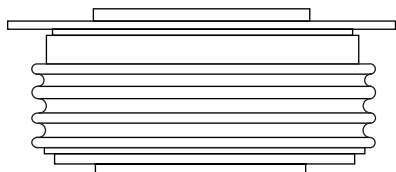


### Standard Recovery Diodes (Hockey PUK Version), 1200 A



DO-200AB (B-PUK)

#### FEATURES

- Wide current range
- High voltage ratings up to 4500 V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-200AB (B-PUK)
- Lead (Pb)-free



**RoHS**  
COMPLIANT

#### PRODUCT SUMMARY

|             |        |
|-------------|--------|
| $I_{F(AV)}$ | 1200 A |
|-------------|--------|

#### TYPICAL APPLICATIONS

- Converters
- Power supplies
- Machine tool controls
- High power drives
- Medium traction applications

#### MAJOR RATINGS AND CHARACTERISTICS

| PARAMETER    | TEST CONDITIONS | SD800C..L    |              | UNITS             |
|--------------|-----------------|--------------|--------------|-------------------|
|              |                 | 24 TO 36     | 40 TO 45     |                   |
| $I_{F(AV)}$  |                 | 1180         | 1065         | A                 |
|              | $T_{hs}$        | 55           | 55           | °C                |
| $I_{F(RMS)}$ |                 | 2280         | 2040         | A                 |
|              | $T_{hs}$        | 25           | 25           | °C                |
| $I_{FSM}$    | 50 Hz           | 13 600       | 12 200       | A                 |
|              | 60 Hz           | 14 240       | 12 800       |                   |
| $I^2t$       | 50 Hz           | 925          | 745          | kA <sup>2</sup> s |
|              | 60 Hz           | 845          | 680          |                   |
| $V_{RRM}$    | Range           | 2400 to 3600 | 4000 to 4500 | V                 |
| $T_J$        |                 | - 40 to 150  | - 40 to 150  | °C                |

#### ELECTRICAL SPECIFICATIONS

##### VOLTAGE RATINGS

| TYPE NUMBER | VOLTAGE CODE | $V_{RRM}$ , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE<br>V | $V_{RSM}$ , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE<br>V | $I_{RRM}$ MAXIMUM AT $T_J = T_J$ MAXIMUM<br>mA |
|-------------|--------------|----------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------|
| SD800C..L   | 24           | 2400                                                     | 2500                                                         | 50                                             |
|             | 30           | 3000                                                     | 3100                                                         |                                                |
|             | 36           | 3600                                                     | 3700                                                         |                                                |
|             | 40           | 4000                                                     | 4100                                                         |                                                |
|             | 45           | 4500                                                     | 4600                                                         |                                                |

