



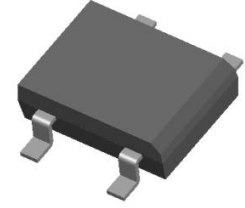
## DB101S THRU DB107S

|               |                  |
|---------------|------------------|
| VOLTAGE RANGE | 50 to 1000 Volts |
| CURRENT       | 1.0 Ampere       |

## Features

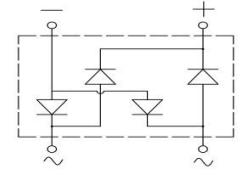


- Glass passivated chip
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering: 260°C/10S at terminals
- Component in accordance to ROHS 2002/95/1 and WEEE 2002/96/EC



## Mechanical Data

- Case: Molded plastic body
- Molding compound meets UL 94 V-0 flammability rating, Halogen-free, RoHS-compliant, and commercial grade
- Polarity: Molded on body
- Weight: 0.02 ounce, 0.40 grams



## Maximum Ratings and Electrical Characteristics

- Ratings at 25°C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

| TYPE NUMBER  | SYMBOL                    | DB 101S       | DB 102S | DB 103S | DB 104S | DB 105S | DB 106S | DB 107S | UNITS                     |
|--|---------------------------|---------------|---------|---------|---------|---------|---------|---------|---------------------------|
| Maximum Repetitive Peak Reverse Voltage  | $V_{RRM}$                 | 50            | 100     | 200     | 400     | 600     | 800     | 1000    | Volts                     |
| Maximum RMS Voltage  | $V_{RMS}$                 | 35            | 70      | 140     | 280     | 420     | 560     | 700     | Volts                     |
| Maximum DC Blocking Voltage  | $V_{DC}$                  | 50            | 100     | 200     | 400     | 600     | 800     | 1000    | Volts                     |
| Maximum Average Forward Rectified Current<br>$T_L=100^\circ\text{C}$                             | $I_{(AV)}$                | 1.0           |         |         |         |         |         |         | Amp                       |
| Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method) | $I_{FSM}$                 | 30            |         |         |         |         |         |         | Amps                      |
| Maximum Instantaneous Forward Voltage @ 1.0A   | $V_F$                     | 1.1           |         |         |         |         |         |         | Volts                     |
| Maximum DC Reverse Current at Rated DC Blocking Voltage  | $T_A = 25^\circ\text{C}$  | 5.0           |         |         |         |         |         |         | $\mu\text{A}$             |
|  | $T_A = 125^\circ\text{C}$ | 100           |         |         |         |         |         |         |                           |
| Typical Junction Capacitance (Note 1)  | $C_J$                     | 30            |         |         |         |         |         |         | pF                        |
| Typical Thermal Resistance (Note 2)  | $R_{\theta JA}$           | 26            |         |         |         |         |         |         | $^\circ\text{C}/\text{W}$ |
|  | $R_{\theta JL}$           | 65            |         |         |         |         |         |         |                           |
| Operating Junction Temperature Range   | $T_J, T_{STG}$            | (-55 to +150) |         |         |         |         |         |         | $^\circ\text{C}$          |

## Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance test performed in accordance with JESD-51. Unit mounted on 15mm\*12mm\*1.6mm AL pad attach 195mm\*110mm\*10mm steel plate.
3. The typical data above is for reference only.



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Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

