

# Single Phase Bridge Rectifier, 25 A, 35 A



D-34

## FEATURES

- Universal, 3 way terminals: push-on, wrap around, or solder
- High thermal conductivity package, electrically insulated case
- Center hole fixing
- Excellent power/volume ratio
- UL E300359 approved 
- Nickel plated terminals solderable using lead (Pb)-free solder; solder alloy Sn/Ag/Cu (SAC305); solder temperature 260 °C to 275 °C
- Designed and qualified for industrial level
- Material categorization: for definitions of compliance please see [www.vishay.com/doc299912](http://www.vishay.com/doc299912)


**RoHS**  
COMPLIANT

## PRIMARY CHARACTERISTICS

|                       |                     |
|-----------------------|---------------------|
| $I_O$                 | 25 A, 35 A          |
| $V_{RRM}$             | 200 V to 1200 V     |
| Package               | D-34                |
| Circuit configuration | Single phase bridge |

## DESCRIPTION

A range of extremely compact, encapsulated single phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and instrumentation applications.

## MAJOR RATINGS AND CHARACTERISTICS

| SYMBOL    | CHARACTERISTICS | VALUES<br>26MB..A | VALUES<br>36MB..A | UNITS            |
|-----------|-----------------|-------------------|-------------------|------------------|
| $I_O$     |                 | 25                | 35                | A                |
|           | $T_C$           | 65                | 60                | °C               |
| $I_{FSM}$ | 50 Hz           | 400               | 475               | A                |
|           | 60 Hz           | 420               | 500               |                  |
| $I^2t$    | 50 Hz           | 790               | 1130              | A <sup>2</sup> s |
|           | 60 Hz           | 725               | 1030              |                  |
| $V_{RRM}$ | Range           | 200 to 1200       |                   | V                |
| $T_J$     |                 | -55 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 $T_J$ MAXIMUM |
|---------------------|--------------|----------------------------------------------------------|--------------------------------------------------------------|------------------------------------|
| 26MB..A,<br>36MB..A | 05           | 50                                                       | 75                                                           | 2                                  |
|                     | 06           | 60                                                       | 100                                                          |                                    |
|                     | 10           | 100                                                      | 150                                                          |                                    |
|                     | 20           | 200                                                      | 275                                                          |                                    |
|                     | 40           | 400                                                      | 500                                                          |                                    |
|                     | 60           | 600                                                      | 725                                                          |                                    |
|                     | 80           | 800                                                      | 900                                                          |                                    |
|                     | 100          | 1000                                                     | 1100                                                         |                                    |
|                     | 120          | 1200                                                     | 1300                                                         |                                    |

