



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 201 | SDB 202 | SDB 203 | SDB 204 | SDB 205 | SDB 206 | SDB 207 |                  |
| 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> | 2       |         |         |         |         |         |         | A                |
| Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave | I <sub>FSM</sub>   | 60      |         |         |         |         |         |         | A                |
| Non-Repetitive Peak Surge Current @ 1ms Square Wave      |                    | 120     |         |         |         |         |         |         |                  |
| Current Squared Time @1ms≤t≤8.3ms                        | I <sup>2</sup> t   | 14.9    |         |         |         |         |         |         | A <sup>2</sup> s |

## Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| SDB201      | SDB201       |
| SDB202      | SDB202       |
| SDB203      | SDB203       |
| SDB204      | SDB204       |
| SDB205      | SDB205       |
| SDB206      | SDB206       |
| SDB207      | SDB207       |

## Internal Structure

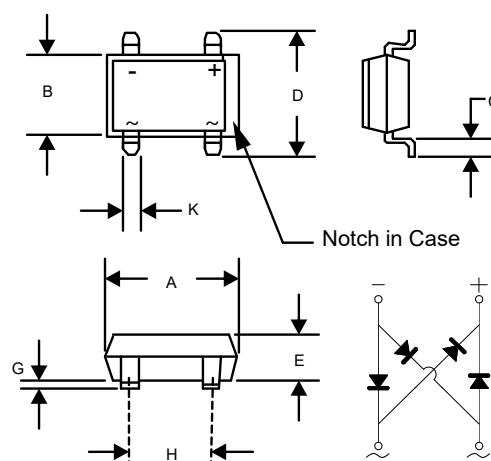
| Simplified Outline         | Graphic Symbol |
|----------------------------|----------------|
| <p>XXXX = Marking Code</p> |                |

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.

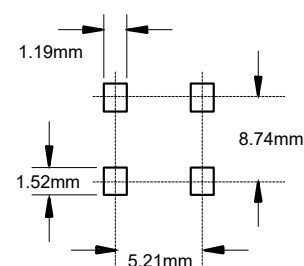
# 2 Amp Single Phase Bridge Rectifier 50 to 1000 Volts

## 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  |      |

## 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      | $V_F$  | $I_F=1A; T_J=25^{\circ}C$                                           |     |     | 1.1       | V       |
| Reverse Current      | $I_R$  | at Rated $V_R; T_J=25^{\circ}C$<br>at Rated $V_R; T_J=125^{\circ}C$ |     |     | 10<br>500 | $\mu A$ |
| Junction Capacitance | $C_J$  | $V_R=4V; f=1MHz; T_J=25^{\circ}C$                                   |     | 18  |           | pF      |