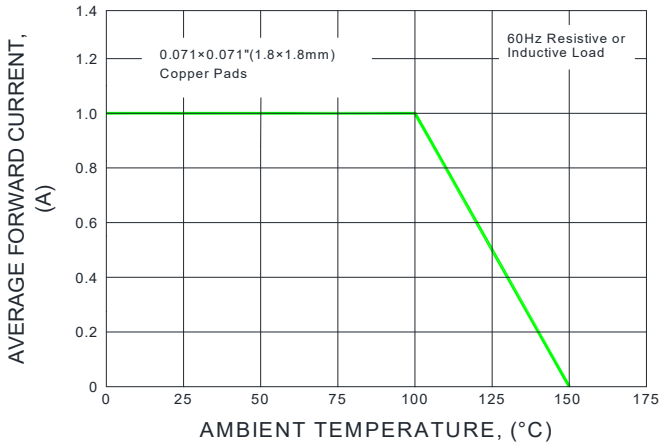


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

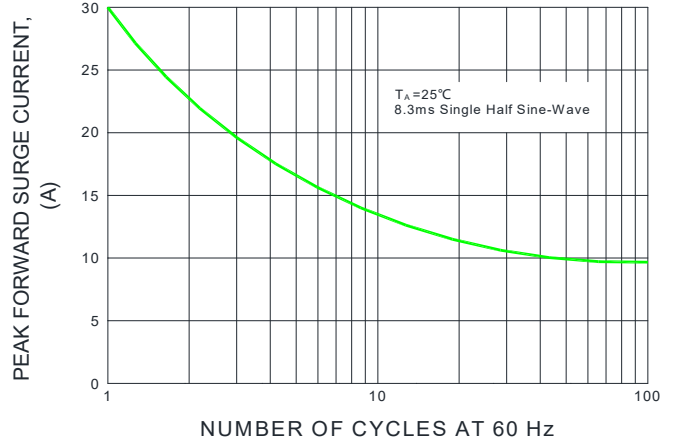


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

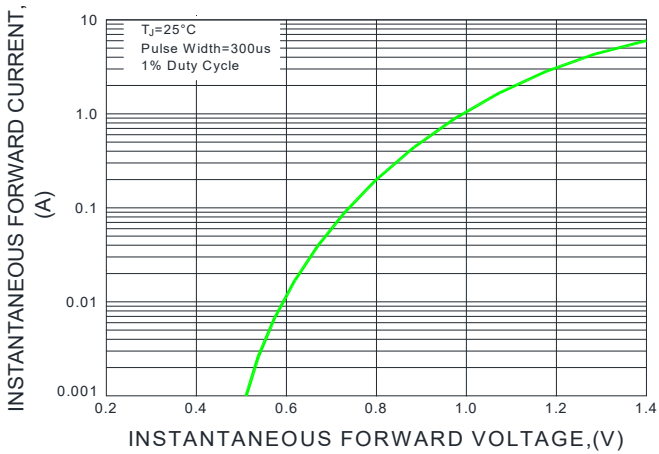


FIG.4-TYPICAL REVERSE CHARACTERISTICS

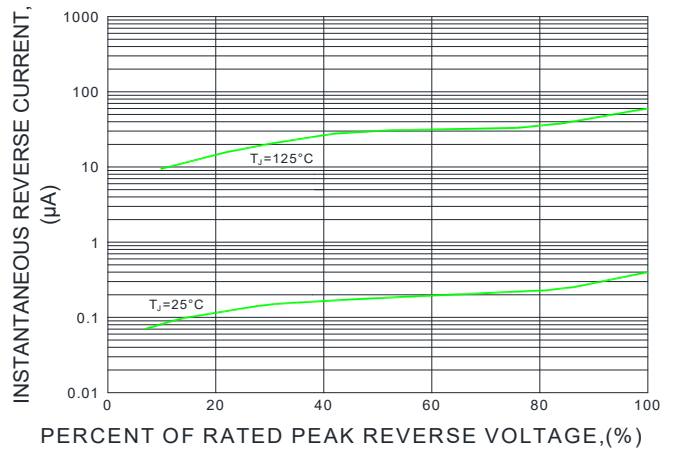
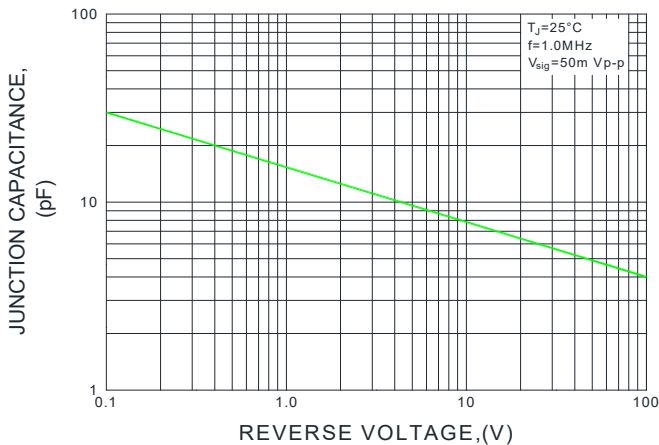


