




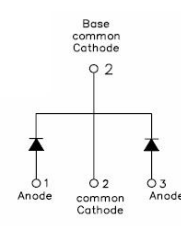
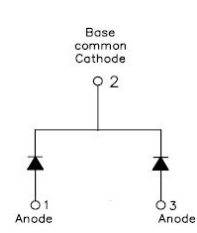
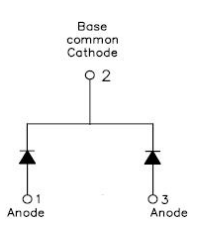
MBR20200CT/MBRB20200CT/MBR20200CT-1
SCHOTTKY RECTIFIER

Features

- 175 °C T_J 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

Applications

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

| MBR20200CT | MBRB20200CT | MBR20200CT-1 |
|---|---|---|
|  |  |  |
|  |  |  |
| TO-220AB | D2PAK | TO-262 |

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|---|--------------------|--|-------------------------------|-------|
| Peak Repetitive Reverse Voltage | V _{RRM} | - | 200 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | |
| DC Blocking Voltage | V _R | | | |
| Average Rectified Forward Current | I _{F(AV)} | 50% duty cycle @T _c =125°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 |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I _{FSM} | 8.3ms, Half Sine pulse | 180 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|---------------------------------|-----------------|---|-------|------|-------|
| Forward Voltage Drop (Per Leg)* | V _{F1} | @ 10A, Pulse, T _J = 25 °C | 0.85 | 0.90 | V |
| | V _{F2} | @ 10A, Pulse, T _J = 125 °C | 0.73 | 0.80 | V |
| Reverse Current (Per Leg)* | I _{R1} | @V _R = rated V _R , T _J = 25 °C | 0.002 | 1.00 | mA |
| | I _{R2} | @V _R = rated V _R , T _J = 125 °C | 0.9 | 50 | mA |
| Junction Capacitance(Per Leg) | C _T | @V _R = 5V, T _C = 25 °C, f _{sig} = 1MHz | 174 | 500 | pF |

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

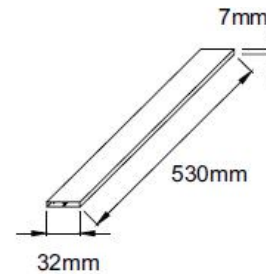
Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|------------------------------------|--------------|---------------|-------|
| Junction Temperature | T _J | - | -55 to +175 | °C |
| Storage Temperature | T _{stg} | - | -55 to +175 | °C |
| Typical Thermal Resistance Junction to Case | R _{θJC} | DC operation | 1.5 | °C/W |
| Case Style | TO-220AB D ² PAK TO-262 | | | |

Tube Specification

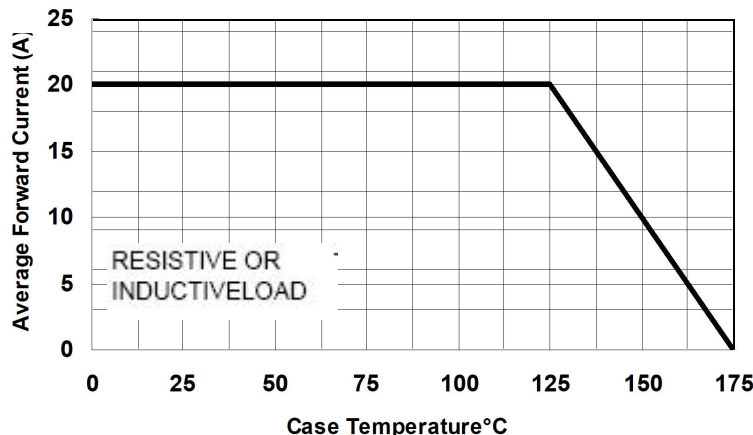
| Device | Package | Weight | Shipping |
|--------------|--------------------|--------|---------------|
| MBR20200CT | TO-220AB | 1.8g | 50pcs / tube |
| MBRB20200CT | D ² PAK | 1.85g | 800pcs / reel |
| MBR20200CT-1 | TO-262 | 1.85g | 50pcs / tube |