| FORWARD CONDUCTION                                        |                     |                                                                                                                                              |                                     |                                                    |                   |                   |                    |
|-----------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------|-------------------|-------------------|--------------------|
| PARAMETER                                                 | SYMBOL              | TEST CONDITIONS                                                                                                                              |                                     |                                                    | VALUES<br>26MB..A | VALUES<br>36MB..A | UNITS              |
| Maximum DC output current<br>at case temperature          | I <sub>O</sub>      | Resistive or inductive load                                                                                                                  |                                     |                                                    | 25                | 35                | A                  |
|                                                           |                     | Capacitive load                                                                                                                              |                                     |                                                    | 20                | 28                |                    |
|                                                           |                     |                                                                                                                                              |                                     |                                                    | 65                | 60                | °C                 |
| Maximum peak, one-cycle<br>non-repetitive forward current | I <sub>FSM</sub>    | t = 10 ms                                                                                                                                    | No voltage<br>reapplied             | Initial<br>T <sub>J</sub> = T <sub>J</sub> maximum | 400               | 475               | A                  |
|                                                           |                     | t = 8.3 ms                                                                                                                                   |                                     |                                                    | 420               | 500               |                    |
|                                                           |                     | t = 10 ms                                                                                                                                    | 100 % V <sub>RRM</sub><br>reapplied |                                                    | 335               | 400               |                    |
|                                                           |                     | t = 8.3 ms                                                                                                                                   |                                     |                                                    | 350               | 420               |                    |
| Maximum I <sup>2</sup> t for fusing                       | I <sup>2</sup> t    | t = 10 ms                                                                                                                                    | No voltage<br>reapplied             |                                                    | 790               | 1130              | A <sup>2</sup> s   |
|                                                           |                     | t = 8.3 ms                                                                                                                                   |                                     |                                                    | 725               | 1030              |                    |
|                                                           |                     | t = 10 ms                                                                                                                                    | 100 % V <sub>RRM</sub><br>reapplied |                                                    | 560               | 800               |                    |
|                                                           |                     | t = 8.3 ms                                                                                                                                   |                                     |                                                    | 512               | 730               |                    |
| Maximum I <sup>2</sup> √t for fusing                      | I <sup>2</sup> √t   | I <sup>2</sup> t for time t <sub>x</sub> = I <sub>2</sub> √τ × √t <sub>x</sub> ; 0.1 ≤ t <sub>x</sub> ≤ 10 ms, V <sub>RRM</sub> = 0 V        |                                     |                                                    | 5.6               | 11.3              | 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> maximum                                                     |                                     |                                                    | 0.76              | 0.79              | V                  |
| High level value of threshold voltage                     | V <sub>F(TO)2</sub> | (I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> maximum                                                                                        |                                     |                                                    | 0.92              | 0.96              |                    |
| Low level forward slope resistance                        | r <sub>t1</sub>     | (16.7 % × π × I <sub>F(AV)</sub> ) < I < π × I <sub>F(AV)</sub> , T <sub>J</sub> maximum                                                     |                                     |                                                    | 6.8               | 5.8               | mΩ                 |
| High level forward slope resistance                       | r <sub>t2</sub>     | (I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> maximum                                                                                        |                                     |                                                    | 5.0               | 4.5               |                    |
| Maximum forward voltage drop                              | V <sub>FM</sub>     | T <sub>J</sub> = 25 °C, t <sub>p</sub> = 400 μs, I <sub>FM</sub> = 40 A <sub>pk</sub> (26MB),<br>I <sub>FM</sub> = 55 A <sub>pk</sub> (36MB) |                                     |                                                    | 1.11              | 1.14              | V                  |
| Maximum DC reverse current                                | I <sub>RRM</sub>    | T <sub>J</sub> = 25 °C, per diode at V <sub>RRM</sub>                                                                                        |                                     |                                                    | 10                |                   | μA                 |
| RMS isolation voltage base plate                          | V <sub>INS</sub>    | f = 50 Hz, t = 1 s                                                                                                                           |                                     |                                                    | 2700              |                   | V                  |

| THERMAL AND MECHANICAL SPECIFICATIONS                  |                                   |                                             |                  |                  |       |
|--------------------------------------------------------|-----------------------------------|---------------------------------------------|------------------|------------------|-------|
| PARAMETER                                              | SYMBOL                            | TEST CONDITIONS                             | VALUES<br>26MB-A | VALUES<br>36MB-A | UNITS |
| Junction and storage temperature range                 | T <sub>J</sub> , T <sub>Stg</sub> |                                             | -55 to 150       |                  | °C    |
| Maximum thermal resistance junction to case per bridge | R <sub>thJC</sub>                 |                                             | 1.7              | 1.2              | K/W   |
| Maximum thermal resistance, case to heatsink           | R <sub>thCS</sub>                 | Mounting surface, smooth, flat, and greased | 0.2              |                  |       |
| Approximate weight                                     |                                   |                                             | 20               |                  | g     |
| Mounting torque ± 10 %                                 |                                   | Bridge to heatsink                          | 2.0              |                  | Nm    |

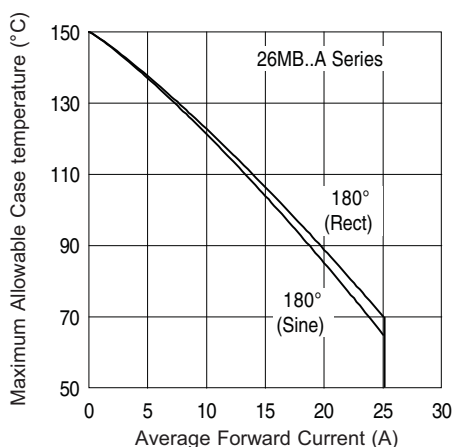
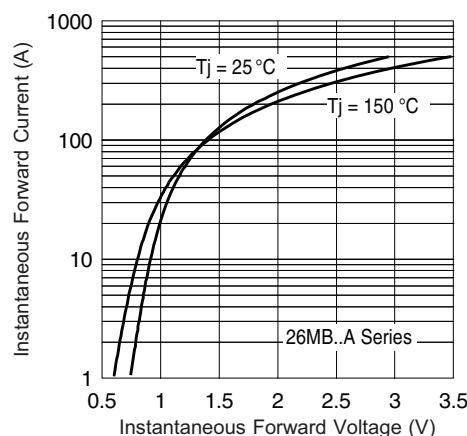


