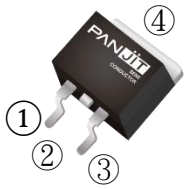
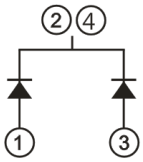
# SB1040CD-AU

## Surface Mount Schottky Barrier Rectifier

| Voltage | 40 V | Current | 10 A |
|---|---|---|---|

**TO-252AA**




### Features

- Low power loss, high efficiency
- High surge current capability
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : TO-252AA Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.3217 grams

### Maximum Ratings and Thermal Characteristics ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | | SYMBOL | LIMIT | UNITS |
|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | | $V_{RRM}$ | 40 | V |
| Maximum RMS Voltage | | $V_{RMS}$ | 28 | V |
| Maximum DC Blocking Voltage | | $V_{DC}$ | 40 | V |
| Maximum Average Forward Current | per device<br>per diode | $I_{F(AV)}$ | 10<br>5 | A |
| Peak Forward Surge Current : 8.3 ms Single Half Sine-Wave Superimposed On Rated Load Per Diode | | $I_{FSM}$ | 120 | A |
| Typical Junction Capacitance<br>Measured at 1 MHZ And Applied $V_R$ = 4 V | | $C_J$ | 247 | pF |
| Typical Thermal Resistance per diode | (Note 1)<br>(Note 2)<br>(Note 2) | $R_{\theta JA}$<br>$R_{\theta JC}$<br>$R_{\theta JL}$ | 50<br>6<br>5.3 | °C/W |
| Operating Junction Temperature Range | | $T_J$ | -55~150 | °C |
| Storage Temperature Range | | $T_{STG}$ | -55~150 | °C |

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## Electrical Characteristics ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|
| Forward Voltage Per Diode | $V_F$ | $I_F$ = 1 A, $T_J$ = 25 °C | - | 0.38 | 0.43 | V |
| | | $I_F$ = 3 A, $T_J$ = 25 °C | - | 0.45 | 0.5 | V |
| | | $I_F$ = 5 A, $T_J$ = 25 °C | - | 0.5 | 0.55 | V |
| | | $I_F$ = 1 A, $T_J$ = 125 °C | - | 0.26 | 0.31 | V |
| | | $I_F$ = 3 A, $T_J$ = 125 °C | - | 0.36 | 0.41 | V |
| | | $I_F$ = 5 A, $T_J$ = 125 °C | - | 0.44 | 0.48 | V |
| Reverse Current Per Diode(Note 3) | $I_R$ | $V_R$ = 32 V, $T_J$ = 25 °C | - | 8.2 | 100 | nA |
| | | $V_R$ = 40 V, $T_J$ = 25 °C | - | 13.3 | 200 | uA |
| | | $V_R$ = 40 V, $T_J$= 125 °C | - | 11.1 | 60 | mA |

NOTES :

1. Mounted on a FR4 PCB, single-sided copper, standard footprint.
2. Mounted on a FR4 PCB, single-sided copper, with 100 $cm^2$ copper pad area.
3. Short duration pulse test used to minimize self-heating effect.

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## TYPICAL CHARACTERISTIC CURVES

