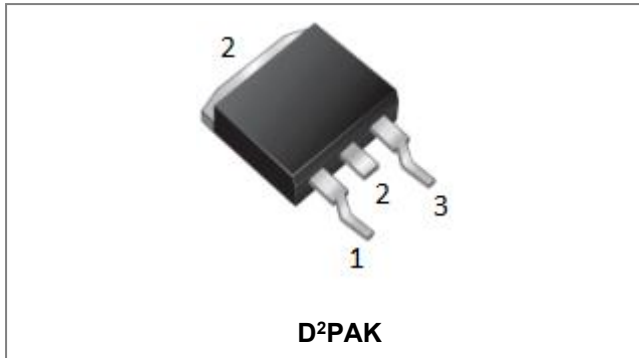


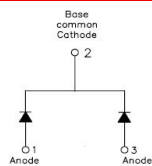
## SB2540DC SCHOTTKY RECTIFIER



### Features

- 200°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

### Circuit Diagram



### Applications

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

### Maximum Ratings:

| Characteristics  | Symbol   | Condition  | Max.                            | Units |
|--|--|--|---------------------------------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | -  | 40                              | V     |
| Average Rectified Forward Current  | I <sub>F(AV)</sub>                                     | 50% duty cycle @T <sub>c</sub> =95°C,<br>rectangular wave form | 12.5(Per Leg)<br>25(Per Device) | A     |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg)                                   | I <sub>FSM</sub>                                       | 8.3ms, Half Sine pulse   | 240                             | A     |

### Electrical Characteristics:

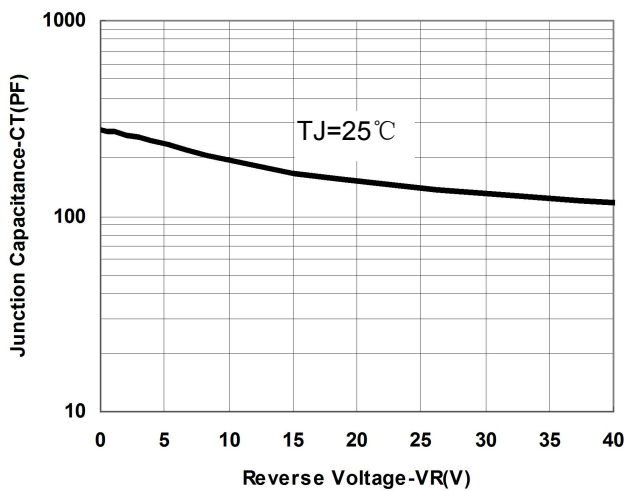
| Characteristics                  | Symbol          | Condition   | Typ. | Max.   | Units |
|----------------------------------|-----------------|---|------|--------|-------|
| Forward Voltage Drop (Per Leg) * | V <sub>F1</sub> | @ 12.5A, Pulse, T <sub>J</sub> = 25 °C                                | 0.45 | 0.55   | V     |
|                                  | V <sub>F2</sub> | @ 12.5A, Pulse, T <sub>J</sub> = 125 °C                               | 0.40 | 0.50   | V     |
| Reverse Current (Per Leg) *      | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C       | 0.01 | 1      | mA    |
|                                  | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C      | 7    | 30     | 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 | 300  | 500    | 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%

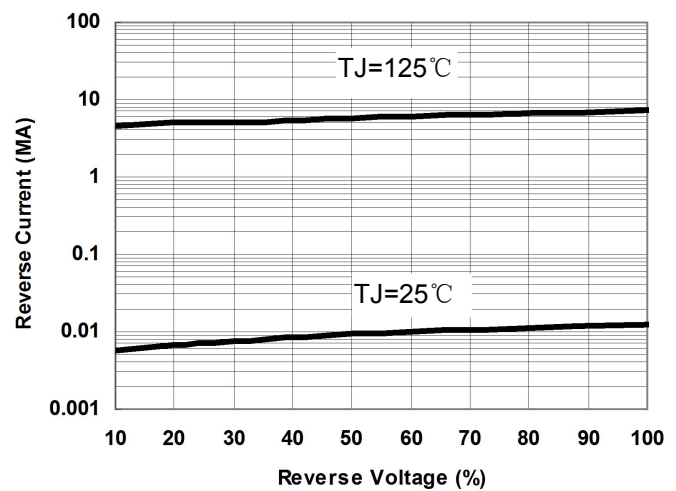
**Thermal-Mechanical Specifications:**

| Characteristics   | Symbol             | Condition  | Specification                             | Units         |
|---|--------------------|--|---|---------------|
| Junction Temperature at reduced reverse voltage at reduced reverse voltage in DC forward mode | $T_J$              | $V_R \leq 80\% V_{RRM}$<br>$V_R \leq 50\% V_{RRM}$ | -55 to +150<br>-55 to +180<br>-55 to +200 | $^{\circ}C$   |
| Storage Temperature   | $T_{stg}$          | -  | -55 to +200                               | $^{\circ}C$   |
| Typical Thermal Resistance Junction to Case(Per Leg)  | $R_{\theta JC}$    | DC operation                                       | 2.0                                       | $^{\circ}C/W$ |
| Approximate Weight  | wt                 | -  | 1.85                                      | g             |
| Case Style  | D <sup>2</sup> PAK |  |   |               |

