

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Glass passivated chip
- Low leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Lead (Pb)-free component
- For use in stabilizing and clipping circuits with high power rating

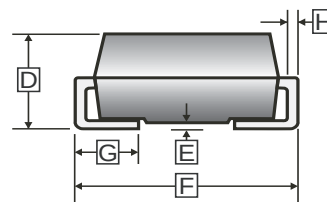
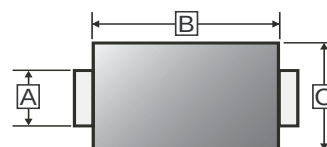
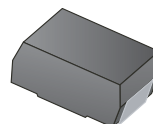
## MECHANICAL DATA

- Case : SMB
- Epoxy : UL 94V-0 rate flame retardant
- Polarity : Laser band denotes cathode end
- Weight : 0.095 grams (Approximately)

## PACKAGE INFORMATION

| Package | MPQ | LeaderSize |
|---------|-----|------------|
| SMB     | 3K  | 13' inch   |

## SMB



| REF. | Millimeter |      | REF. | Millimeter |       |
|------|------------|------|------|------------|-------|
|      | Min.       | Max. |      | Min.       | Max.  |
| A    | 1.91       | 2.20 | E    | -          | 0.203 |
| B    | 4.06       | 4.70 | F    | 5.08       | 5.59  |
| C    | 3.30       | 3.94 | G    | 0.76       | 1.52  |
| D    | 2.13       | 2.44 | H    | 0.15       | 0.305 |

## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                                             | SYMBOL           | VALUE       | UNITS |
|-------------------------------------------------------|------------------|-------------|-------|
| DC Power Dissipation at T <sub>L</sub> =50°C (Note 1) | P <sub>D</sub>   | 1.5         | W     |
| Maximum Forward Voltage at I <sub>F</sub> = 200mA     | V <sub>F</sub>   | 1.5         | V     |
| Junction Temperature Range                            | T <sub>J</sub>   | -55 ~ + 150 | °C    |
| Storage Temperature Range                             | T <sub>STG</sub> | -55 ~ + 150 | °C    |

Notes :