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

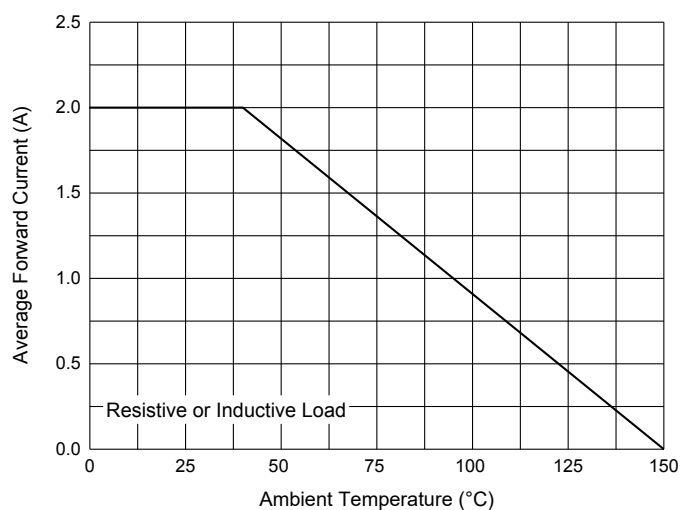


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

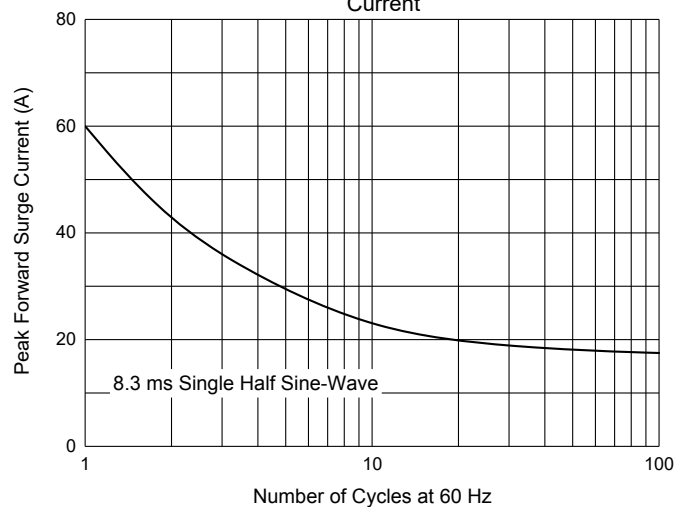


Fig. 3 - Typical Forward Characteristics

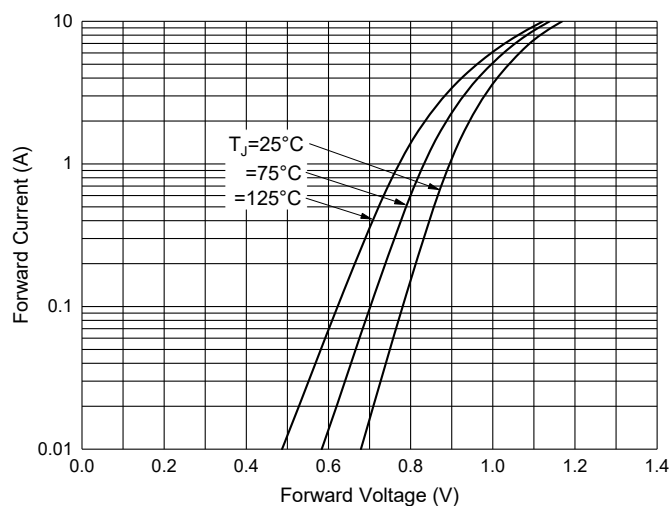


Fig. 4 - Typical Reverse Leakage Characteristics

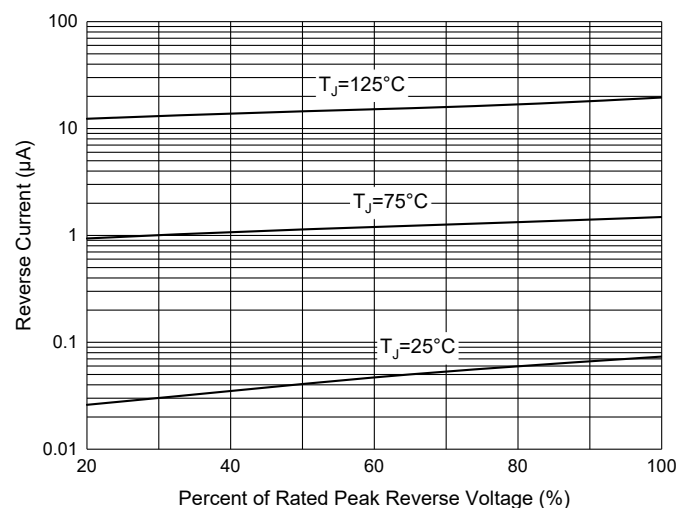
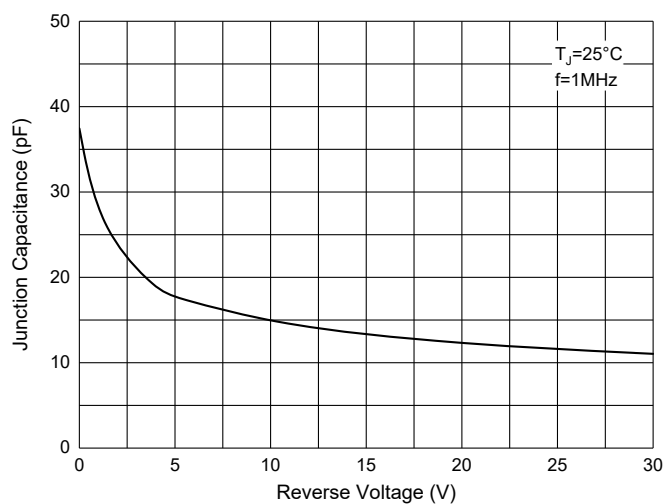


Fig. 5 - Typical Capacitance Characteristics



## Ordering Information

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

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp** . does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp** . and all the companies whose products are represented on our website, harmless against all damages. **Micro Commercial Components Corp.** products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.