Fig. 1 - Current Ratings Characteristics


Fig. 2 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient Temperature

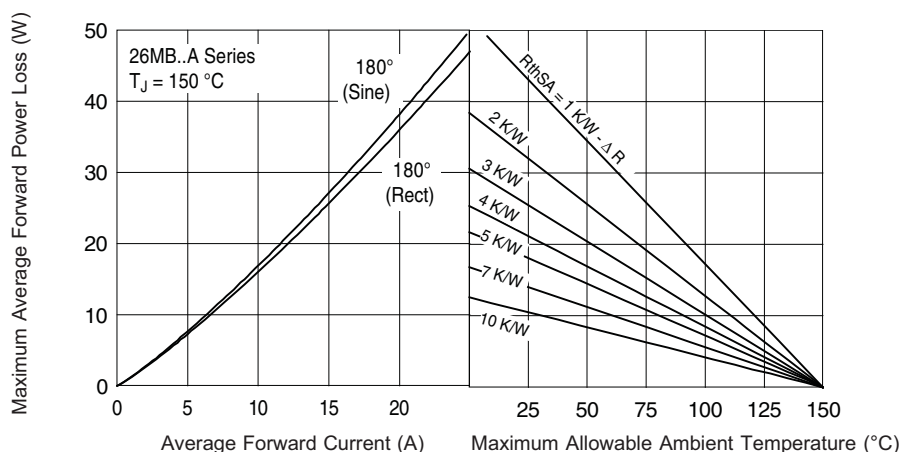


Fig. 3 - Total Power Loss Characteristics

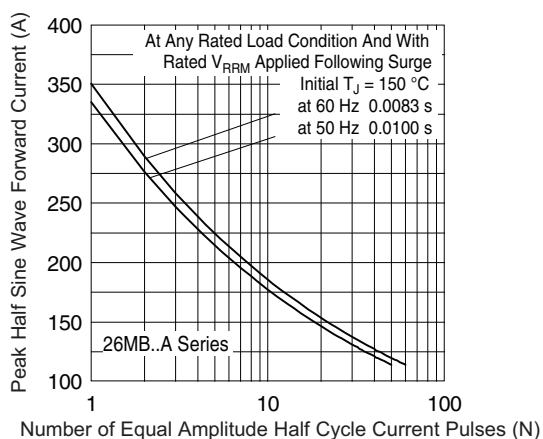


Fig. 4 - Maximum Non-Repetitive Surge Current

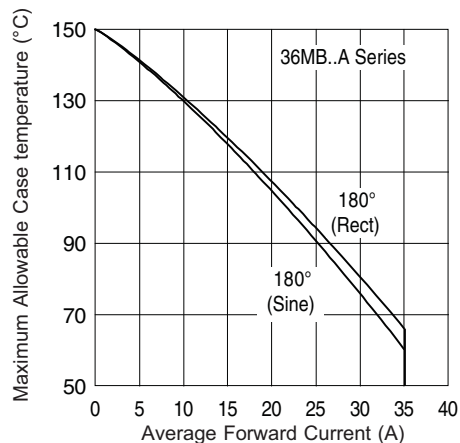


Fig. 6 - Current Ratings Characteristics

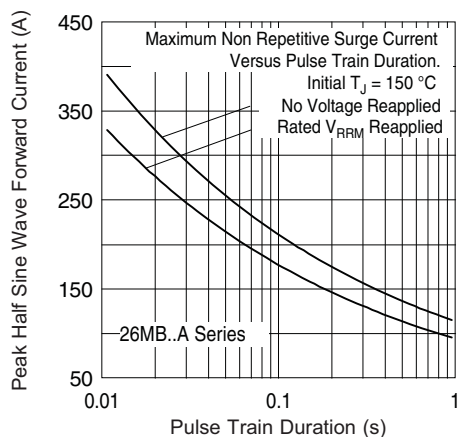


