



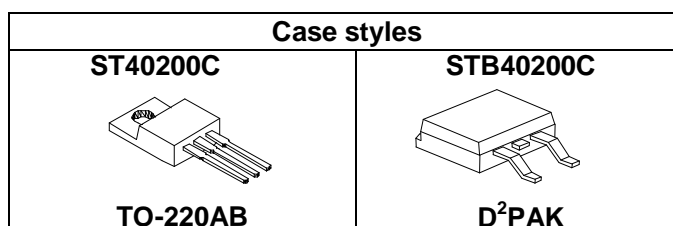
## ST40200C/STB40200C SCHOTTKY RECTIFIER

### Applications:

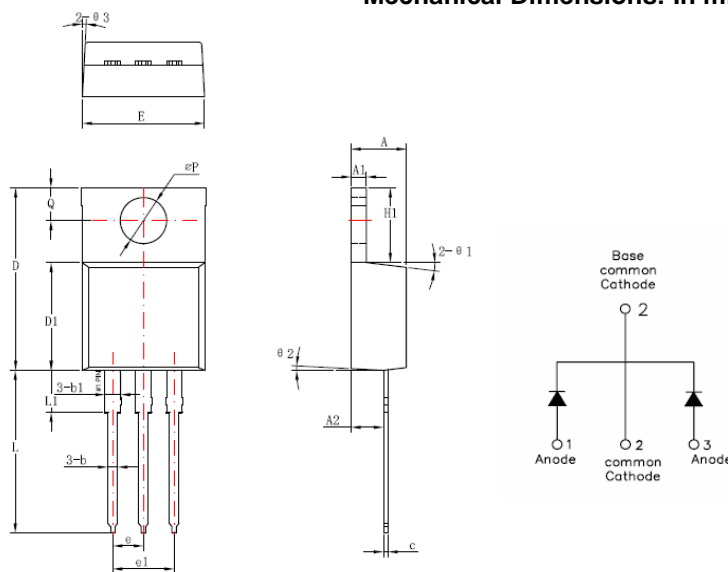
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 150 °C T<sub>J</sub> operation
- Center tap configuration
- Ultralow 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

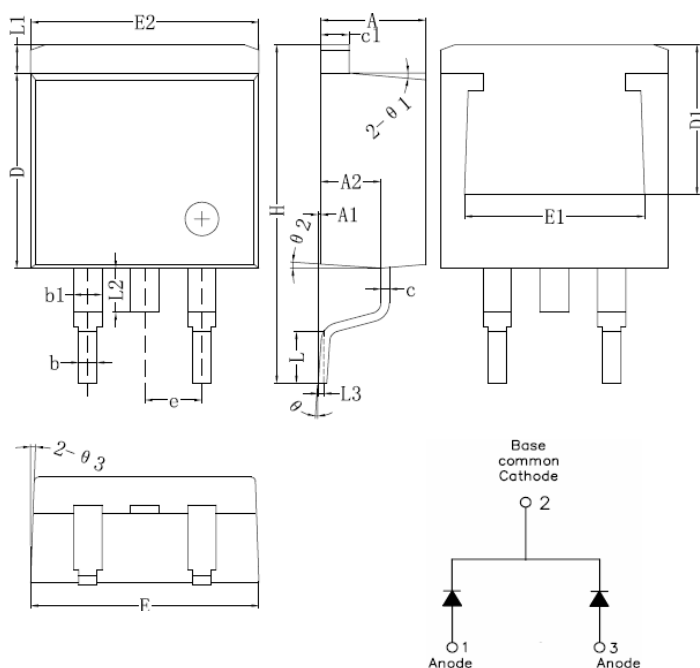


Mechanical Dimensions: In mm



| 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  |
| Ø1     |                           | 7°      |       |
| Ø2     |                           | 3°      |       |
| Ø3     |                           | 4°      |       |

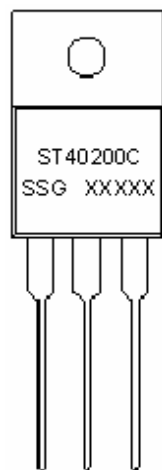
**TO-220AB**



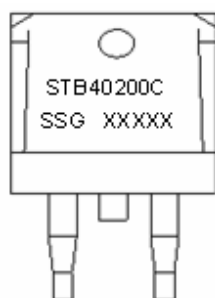
| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min.                      | Typical | Max.  |
| A      | 4.55                      | 4.70    | 4.85  |
| A1     | 0                         | 0.10    | 0.25  |
| A2     | 2.59                      | 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**

**Marking Diagram:**



ST40200C



STB40200C

Where XXXXX is YYWWL

ST = Device Type  
 B = Package type  
 40 = Forward Current (40A)  
 200 = Reverse Voltage (400V)  
 C = Configuration  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Ordering Information:**

| Device    | Package                     | Shipping      |
|-----------|-----------------------------|---------------|
| ST40200C  | TO-220AB(Pb-Free)           | 50pcs / tube  |
| STB40200C | 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     |
| Average Forward Current                                     | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 100^\circ\text{C}$ ,<br>rectangular wave form | 40   | A     |
| Peak One Cycle<br>Non-Repetitive Surge Current<br>(per leg) | $I_{FSM}$   | 8.3 ms, half Sine pulse   | 250  | A     |



**Electrical Characteristics:**

| Characteristics                  | Symbol   | Condition   | Max.   | Units            |
|----------------------------------|----------|---|--------|------------------|
| Forward Voltage Drop (per leg) * | $V_{F1}$ | @ 20A, Pulse, $T_J = 25\text{ }^\circ\text{C}$                                    | 1.60   | V                |
|                                  | $V_{F2}$ | @ 20A, Pulse, $T_J = 125\text{ }^\circ\text{C}$                                   | 0.76   | V                |
| Reverse Current (per leg)        | $I_{R1}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 25\text{ }^\circ\text{C}$                   | 0.3    | mA               |
|                                  | $I_{R2}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 125\text{ }^\circ\text{C}$                  | 36     | mA               |
| Junction Capacitance (per leg)   | $C_T$    | @ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$<br>$f_{SIG} = 1\text{MHz}$ | 1000   | pF               |
| Voltage Rate of Change           | dv/dt    | -   | 10,000 | V/ $\mu\text{s}$ |

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

**Thermal-Mechanical Specifications:**

| Characteristics                                      | Symbol                       | Condition    | Specification | Units              |
|--|------------------------------|--------------|---------------|--------------------|
| Junction Temperature                                 | $T_J$                        | -            | -55 to +150   | $^\circ\text{C}$   |
| Storage Temperature                                  | $T_{stg}$                    | -            | -55 to +150   | $^\circ\text{C}$   |
| Maximum Thermal Resistance Junction to Case(per leg) | $R_{\theta JC}$              | DC operation | 1.8           | $^\circ\text{C/W}$ |
| Approximate Weight                                   | wt                           | -            | 2/1.85        | g                  |
| Case Style   | TO-220AB/ D <sup>2</sup> PAK |              |               |                    |



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