



E502650

## Features

- Halogen Free. "Green" Device (Note 1)
- Glass Passivated Chip Junction
- Moisture Sensitivity Level 1
- Surface Mount Package
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note 2)("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

| Parameter  | Symbol             | Value   |         |         |         |         |         |         | Unit             |
|--|--------------------|---------|---------|---------|---------|---------|---------|---------|------------------|
|  |                    | SDB 151 | SDB 152 | SDB 153 | SDB 154 | SDB 155 | SDB 156 | SDB 157 |                  |
| Peak Repetitive Reverse Voltage                          | V <sub>RRM</sub>   | 50      | 100     | 200     | 400     | 600     | 800     | 1000    | V                |
| Working Peak Reverse Voltage                             | V <sub>RWM</sub>   |         |         |         |         |         |         |         |                  |
| DC Blocking Voltage                                      | V <sub>R</sub>     |         |         |         |         |         |         |         |                  |
| RMS Reverse Voltage                                      | V <sub>RMS</sub>   | 35      | 70      | 140     | 280     | 420     | 560     | 700     | V                |
| Average Rectified Forward Current @ T <sub>A</sub> =40°C | I <sub>F(AV)</sub> | 1.5     |         |         |         |         |         |         | A                |
| Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave | I <sub>FSM</sub>   | 50      |         |         |         |         |         |         | A                |
| Non-Repetitive Peak Surge Current @ 1ms Square Wave      |                    | 100     |         |         |         |         |         |         |                  |
| Current Squared Time @1ms≤t≤8.3ms                        | I <sup>2</sup> t   | 10.3    |         |         |         |         |         |         | A <sup>2</sup> s |

## Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| SDB151      | SDB151       |
| SDB152      | SDB152       |
| SDB153      | SDB153       |
| SDB154      | SDB154       |
| SDB155      | SDB155       |
| SDB156      | SDB156       |
| SDB157      | SDB157       |

## Internal Structure

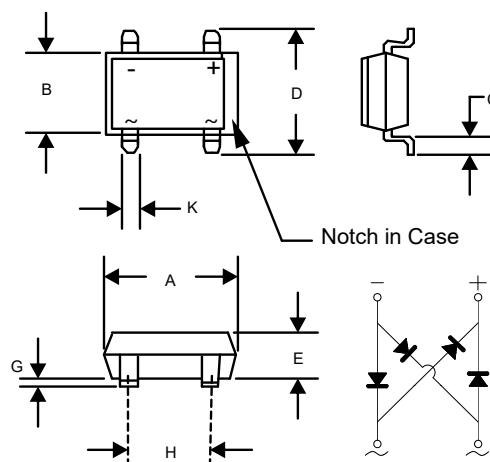
| Simplified Outline         | Graphic Symbol |
|----------------------------|----------------|
| <p>XXXX = Marking Code</p> |                |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High temperature solder exemption applied, see EU directive annex 7a.

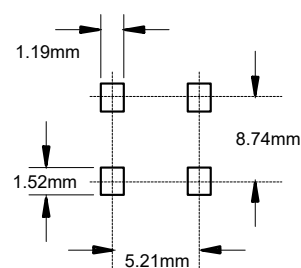
# 1.5 Amp Single Phase Bridge Rectifier 50 to 1000 Volts

## SDB-1



| DIM | INCHES |       | MM    |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | 0.316  | 0.335 | 8.05  | 8.51  |      |
| B   | 0.245  | 0.255 | 6.20  | 6.50  |      |
| C   | 0.040  | 0.060 | 1.02  | 1.50  |      |
| D   | 0.360  | 0.410 | 9.40  | 10.40 |      |
| E   | 0.102  | 0.130 | 2.60  | 3.30  |      |
| G   | 0.003  | 0.013 | 0.076 | 0.33  |      |
| H   | 0.195  | 0.205 | 5.00  | 5.20  |      |
| K   | 0.038  | 0.047 | 1.00  | 1.20  |      |