Fig. 5 - Maximum Non-Repetitive Surge Current

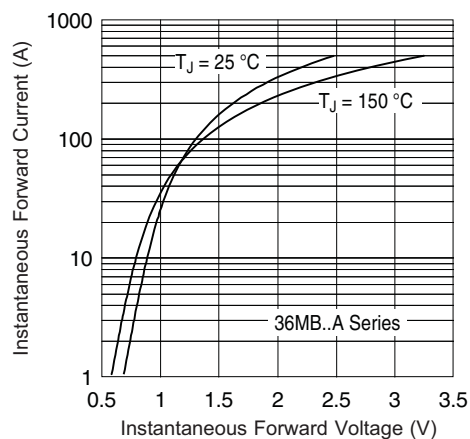


Fig. 7 - Forward Voltage Drop Characteristics

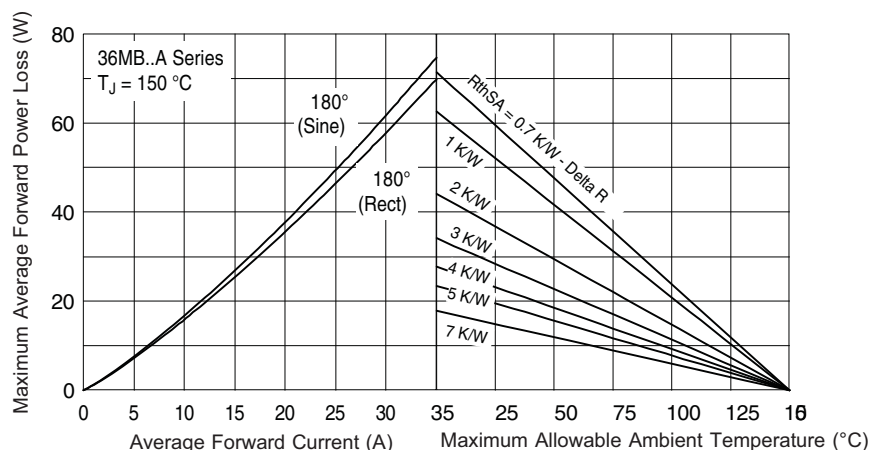


Fig. 8 - Total Power Loss Characteristics

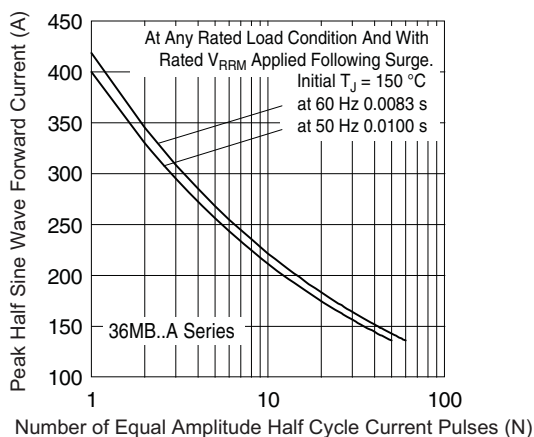


Fig. 9 - Maximum Non-Repetitive Surge Current

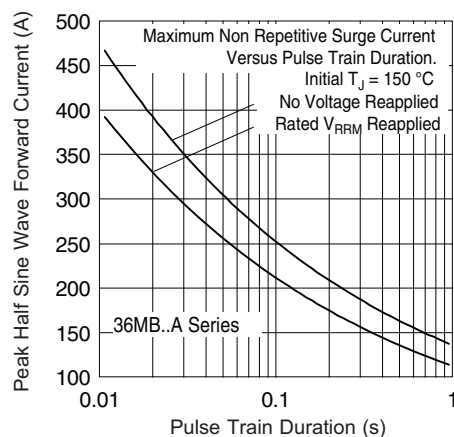


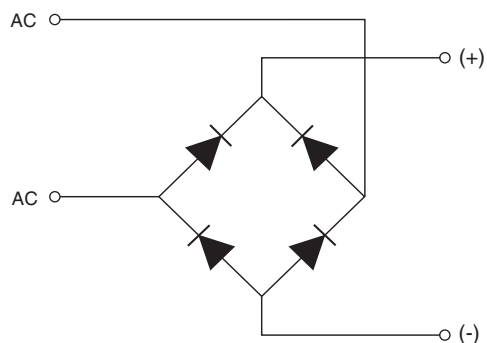
Fig. 10 - Maximum Non-Repetitive Surge Current