# Vishay High Power Products Standard Recovery Diodes (Hockey PUK Version), 1200 A

| FORWARD CONDUCTION                                            |                     |                                                                                                           |                                 |                                                                       |            |            |                    |
|---------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|------------|------------|--------------------|
| PARAMETER                                                     | SYMBOL              | TEST CONDITIONS                                                                                           |                                 |                                                                       | SD800C..L  |            | UNITS              |
|                                                               |                     |                                                                                                           |                                 |                                                                       | 24 TO 36   | 40 TO 45   |                    |
| Maximum average forward current at heatsink temperature       | I <sub>F(AV)</sub>  | 180° conduction, half sine wave<br>Double side (single side) cooled                                       |                                 |                                                                       | 1180 (550) | 1065 (490) | A                  |
|                                                               |                     |                                                                                                           |                                 |                                                                       | 55 (85)    | 55 (85)    | °C                 |
| Maximum RMS forward current                                   | I <sub>F(RMS)</sub> | 25 °C heatsink temperature double side cooled                                                             |                                 |                                                                       | 2280       | 2040       | A                  |
| Maximum peak, one-cycle forward, non-repetitive surge current | I <sub>FSM</sub>    | t = 10 ms                                                                                                 | No voltage reapplied            | Sinusoidal half wave, initial T <sub>J</sub> = T <sub>J</sub> maximum | 13 600     | 12 200     |                    |
|                                                               |                     | t = 8.3 ms                                                                                                |                                 |                                                                       | 14 240     | 12 800     |                    |
|                                                               |                     | t = 10 ms                                                                                                 | 50 % V <sub>RRM</sub> reapplied |                                                                       | 11 440     | 10 250     |                    |
|                                                               |                     | t = 8.3 ms                                                                                                |                                 |                                                                       | 11 980     | 10 750     |                    |
| Maximum I <sup>2</sup> t for fusing                           | I <sup>2</sup> t    | t = 10 ms                                                                                                 | No voltage reapplied            |                                                                       | 925        | 745        | kA <sup>2</sup> s  |
|                                                               |                     | t = 8.3 ms                                                                                                |                                 | 845                                                                   | 680        |            |                    |
|                                                               |                     | t = 10 ms                                                                                                 | 50 % V <sub>RRM</sub> reapplied | 654                                                                   | 526        |            |                    |
|                                                               |                     | t = 8.3 ms                                                                                                |                                 | 597                                                                   | 480        |            |                    |
| Maximum I <sup>2</sup> √t for fusing                          | I <sup>2</sup> √t   | t = 0.1 to 10 ms, no voltage reapplied                                                                    |                                 |                                                                       | 9250       | 7450       | kA <sup>2</sup> √s |
| Low level value of threshold voltage                          | V <sub>F(TO)1</sub> | (16.7 % × π × I <sub>F(AV)</sub> ) < I < π × I <sub>F(AV)</sub> , T <sub>J</sub> = T <sub>J</sub> maximum |                                 |                                                                       | 0.90       | 1.06       | V                  |
| High level value of threshold voltage                         | V <sub>F(TO)2</sub> | (I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> = T <sub>J</sub> maximum                                    |                                 |                                                                       | 1.10       | 1.18       |                    |
| Low level value of forward slope resistance                   | r <sub>f1</sub>     | (16.7 % × π × I <sub>F(AV)</sub> ) < I < π × I <sub>F(AV)</sub> , T <sub>J</sub> = T <sub>J</sub> maximum |                                 |                                                                       | 0.38       | 0.44       | mΩ                 |
| High level value of forward slope resistance                  | r <sub>f2</sub>     | (I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> = T <sub>J</sub> maximum                                    |                                 |                                                                       | 0.34       | 0.41       |                    |
| Maximum forward voltage drop                                  | V <sub>FM</sub>     | I <sub>pk</sub> = 2000 A, T <sub>J</sub> = T <sub>J</sub> maximum, t <sub>p</sub> = 10 ms sinusoidal wave |                                 |                                                                       | 1.66       | 1.95       | V                  |

| THERMAL AND MECHANICAL SPECIFICATIONS            |              |                                               |                  |        |
|--------------------------------------------------|--------------|-----------------------------------------------|------------------|--------|
| PARAMETER                                        | SYMBOL       | TEST CONDITIONS                               | VALUES           | UNITS  |
| Maximum junction operating temperature range     | $T_J$        |                                               | - 40 to 150      | °C     |
| Maximum storage temperature range                | $T_{Stg}$    |                                               | - 55 to 200      |        |
| Maximum thermal resistance, junction to heatsink | $R_{thJ-hs}$ | DC operation single side cooled               | 0.073            | K/W    |
|                                                  |              | DC operation double side cooled               | 0.031            |        |
| Mounting force, ± 10 %                           |              |                                               | 14 700 (1500)    | N (kg) |
| Approximate weight                               |              |                                               | 255              | g      |
| Case style                                       |              | See dimensions - link at the end of datasheet | DO-200AB (B-PUK) |        |

