

SDB12HC THRU SDB120HC

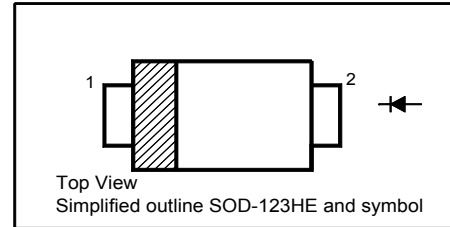
Surface Mount Schottky Barrier Rectifiers

Reverse Voltage - 20 to 200 V

Forward Current - 1 A

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



Absolute Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.

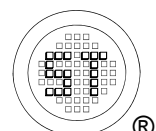
For capacitive load, derate current by 20%.

| Parameter | Symbols | SDB 12HC | SDB 14HC | SDB 16HC | SDB 18HC | SDB 110HC | SDB 115HC | SDB 120HC | Units |
|---|-----------------|-------------------|----------|----------|----------|------------------|-----------|-----------|-------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 20 | 40 | 60 | 80 | 100 | 150 | 200 | V |
| Maximum RMS Voltage | V_{RMS} | 14 | 28 | 42 | 56 | 80 | 105 | 141 | V |
| Maximum DC Blocking Voltage | V_{DC} | 20 | 40 | 60 | 80 | 100 | 150 | 200 | V |
| Maximum Average Forward Rectified Current at $T_L = 75^\circ\text{C}$ | $I_{F(AV)}$ | 1 | | | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) | I_{FSM} | 30 | | | | | | | A |
| Maximum Forward Voltage at 1 A | V_F | 0.55 | 0.7 | 0.85 | | | | V | |
| Maximum Reverse Current at Rated DC Blocking Voltage | I_R | 0.1 | | | | 0.002 | | 10 | mA |
| | | 10 | | | | 10 | | | |
| Typical Junction Capacitance | C_j | 110 ¹⁾ | | | | 23 ²⁾ | | | pF |
| Typical Thermal Resistance ³⁾ | $R_{\theta JA}$ | 95 | | | | 110 | | | °C/W |
| Operating Junction Temperature Range | T_j | - 55 to + 125 | | | | | | | °C |
| Storage Temperature Range | T_{stg} | - 55 to + 150 | | | | | | | °C |

¹⁾ Measured at 1 MHz and applied reverse voltage of 4 V.

²⁾ Measured at 1 MHz and applied reverse voltage of 5 V.

³⁾ Thermal resistance junction to ambient 0.24" x 0.24"(6 x 6 mm) copper pads to each terminals.



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Electrical Characteristics Curves