## ORDERING INFORMATION TABLE

| Device code | VS- | 36                                | MB | 120 | A |
|-------------|-----|-----------------------------------|----|-----|---|
|             | ①   | ②                                 | ③  | ④   | ⑤ |
| ①           | -   | Vishay Semiconductors product     |    |     |   |
| ②           | -   | Current rating code               |    |     |   |
| ③           | -   | Circuit configuration:            |    |     |   |
|             |     | MB = Single phase european coding |    |     |   |
| ④           | -   | Voltage code x 10 = $V_{RRM}$     |    |     |   |
| ⑤           | -   | Diode bridge rectifier:           |    |     |   |
|             |     | A = 26 MB, 36 MB series           |    |     |   |



**CIRCUIT CONFIGURATION**

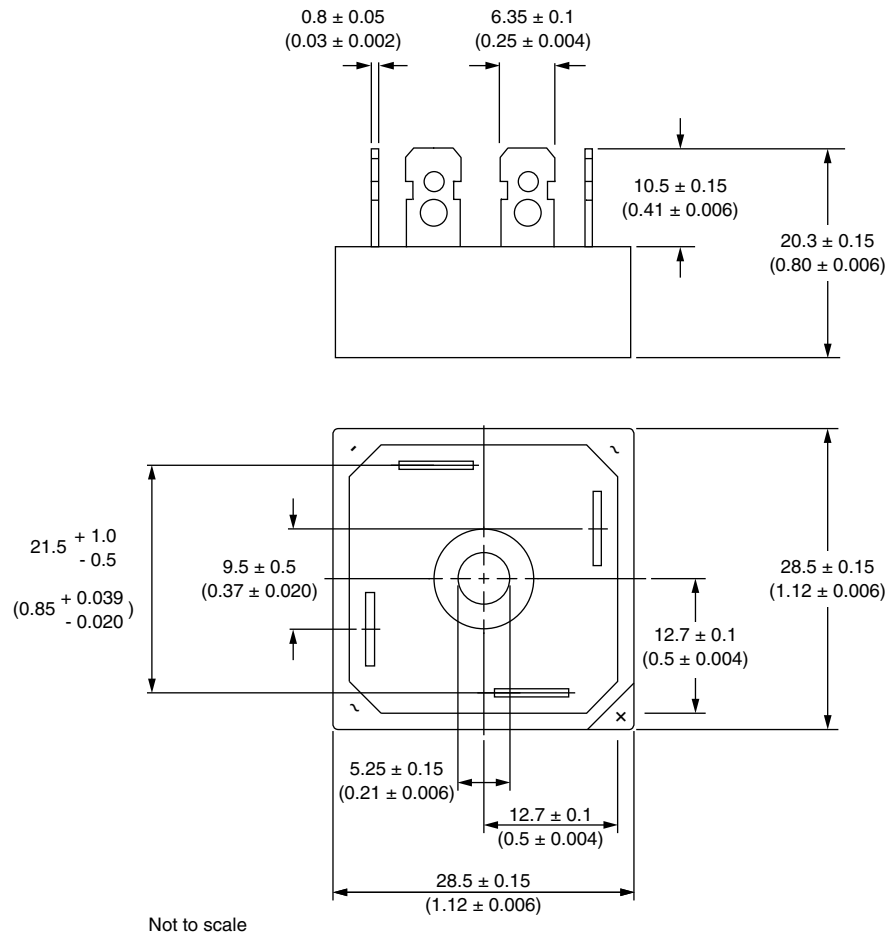


**LINKS TO RELATED DOCUMENTS**

|                            |                                                                        |
|----------------------------|------------------------------------------------------------------------|
| LINKS TO RELATED DOCUMENTS |                                                                        |
| Dimensions                 | <a href="http://www.vishay.com/doc?95326">www.vishay.com/doc?95326</a> |

## D-34

**DIMENSIONS** in millimeters (inches)



Suggested plugging force:  
200 N max; axially applied to fast-on terminals



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