| $\Delta R_{thJ-hs}$ CONDUCTION |                       |             |                        |             |                                         |       |
|--------------------------------|-----------------------|-------------|------------------------|-------------|-----------------------------------------|-------|
| CONDUCTION ANGLE               | SINUSOIDAL CONDUCTION |             | RECTANGULAR CONDUCTION |             | TEST CONDITIONS                         | UNITS |
|                                | SINGLE SIDE           | DOUBLE SIDE | SINGLE SIDE            | DOUBLE SIDE |                                         |       |
| 180°                           | 0.009                 | 0.009       | 0.006                  | 0.006       | T <sub>J</sub> = T <sub>J</sub> maximum | K/W   |
| 120°                           | 0.011                 | 0.011       | 0.011                  | 0.011       |                                         |       |
| 90°                            | 0.014                 | 0.014       | 0.015                  | 0.015       |                                         |       |
| 60°                            | 0.020                 | 0.020       | 0.021                  | 0.021       |                                         |       |
| 30°                            | 0.036                 | 0.036       | 0.036                  | 0.036       |                                         |       |

**Note**

- The table above shows the increment of thermal resistance  $R_{thJ-hs}$  when devices operate at different conduction angles than DC

## Standard Recovery Diodes Vishay High Power Products (Hockey PUK Version), 1200 A

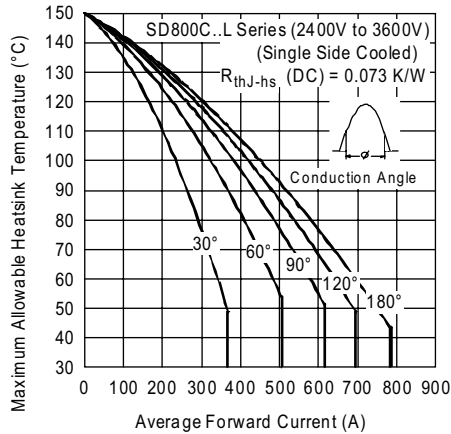


Fig. 1 - Current Ratings Characteristics

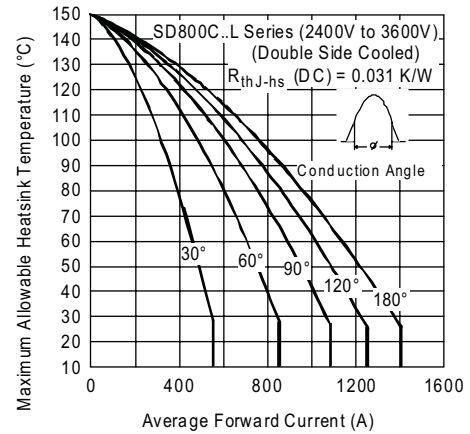


Fig. 4 - Current Ratings Characteristics