Fig 1. Forward Current Derating Curve

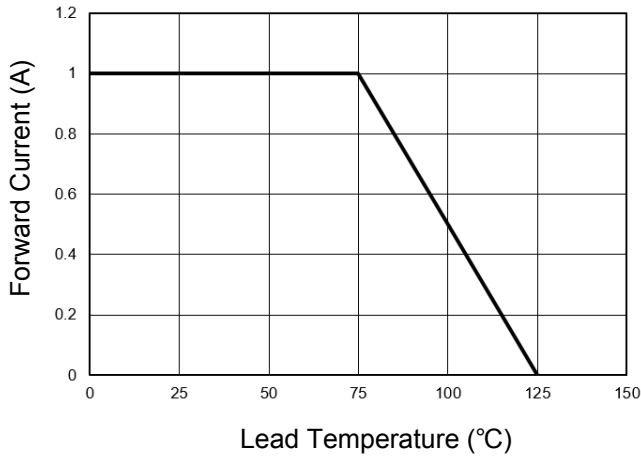


Fig 2. Forward Characteristics Curve

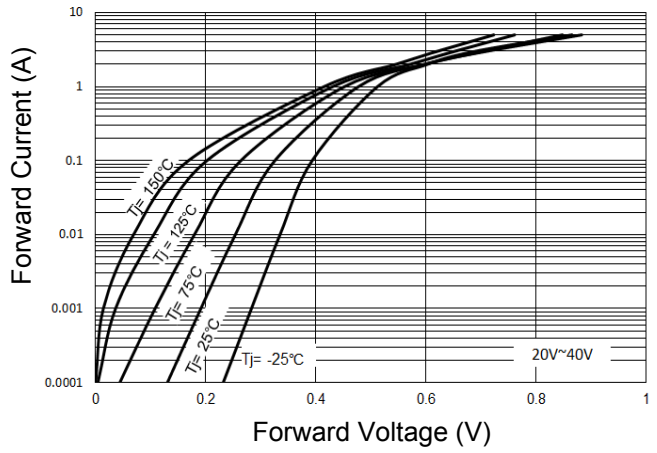


Fig 3. Forward Characteristics Curve

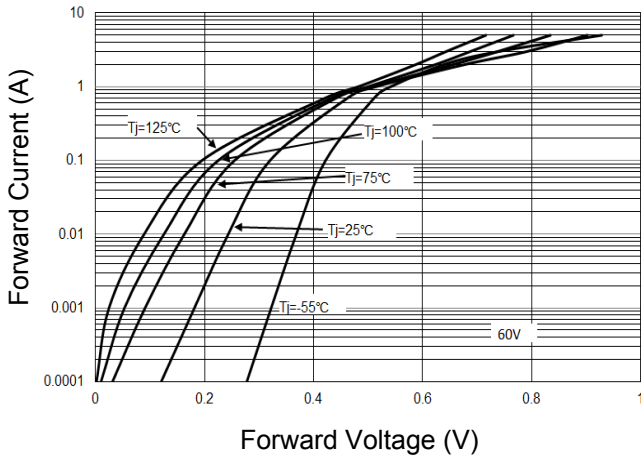


Fig 4. Forward Characteristics Curve

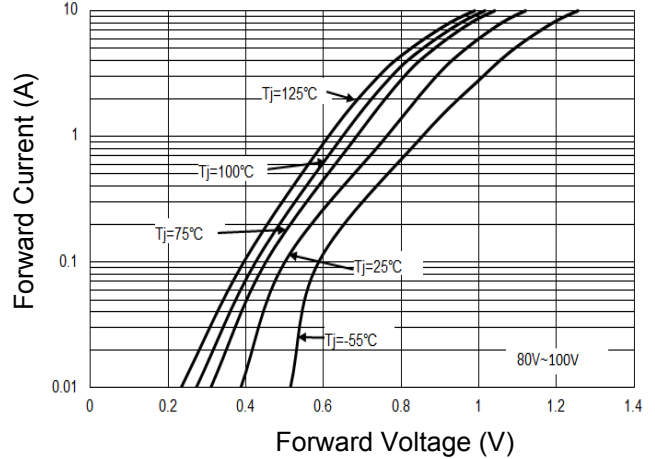


Fig 5. Forward Characteristics Curve

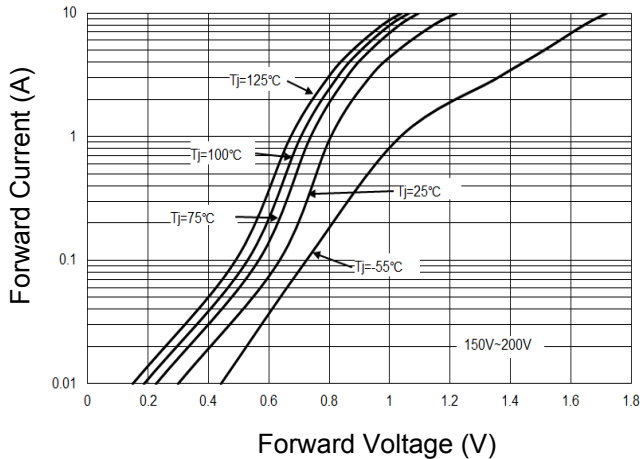
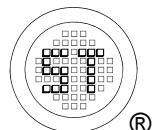
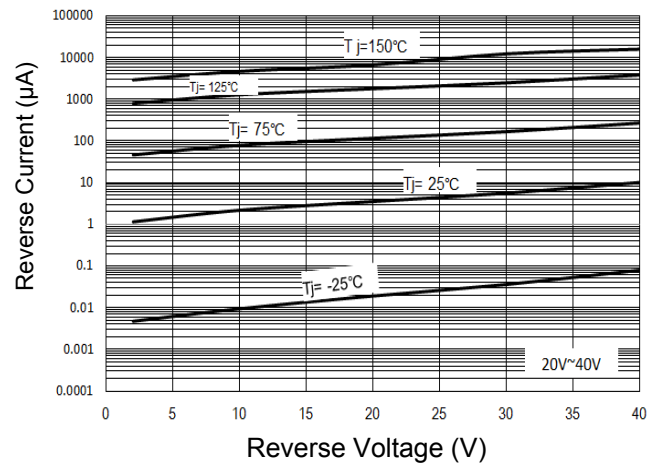