1. T<sub>L</sub> = Lead temperature at 3/8" (9.5mm) from body.

## ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.

| PART NUMBER | Nominal Zener Voltage |      | Max. Zener Impedance |      |                   |      | Max. Reverse Leakage Current |       | Max. DC Zener Current |
|-------------|-----------------------|------|----------------------|------|-------------------|------|------------------------------|-------|-----------------------|
|             | $V_Z @ I_{ZT}$        |      | $Z_{ZT} @ I_{ZT}$    |      | $Z_{ZK} @ I_{ZK}$ |      | $I_R @ V_R$                  |       | $I_{ZM}$              |
|             | Nom.V                 | mA   | $\Omega$             | mA   | $\Omega$          | mA   | $\mu A$                      | V     | mA                    |
| SMB5920B    | 6.2                   | 60.5 | 2.0                  | 60.5 | 200               | 1.00 | 5.0                          | 4.0   | 120                   |
| SMB5921B    | 6.8                   | 55.1 | 2.5                  | 55.1 | 200               | 1.00 | 5.0                          | 5.2   | 220                   |
| SMB5922B    | 7.5                   | 50.0 | 3.0                  | 50.0 | 400               | 0.50 | 5.0                          | 6.0   | 200                   |
| SMB5923B    | 8.2                   | 45.7 | 3.5                  | 45.7 | 400               | 0.50 | 5.0                          | 6.5   | 182                   |
| SMB5924B    | 9.1                   | 41.2 | 4.0                  | 41.2 | 500               | 0.50 | 5.0                          | 7.0   | 164                   |
| SMB5925B    | 10.0                  | 37.5 | 4.5                  | 37.5 | 500               | 0.25 | 5.0                          | 8.0   | 150                   |
| SMB5926B    | 11.0                  | 34.1 | 5.5                  | 34.1 | 550               | 0.25 | 5.0                          | 8.4   | 136                   |
| SMB5927B    | 12.0                  | 31.2 | 6.5                  | 31.2 | 550               | 0.25 | 1.0                          | 9.1   | 125                   |
| SMB5928B    | 13.0                  | 28.8 | 7.0                  | 28.8 | 550               | 0.25 | 1.0                          | 9.9   | 115                   |
| SMB5929B    | 15.0                  | 25.0 | 9.0                  | 25.0 | 600               | 0.25 | 1.0                          | 11.4  | 100                   |
| SMB5930B    | 16.0                  | 23.4 | 10                   | 23.4 | 600               | 0.25 | 1.0                          | 12.2  | 93                    |
| SMB5931B    | 18.0                  | 20.8 | 12                   | 20.8 | 650               | 0.25 | 1.0                          | 13.7  | 83                    |
| SMB5932B    | 20.0                  | 18.7 | 14                   | 18.7 | 650               | 0.25 | 1.0                          | 15.2  | 75                    |
| SMB5933B    | 22.0                  | 17.0 | 18                   | 17.0 | 650               | 0.25 | 1.0                          | 16.7  | 68                    |
| SMB5934B    | 24.0                  | 15.6 | 19                   | 15.6 | 700               | 0.25 | 1.0                          | 18.2  | 62                    |
| SMB5935B    | 27.0                  | 13.9 | 23                   | 13.9 | 700               | 0.25 | 1.0                          | 20.6  | 55                    |
| SMB5936B    | 30.0                  | 12.5 | 26                   | 12.5 | 750               | 0.25 | 1.0                          | 22.8  | 50                    |
| SMB5937B    | 33.0                  | 11.4 | 33                   | 11.4 | 800               | 0.25 | 1.0                          | 25.1  | 45                    |
| SMB5938B    | 36.0                  | 10.4 | 38                   | 10.4 | 850               | 0.25 | 1.0                          | 27.4  | 41                    |
| SMB5939B    | 39.0                  | 9.6  | 45                   | 9.6  | 900               | 0.25 | 1.0                          | 29.7  | 38                    |
| SMB5940B    | 43.0                  | 8.7  | 53                   | 8.7  | 950               | 0.25 | 1.0                          | 32.7  | 34                    |
| SMB5941B    | 47.0                  | 8.0  | 67                   | 8.0  | 1000              | 0.25 | 1.0                          | 35.8  | 31                    |
| SMB5942B    | 51.0                  | 7.3  | 70                   | 7.3  | 1100              | 0.25 | 1.0                          | 38.8  | 29                    |
| SMB5943B    | 56.0                  | 6.7  | 86                   | 6.7  | 1300              | 0.25 | 1.0                          | 42.6  | 26                    |
| SMB5944B    | 62.0                  | 6.0  | 100                  | 6.0  | 1500              | 0.25 | 1.0                          | 47.1  | 24                    |
| SMB5945B    | 68.0                  | 5.5  | 120                  | 5.5  | 1700              | 0.25 | 1.0                          | 51.7  | 22                    |
| SMB5946B    | 75.0                  | 5.0  | 140                  | 5.0  | 2000              | 0.25 | 1.0                          | 56.0  | 20                    |
| SMB5947B    | 82.0                  | 4.6  | 160                  | 4.6  | 2500              | 0.25 | 1.0                          | 62.2  | 18                    |
| SMB5948B    | 91.0                  | 4.1  | 200                  | 4.1  | 3000              | 0.25 | 1.0                          | 69.2  | 16                    |
| SMB5949B    | 100.0                 | 3.7  | 250                  | 3.7  | 3100              | 0.25 | 1.0                          | 76.0  | 15                    |
| SMB5950B    | 110.0                 | 3.4  | 300                  | 3.4  | 4000              | 0.25 | 1.0                          | 83.6  | 6.5                   |
| SMB5951B    | 120.0                 | 3.1  | 380                  | 3.1  | 4500              | 0.25 | 1.0                          | 91.2  | 6.0                   |
| SMB5952B    | 130.0                 | 2.9  | 450                  | 2.9  | 5000              | 0.25 | 1.0                          | 98.8  | 5.5                   |
| SMB5953B    | 150.0                 | 2.5  | 600                  | 2.5  | 6000              | 0.25 | 1.0                          | 114.0 | 5.0                   |
| SMB5954B    | 160.0                 | 2.3  | 700                  | 2.3  | 6500              | 0.25 | 1.0                          | 121.6 | 4.5                   |
| SMB5955B    | 180.0                 | 2.1  | 900                  | 2.1  | 7000              | 0.25 | 1.0                          | 136.8 | 4.0                   |
| SMB5956B    | 200.0                 | 1.9  | 1900                 | 1.9  | 9990              | 0.25 | 1.0                          | 152.0 | 3.5                   |

### NOTES:

1. The type number listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .
2. The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on  $I_{ZT}$  per JEDEC Method.