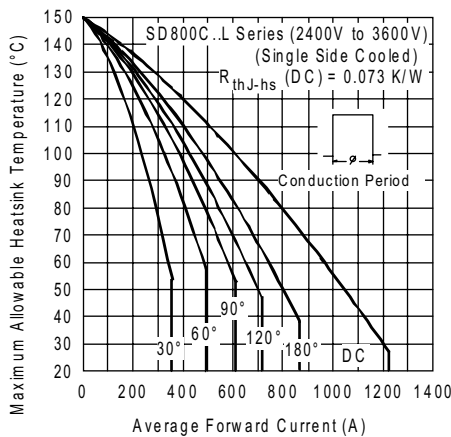


Fig. 2 - Current Ratings Characteristics

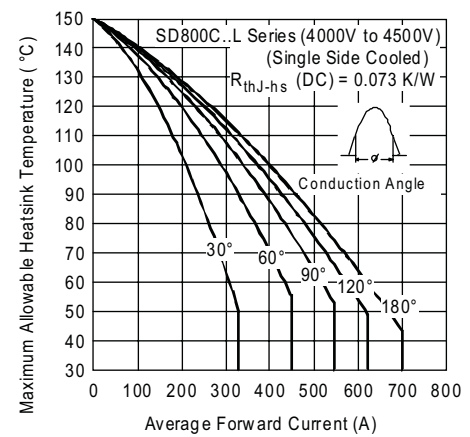


Fig. 5 - Current Ratings Characteristics

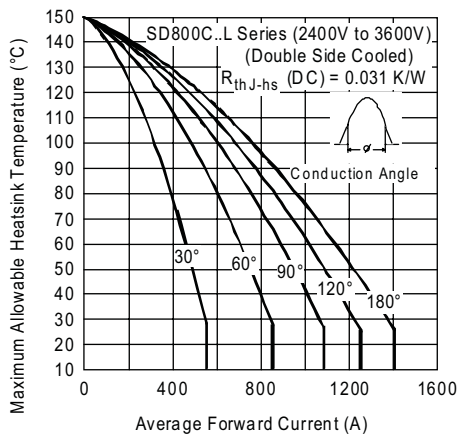


Fig. 3 - Current Ratings Characteristics

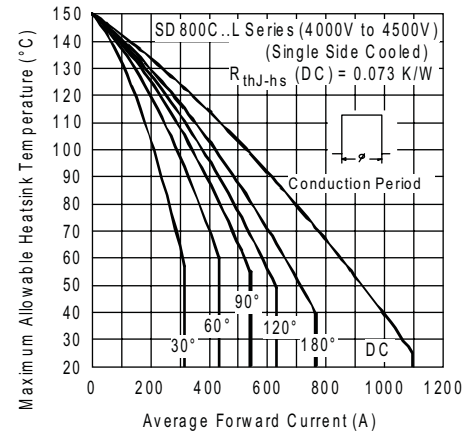


Fig. 6 - Current Ratings Characteristics

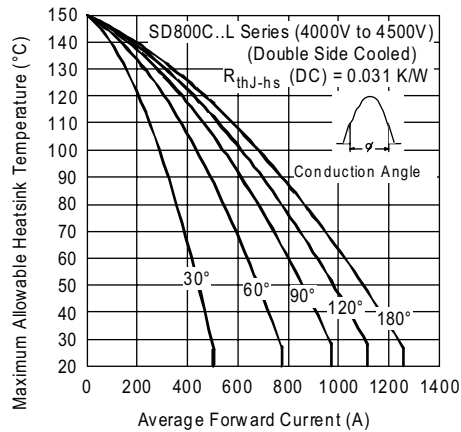


Fig. 7 - Current Ratings Characteristics

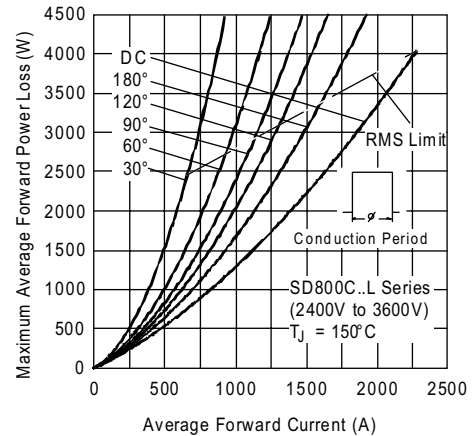


Fig. 10 - Forward Power Loss Characteristics

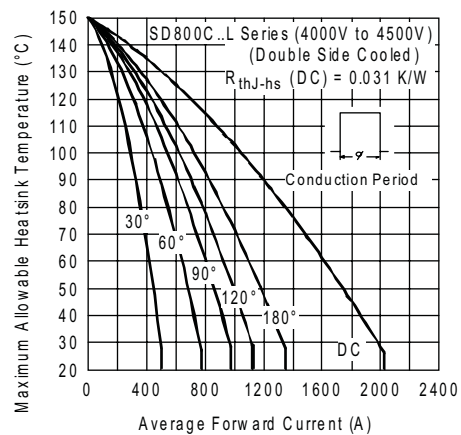


Fig. 8 - Current Ratings Characteristics

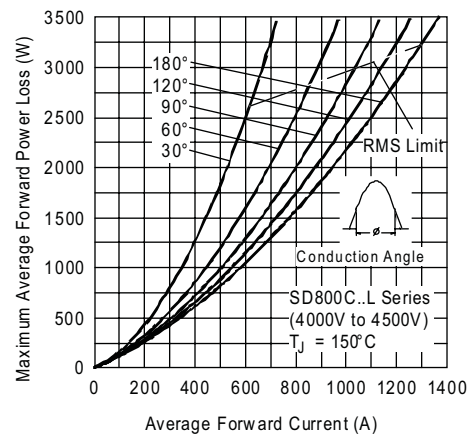


Fig. 11 - Forward Power Loss Characteristics

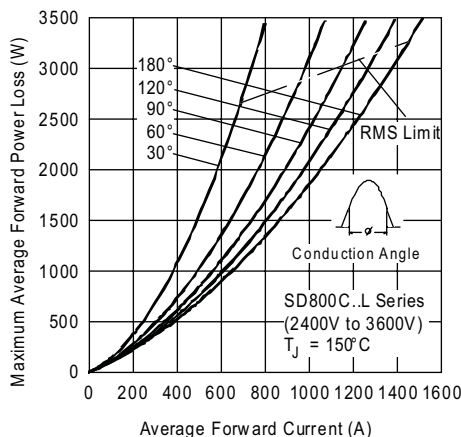


Fig. 9 - Forward Power Loss Characteristics

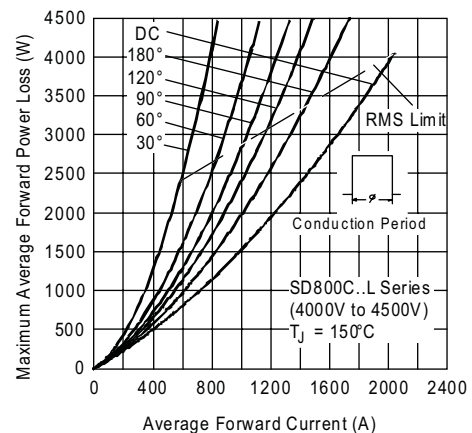


Fig. 12 - Forward Power Loss Characteristics

## Standard Recovery Diodes Vishay High Power Products (Hockey PUK Version), 1200 A

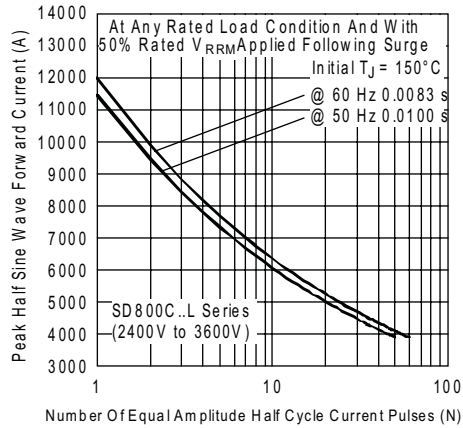