## Suggested Solder Pad Layout



## Thermal characteristics

| Symbol        | Parameter                                   | Conditions | Min | Typ | Max | Unit |
|---------------|---|------------|-----|-----|-----|------|
| $T_J$         | Operating Junction Temperature Range        |            | -55 |     | 150 | °C   |
| $T_{stg}$     | Storage Temperature Range                   |            | -55 |     | 150 | °C   |
| $R_{th(J-L)}$ | Thermal Resistance from Junction to Lead    | Note 1     |     | 15  |     | °C/W |
| $R_{th(J-A)}$ | Thermal Resistance from Junction to Ambient | Note 1     |     | 40  |     | °C/W |

Note:

1. Device mounted on P.C.B with 35mm\*25mm\*1.7mm.

## Electrical Characteristics @ 25°C Unless Otherwise Specified(Per Diode)

| Parameter            | Symbol | Test Conditions   | Min | Typ | Max      | Unit    |
|----------------------|--------|---|-----|-----|----------|---------|
| Forward Voltage      | $V_F$  | $I_F=0.7A; T_J=25^{\circ}C$   |     |     | 1.1      | V       |
| Reverse Current      | $I_R$  | at Rated $V_R; T_J=25^{\circ}C$<br>at Rated $V_R; T_J=125^{\circ}C$ |     |     | 5<br>100 | $\mu A$ |
| Junction Capacitance | $C_J$  | $V_R=4V; f=1MHz; T_J=25^{\circ}C$                                   |     | 18  |          | pF      |