Tube Specification(TO-220AB/TO-262)



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

Ratings and Characteristics Curves



Forward current derating curve

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

Figure 1
Typical Forward Characteristics

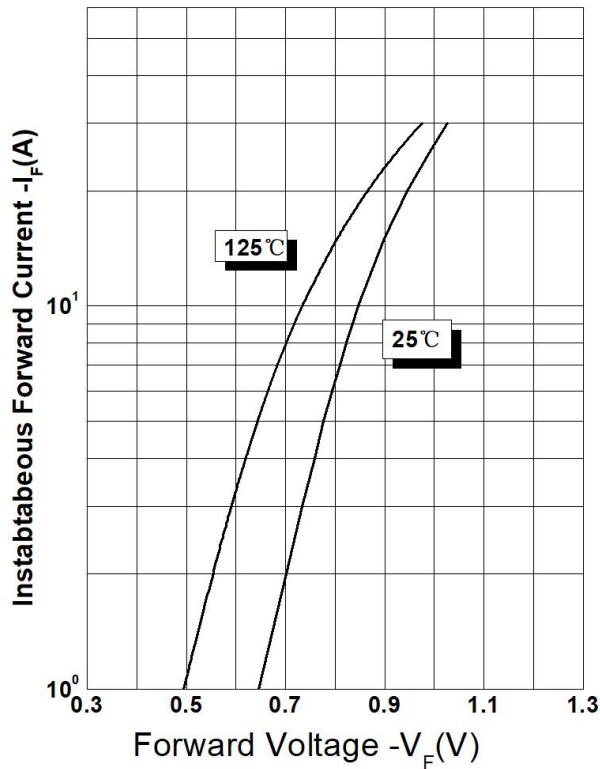


Figure 2
Typical Reverse Characteristics

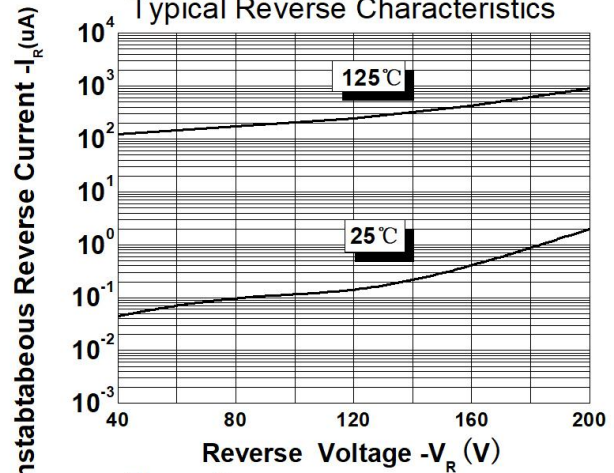
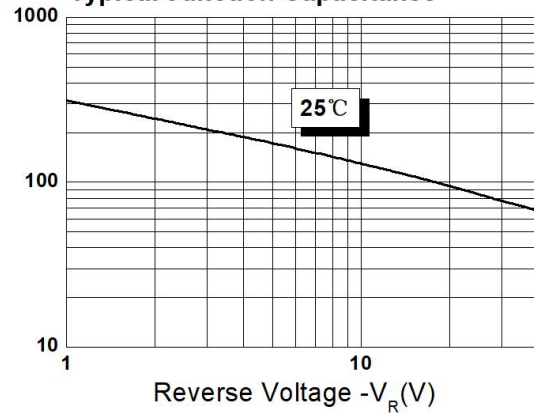
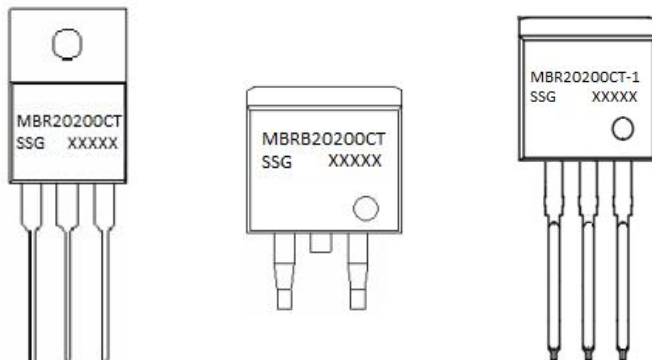