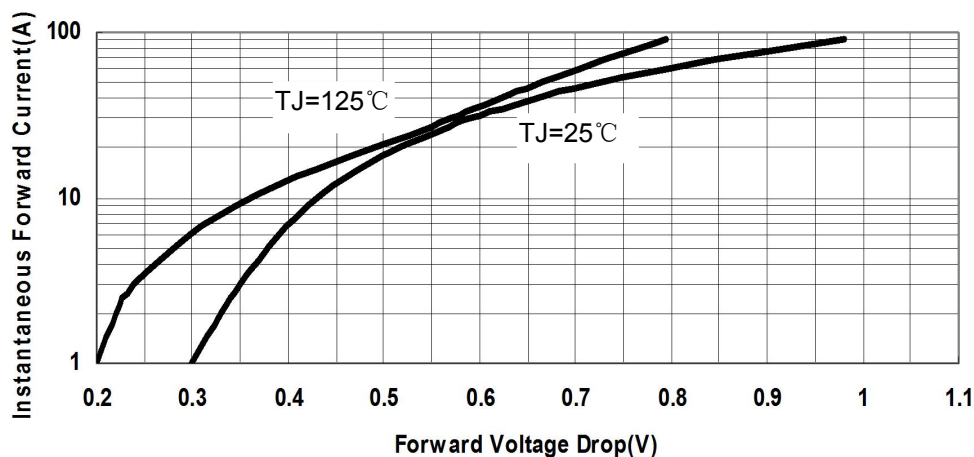
**Ratings and Characteristics Curves**



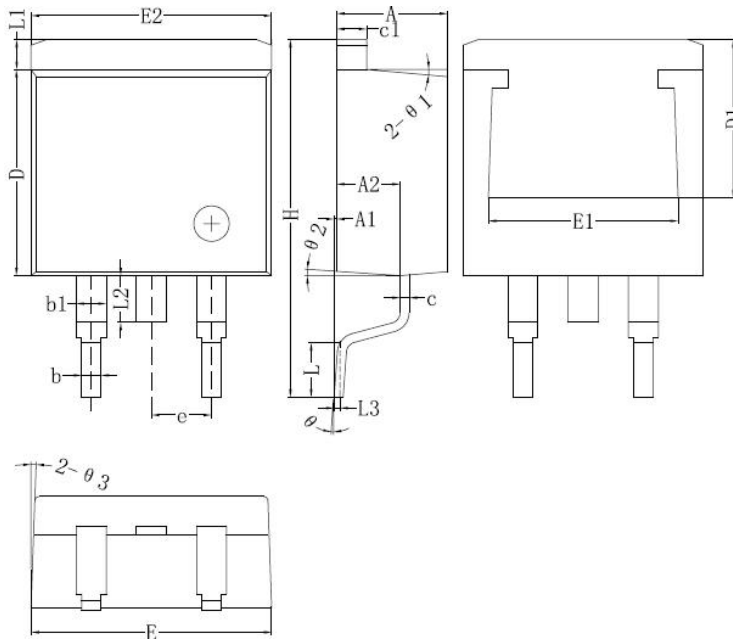
**Fig.1-Typical Junction Capacitance**



**Fig.2-Typical Reverse Characteristics**



**Fig.3-Typical Instantaneous Forward Voltage Characteristics**

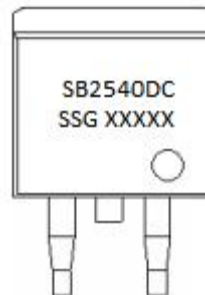
**Mechanical Dimensions D<sup>2</sup>PAK**


| Symbol | Dimensions in 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°      |       |

**Ordering Information**

| Device   | Package            | Shipping      |
|----------|--------------------|---------------|
| SB2540DC | D <sup>2</sup> PAK | 800pcs / reel |

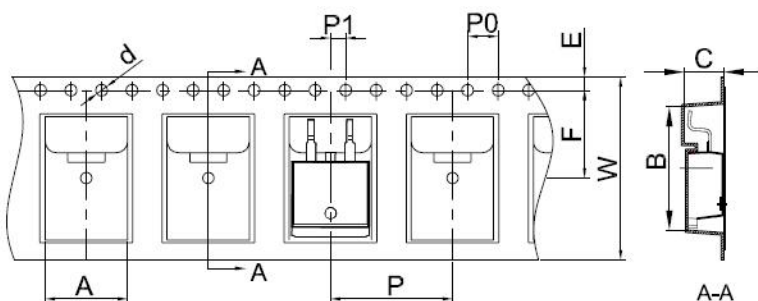
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

SB2540DC = Part Name  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Carrier Tape Specification D<sup>2</sup>PAK**


| 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 |

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