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

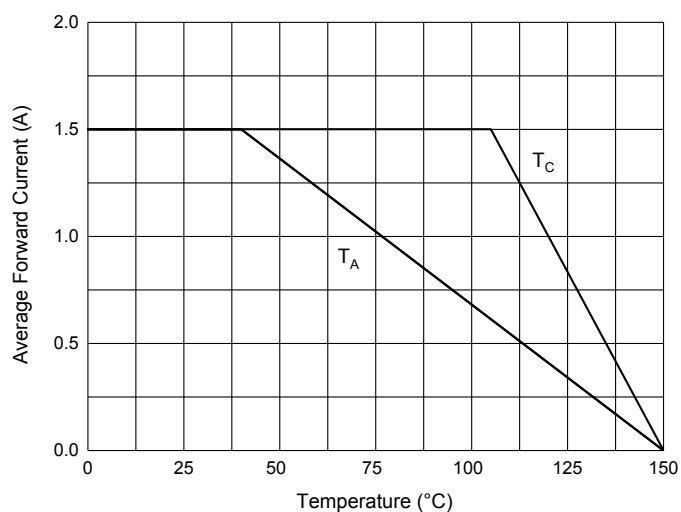


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

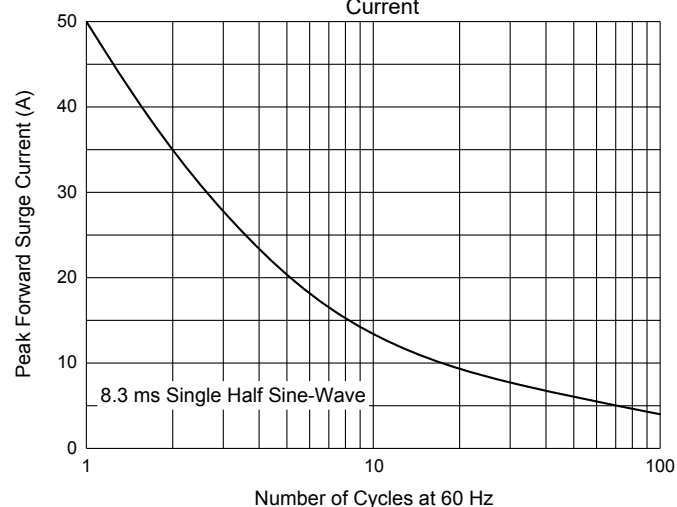


Fig. 3 - Typical Forward Characteristics

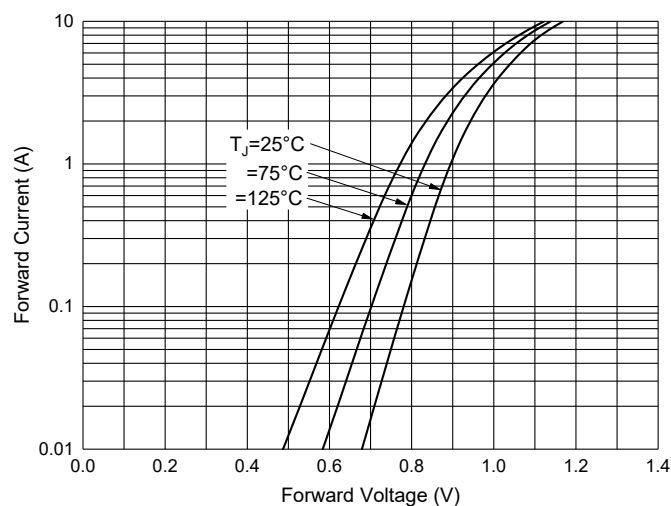


Fig. 4 - Typical Reverse Leakage Characteristics

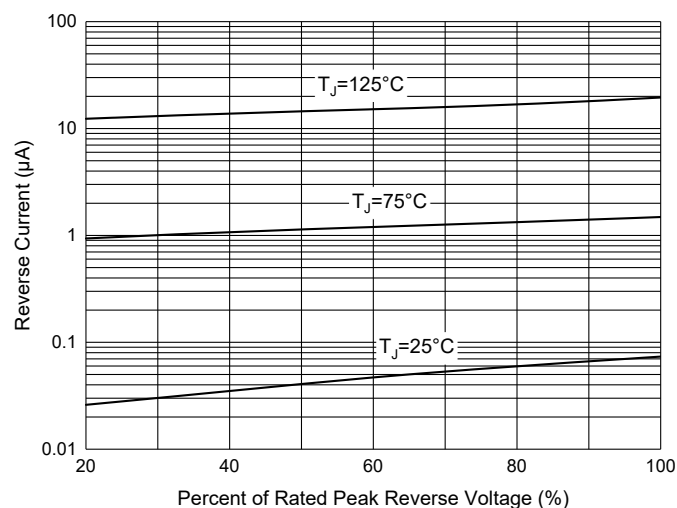
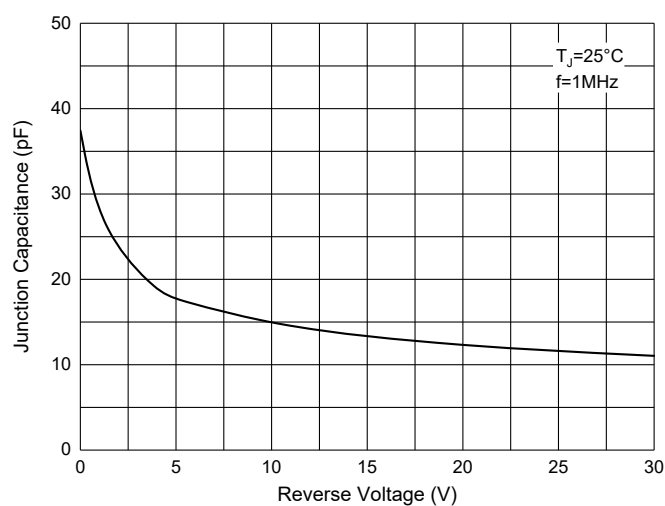


Fig. 5 - Typical Capacitance Characteristics



## Ordering Information

| Device         | Packing                           |
|----------------|-----------------------------------|
| Part Number-TP | Tape&Reel:1.5Kpcs/Reel            |
| Part Number-BP | Bulk:50pcs/Tube,5K/Box,20K/Carton |

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