per leg)*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	1.00	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	50	mA
Max. Junction Capacitance (per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	500	pF
Typical Series Inductance (per leg)	L <sub>S</sub>	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/μs

\* Pulse Width < 300μs, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T <sub>J</sub>	-	-55 to +175	°C
Max. Storage Temperature	T <sub>stg</sub>	-	-55 to +150	°C
Maximum Thermal Resistance Junction to Case (per leg)	R <sub>θJC</sub>	DC operation	1.5	°C/W
Approximate Weight	wt	-	2	g
Case Style	TO-220AB/D <sup>2</sup> PAK/TO-262			

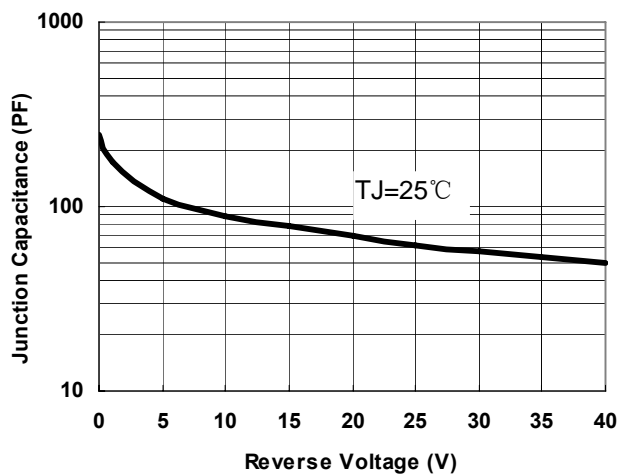


Fig.1-Typical Junction Capacitance

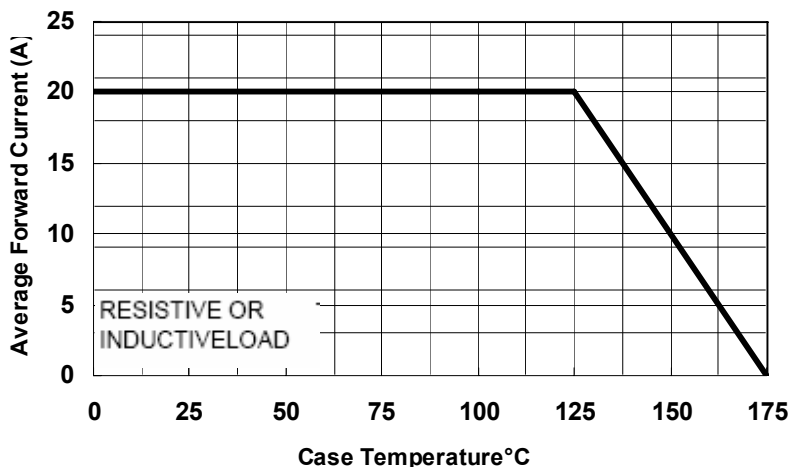


Fig.2-Forward current derating curve

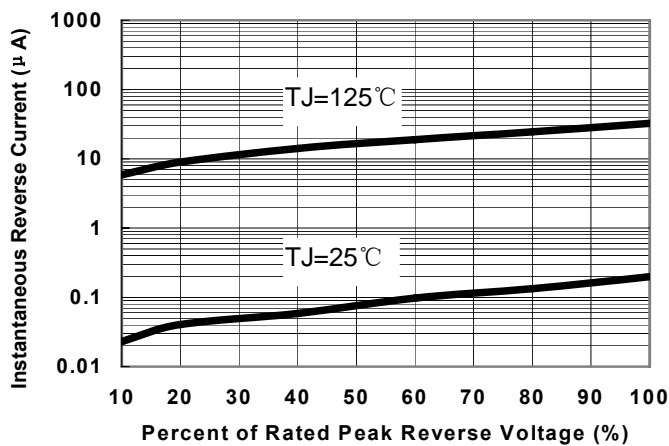


Fig.3-Typical Reverse Characteristics

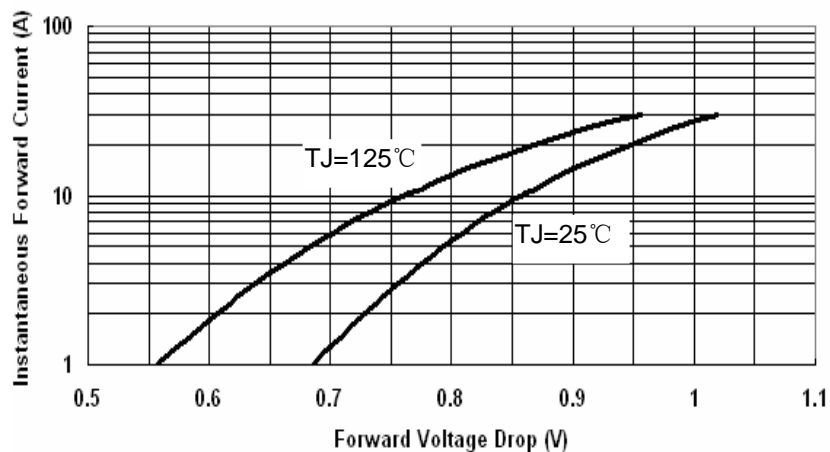


Fig.4-Typical Instantaneous Forward Voltage Characteristics

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