FIG.5-TYPICAL JUNCTION CAPACITANCE



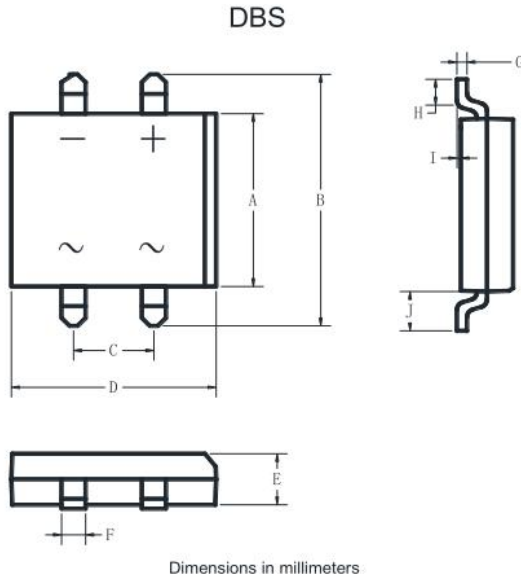


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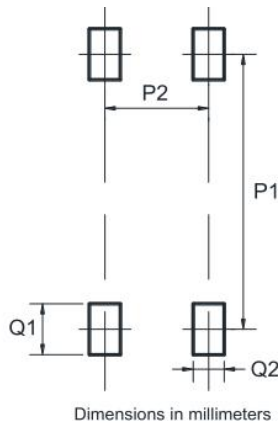
Package Outline Dimensions in inches (millimeters)

- Outline Dimensions



| Dim | mm   |       | in   |      |
|-----|------|-------|------|------|
|     | min  | max   | min  | max  |
| A   | 6.20 | 6.50  | .244 | .256 |
| B   | 9.60 | 10.30 | .378 | .406 |
| C   | 5.00 | 5.20  | .197 | .205 |
| D   | 8.13 | 8.51  | .320 | .335 |
| E   | 2.38 | 2.45  | .093 | .096 |
| F   | 0.98 | 1.13  | .038 | .044 |
| G   | 0.18 | 0.23  | .007 | .009 |
| H   | 1.02 | 1.53  | .040 | .060 |
| I   | 0.05 | 0.20  | .001 | .007 |
| J   | 1.80 | 2.10  | .070 | .082 |

- Suggested pad layout



| Dim | Min  |
|-----|------|
| P1  | 8.73 |
| P2  | 5.12 |
| Q1  | 2.22 |
| Q2  | 1.2  |