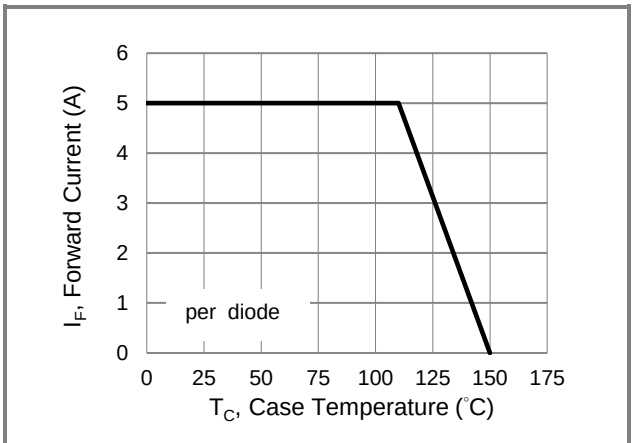


Fig.1 Forward Current Derating Curve

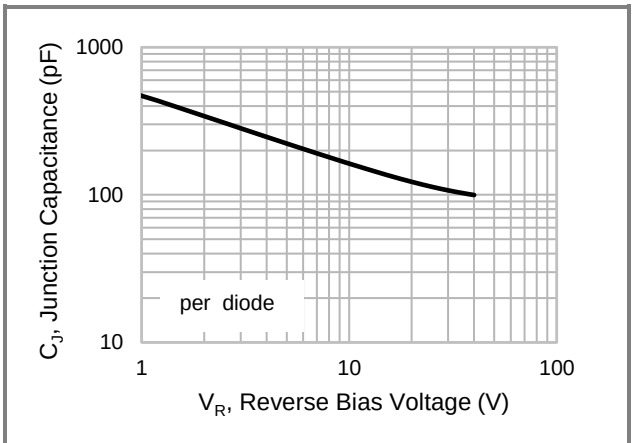


Fig.2 Typical Junction Capacitance

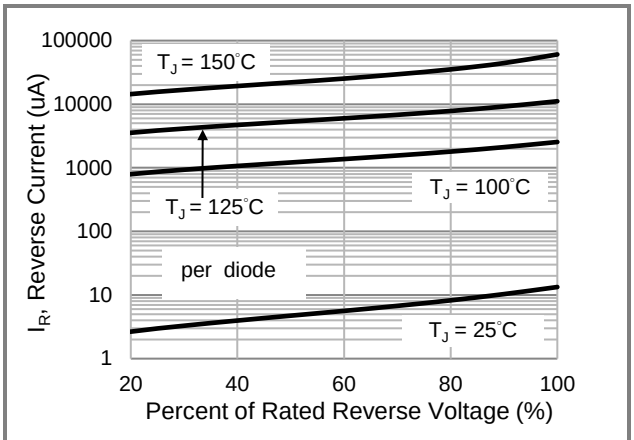


Fig.3 Typical Reverse Characteristics

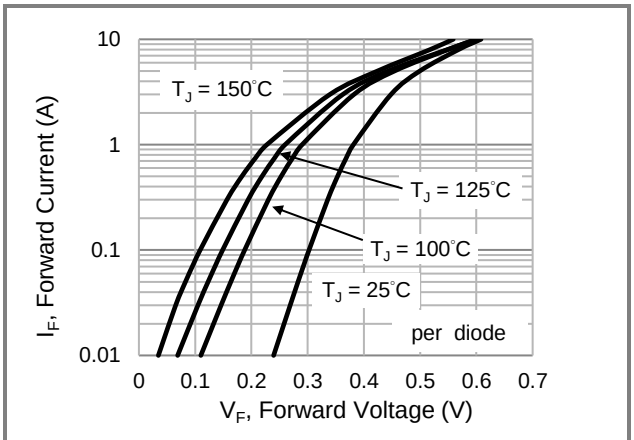


Fig.4 Typical Forward Characteristics

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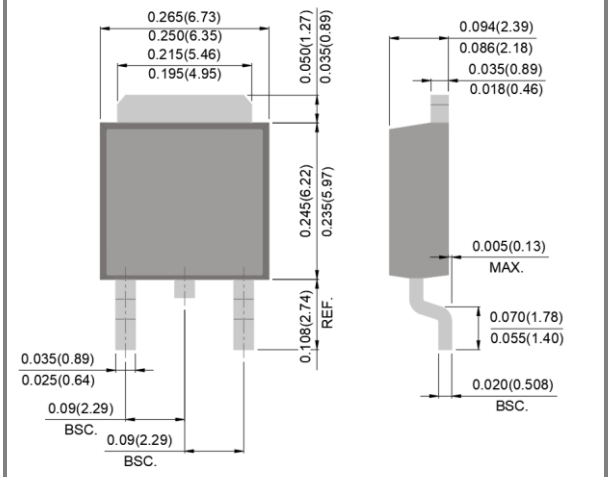
## Product and Packing Information

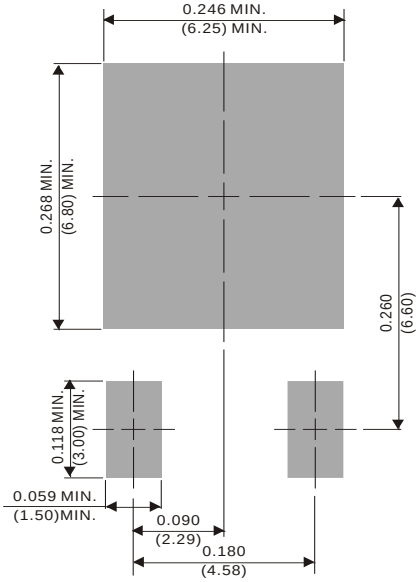
| Part No. | Package Type | Packing Type | Marking |
|---|---|---|---|
| SB1040CD-AU | TO-252AA | 3K pcs / 13” reel | SB1040CD |

## Packaging Information & Mounting Pad Layout

TO-252AA Dimension — Unit: inch(mm)




TO-252AA Pad Layout — Unit: inch(mm)



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