Figure 3
Typical Junction Capacitance



Marking Diagram

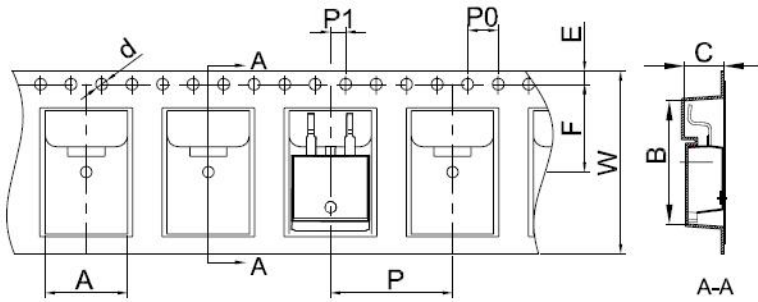


Where XXXXX is YYWWL

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

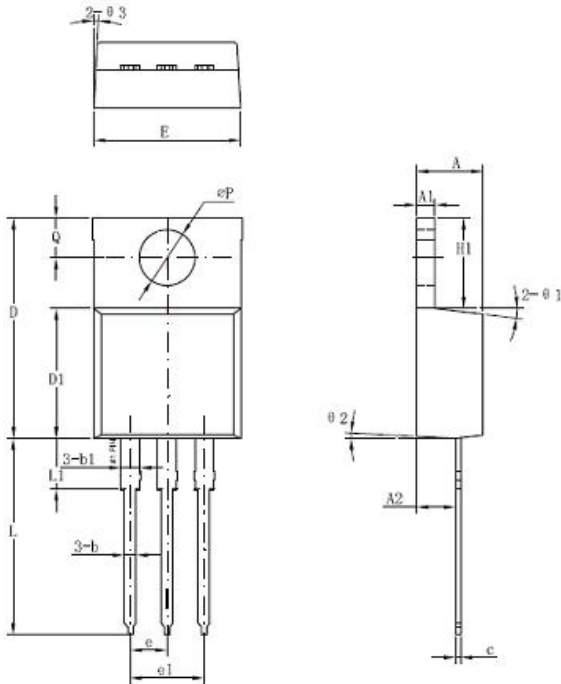
Cautions: Molding resin
Epoxy resin UL:94V-0

Carrier Tape Specification D2PAK



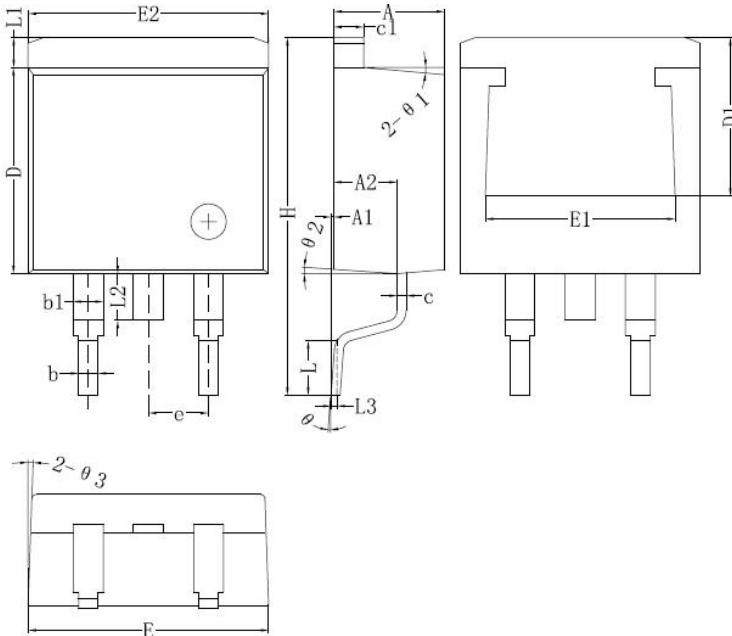
| Symbol | Millimeters | |
|--------|-------------|-------|
| | Min. | Max. |
| A | 10.70 | 10.90 |
| B | 16.03 | 16.23 |
| C | 5.11 | 5.31 |
| d | 1.45 | 1.65 |
| E | 1.65 | 1.85 |
| F | 11.40 | 11.60 |
| P0 | 3.90 | 4.10 |
| P | 15.90 | 16.10 |
| P1 | 1.90 | 2.10 |
| W | 23.90 | 24.30 |