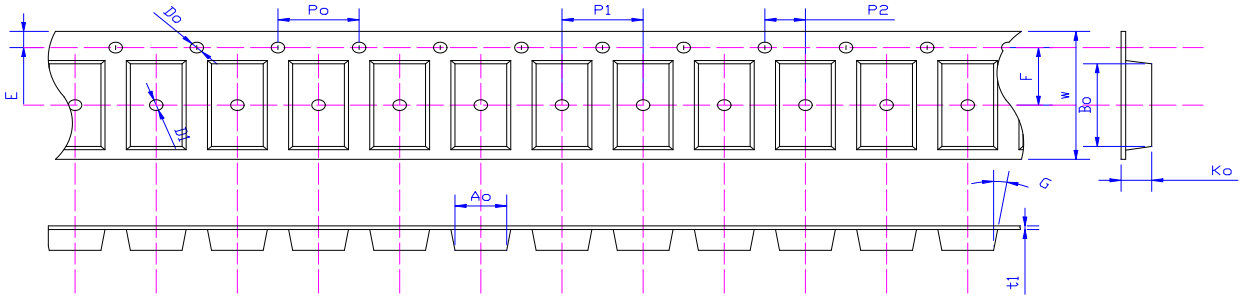


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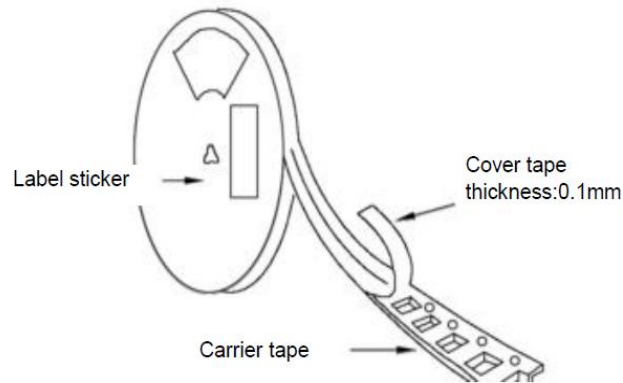
Packing Requirments

- PS black anti-static carrier tape packing



| Specifications | Ao        | Bo        | Ko        | Po       | W         | t1        |
|----------------|-----------|-----------|-----------|----------|-----------|-----------|
| DBS            | 8.64±0.10 | 9.85±0.10 | 2.60±0.10 | 4.00±0.1 | 16.0±0.10 | 0.30±0.02 |

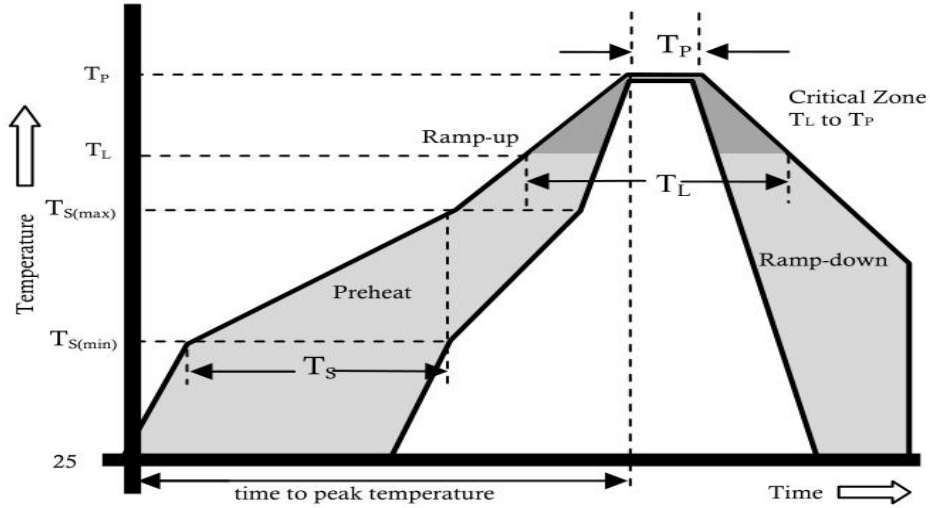
- 13 "antistatic plastic reel



| DEVICE TYPE | 13" Reel       |          |             |                  |
|-------------|----------------|----------|-------------|------------------|
|             | Q'TY/REEL(pcs) | REEL/BOX | BOX/CARTOON | Q'TY/CARTON(pcs) |
| DBS         | 3000           | 2        | 8           | 48000            |



Reflow Profile



| Reflow Condition                                     |                                 | Pb-Free Assembly |
|--|---------------------------------|------------------|
| Pre Heat   | Temperature Min.                | +150°C           |
|  | Temperature Max.                | +200°C           |
|  | Time(Min to Max)                | 60-180 secs.     |
| Average ramp up rate(Liquidus Temp( $T_L$ ) to peak) |                                 | 3°C/sec. Max.    |
| $T_{S(max)}$ to $T_L$ - Ramp-up Rate                 |                                 | 3°C/sec. Max.    |
| Reflow   | Temperature ( $T_L$ )(Liquidus) | +217°C           |
|  | Temperature ( $T_L$ )           | 60-150 secs.     |
| Peak Temp ( $T_P$ )                                  |                                 | +(260+0/-5) °C   |
| Time within 5°C of actual Peak Temp ( $T_P$ )        |                                 | 25 secs.         |
| Ramp-down Rate                                       |                                 | 6°C/sec. Max.    |
| Time 25°C to peak Temp ( $T_P$ )                     |                                 | 8 min. Max.      |
| Do not exceed  |                                 | +260°C           |



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