## RATINGS AND CHARACTERISTIC CURVES

Fig. 1 - Power Temperature Derating Curve

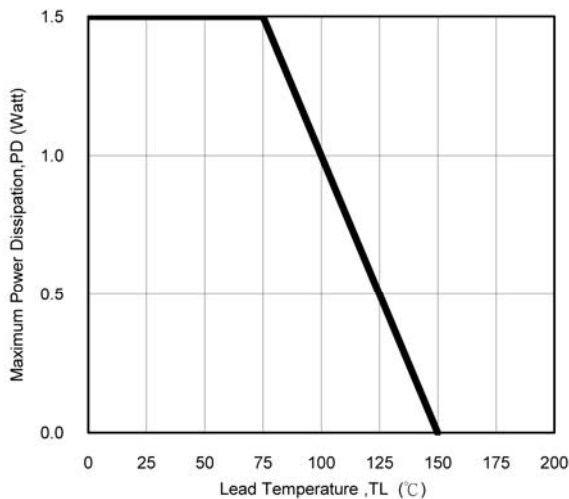


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

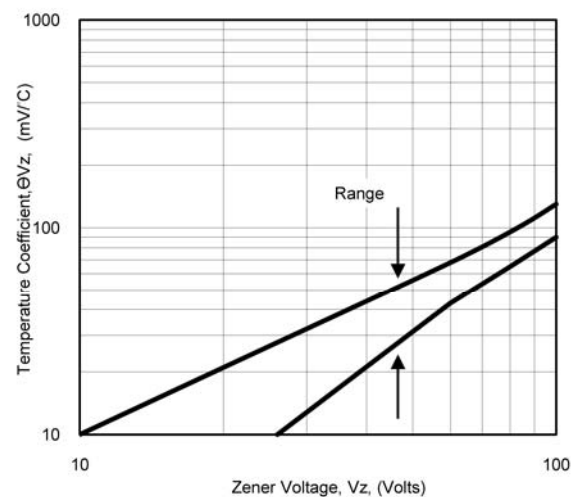


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

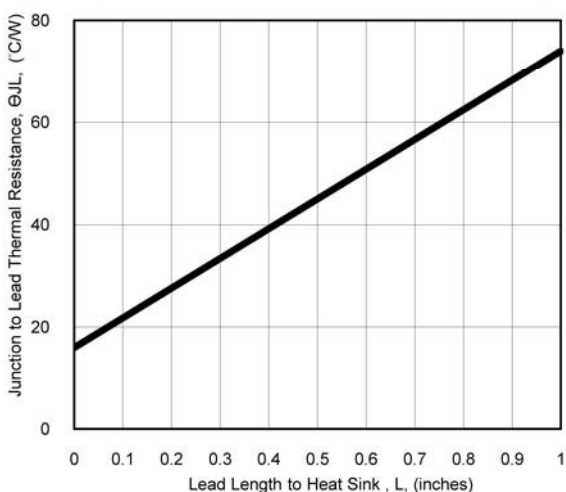


Fig. 4 - Maximum Surge Power

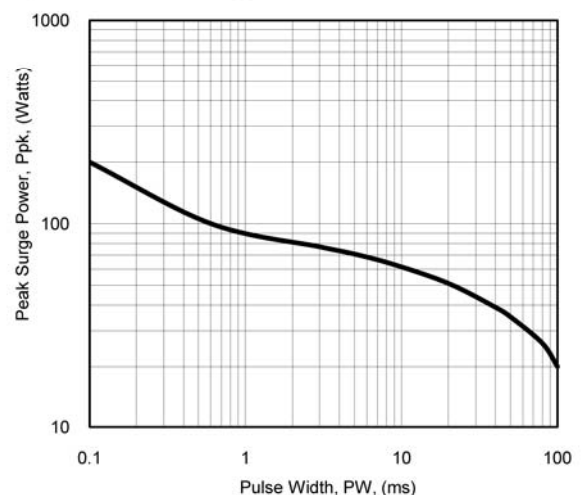


Fig. 5 - Typical Thermal Response  $L$ , Lead Length=3/8inch