Mechanical Dimensions TO-220AB



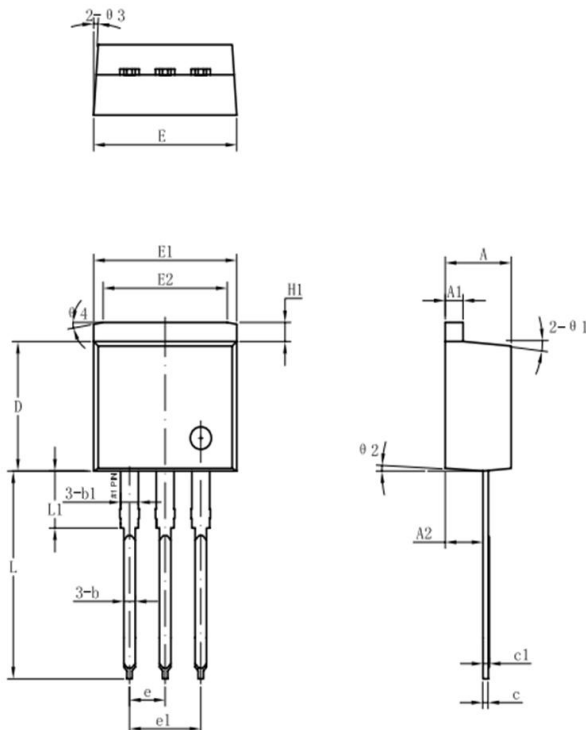
| Symbol | Millimeters | | |
|--------|-------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.42 | 4.57 | 4.72 |
| A1 | 1.17 | 1.27 | 1.37 |
| A2 | 2.52 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| D | 14.94 | 15.24 | 15.54 |
| D1 | 8.85 | 9.00 | 9.15 |
| E | 10.01 | 10.16 | 10.31 |
| e | | 2.54 | |
| e1 | 4.98 | 5.06 | 5.18 |
| H1 | 6.04 | 6.24 | 6.44 |
| L | 12.7 | 13.56 | 13.80 |
| L1 | 3.56 | 3.5 | 3.96 |
| ΦP | 3.74 | 3.84 | 4.04 |
| Q | 2.54 | 2.74 | 2.94 |
| θ1 | | 7° | |
| θ2 | | 3° | |
| θ3 | | 4° | |

Mechanical Dimensions D²PAK



| Symbol | Millimeters | | |
|--------|-------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.47 | 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 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| c1 | 1.17 | 1.27 | 1.37 |
| D | 8.50 | 8.70 | 8.90 |
| D1 | 6.40 | | |
| E | 10.01 | 10.16 | 10.31 |
| E1 | 7.6 | | |
| E2 | 9.98 | 10.08 | 10.31 |
| e | | 2.54 | |
| H | 14.6 | 15.1 | 15.6 |
| L | 2.00 | 2.30 | 2.74 |
| L1 | 1.12 | 1.27 | 1.42 |
| L2 | 1.30 | | 2.20 |
| L3 | | 0.25BSC | |
| e | 0 | - | 8° |
| e1 | | 5° | |
| e2 | | 4° | |
| e3 | | 4° | |

Mechanical Dimensions TO-262



| Symbol | 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° | |

Technical Data
Data Sheet N0763, Rev. A





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