Fig 6. Reverse Characteristics Curve



SDB12HC THRU SDB120HC

Electrical Characteristics Curves

Fig 7. Reverse Characteristics Curve

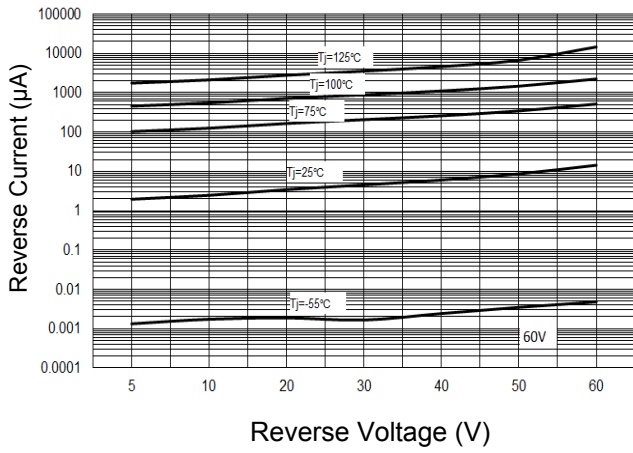


Fig 8. Reverse Characteristics Curve

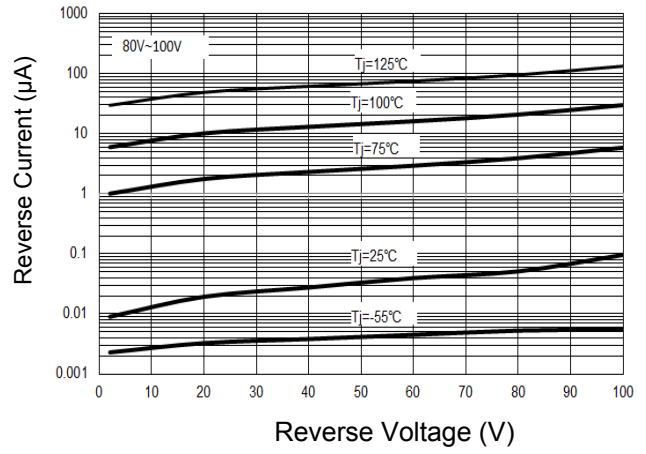


Fig 9. Reverse Characteristics Curve

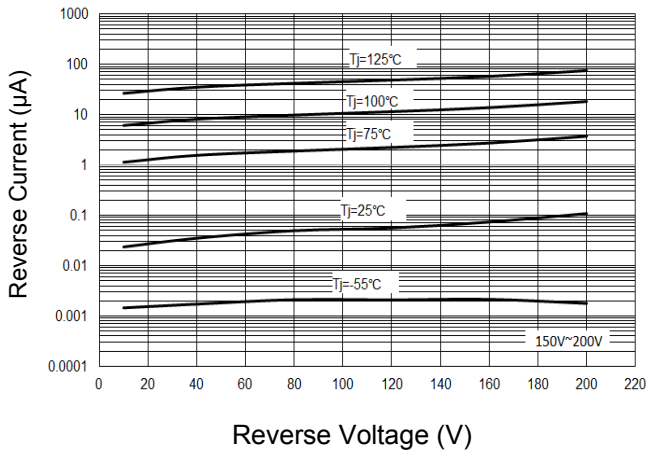


Fig 10. Junction Capacitance

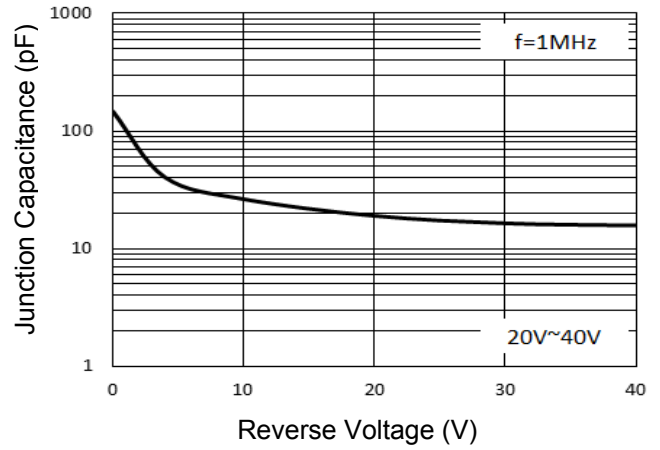


Fig 11. Junction Capacitance

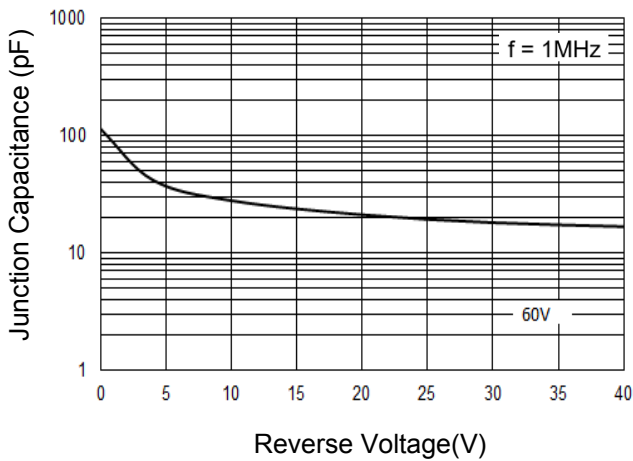
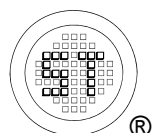
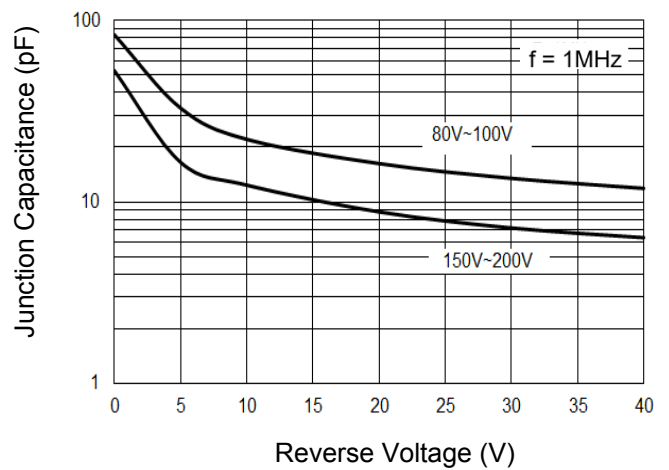


Fig 12. Junction Capacitance

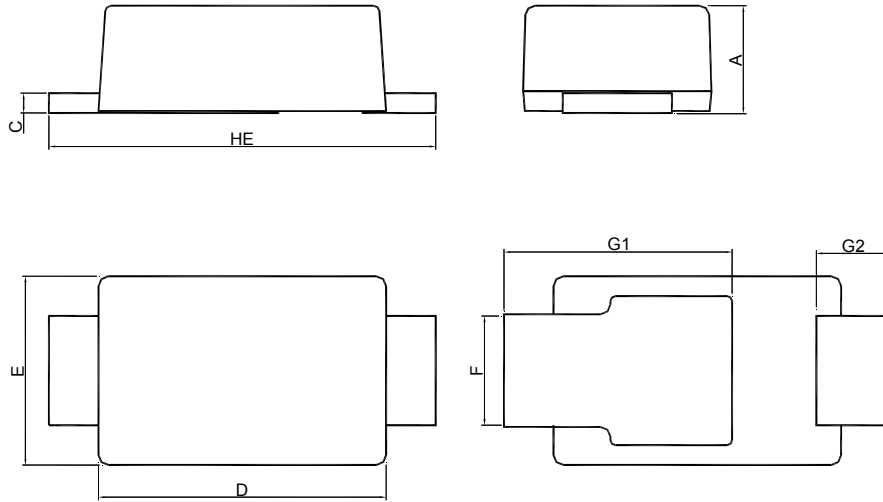


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PACKAGE OUTLINE

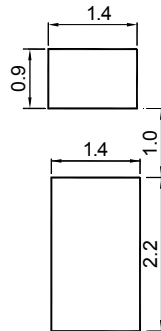
Plastic surface mounted package; 2 leads

SOD-123HE



| UNIT | A | C | D | E | F | G1 | G2 | H_E |
|------|------|-----|-----|-----|-----|-----|------|-------|
| mm | 1.08 | 0.2 | 2.9 | 1.9 | 1.1 | 2.3 | 0.75 | 3.9 |
| | 0.88 | 0.1 | 2.6 | 1.7 | 0.8 | 1.9 | 0.55 | 3.5 |

Recommended Soldering Footprint



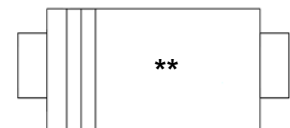
Packing information

| Package | Tape Width (mm) | Pitch | | Reel Size | | Per Reel Packing Quantity |
|-----------|-----------------|---------|---------------|-----------|------|---------------------------|
| | | mm | inch | mm | inch | |
| SOD-123HE | 8 | 4 ± 0.1 | 0.157 ± 0.004 | 178 | 7 | 3,000 |

Marking information

" ** " = Part No.

| Type | Marking | Type | Marking |
|-----------------|---------|-------------------|---------|
| SDB12HC~SDB14HC | SR | SDB18HC~SDB110HC | CS |
| SDB16HC | BS | SDB115HC~SDB120HC | DS |



" III " = Cathode line

Font type: Arial