Fig. 13 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

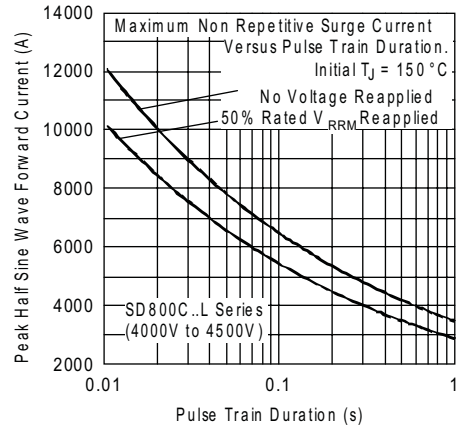


Fig. 16 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

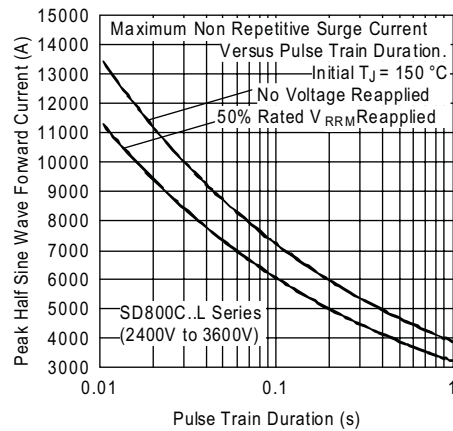


Fig. 14 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

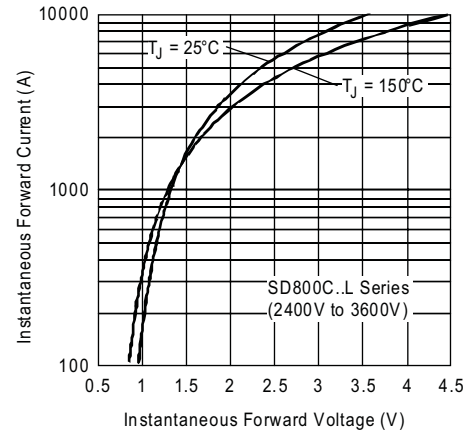


Fig. 17 - Forward Voltage Drop Characteristics

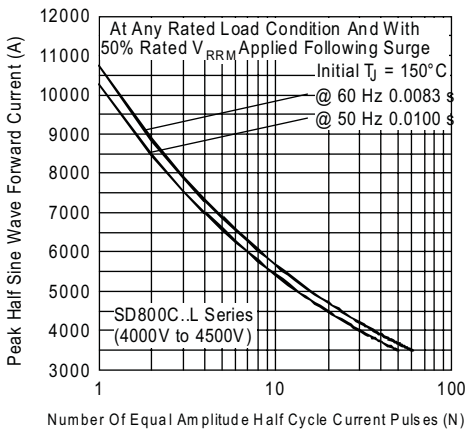


Fig. 15 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

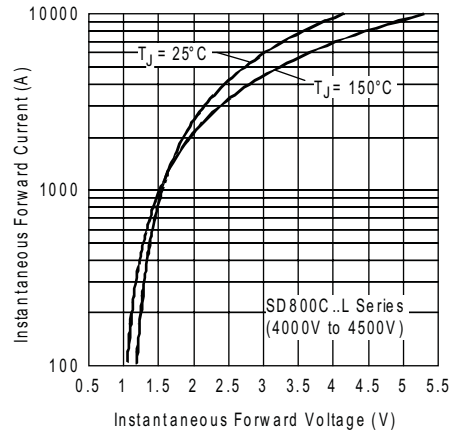
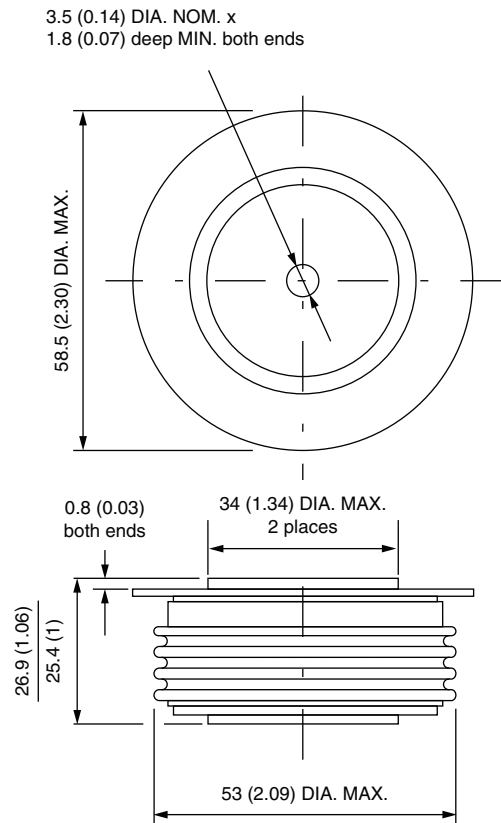


Fig. 18 - Forward Voltage Drop Characteristics



## DO-200AB (B-PUK)

**DIMENSIONS** in millimeters (inches)



Quote between upper and lower pole pieces has to be considered after application of mounting force (see Thermal and Mechanical Specifications)



## Disclaimer

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