

## 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
- Nickel plated terminals solderable using lead (Pb)-free solder; solder alloy Sn/Ag/Cu (SAC305); solder temperature 260 °C to 275 °C
- UL E300359 approved 
- Designed and qualified for industrial and consumer level
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


RoHS  
COMPLIANT

### PRIMARY CHARACTERISTICS

|                       |                     |
|-----------------------|---------------------|
| $I_O$                 | 25 A, 35 A          |
| $V_{RRM}$             | 1400 V to 1600 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                |
|           | $T_C$           | 70                | 55                | °C               |
| $I_{FSM}$ | 50 Hz           | 400               | 475               | A                |
|           | 60 Hz           | 420               | 500               |                  |
| $I^2_t$   | 50 Hz           | 790               | 1130              | A <sup>2</sup> s |
|           | 60 Hz           | 725               | 1030              |                  |
| $V_{RRM}$ | Range           | 1400 to 1600      |                   | V                |
| $T_J$     |                 | -55 to +150       |                   | °C               |

### ELECTRICAL SPECIFICATIONS

#### VOLTAGE RATINGS

| TYPE<br>NUMBER | VOLTAGE<br>CODE | $V_{RRM}$ , MAXIMUM REPETITIVE<br>PEAK REVERSE VOLTAGE<br>V | $V_{RSM}$ , MAXIMUM NON-REPETITIVE<br>PEAK REVERSE VOLTAGE<br>V | $I_{RRM}$ MAXIMUM<br>AT $T_J$ MAXIMUM<br>mA |
|----------------|-----------------|-------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------|
| 26MB..A        | 140             | 1400                                                        | 1500                                                            | 2                                           |
| 36MB..A        | 160             | 1600                                                        | 1700                                                            |                                             |

**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 <sup>2</sup> √t x √t <sub>x</sub> ;<br>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 of threshold voltage                            | V <sub>F(TO)1</sub> | (16.7 % x π x I <sub>F(AV)</sub> ) < I < π x I <sub>F(AV)</sub> ),<br>T <sub>J</sub> maximum                                                 |                                     |                                                    | 0.70              | 0.74              | V                  |
| High level of threshold voltage                           | V <sub>F(TO)2</sub> | (I > π x I <sub>F(AV)</sub> ), T <sub>J</sub> maximum                                                                                        |                                     |                                                    | 0.75              | 0.79              |                    |
| Low level forward slope resistance                        | r <sub>t1</sub>     | (16.7 % x π x I <sub>F(AV)</sub> ) < I < π x I <sub>F(AV)</sub> ),<br>T <sub>J</sub> maximum                                                 |                                     |                                                    | 7.0               | 5.5               | mΩ                 |
| High level forward slope resistance                       | r <sub>t2</sub>     | (I > π x I <sub>F(AV)</sub> ), T <sub>J</sub> maximum                                                                                        |                                     |                                                    | 6.4               | 5.2               |                    |
| 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) |                                     |                                                    | 1.25              | 1.3               | V                  |
| Maximum DC reverse current per diode                      | I <sub>RRM</sub>    | T <sub>J</sub> = 25 °C, at V <sub>RRM</sub>                                                                                                  |                                     |                                                    | 10                | 10                | μA                 |
| RMS isolation voltage base plate                          | V <sub>ISOL</sub>   | f = 50 Hz, t = 1 s                                                                                                                           |                                     |                                                    | 2700              | 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              | 1.35             | K/W   |
| Maximum thermal resistance, case to heatsink            | R <sub>thCS</sub>                 | Mounting surface, smooth, flat, and greased | 0.2              |                  |       |
| Mounting torque ± 10 %                                  |                                   | Bridge to heatsink                          | 2.0              |                  | Nm    |
| Approximate weight                                      |                                   |                                             | 20               |                  | g     |

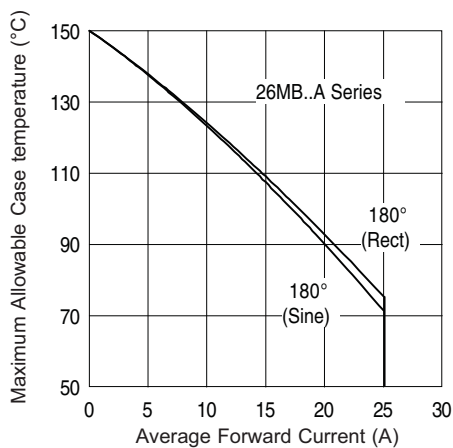


Fig. 1 - Current Ratings Characteristics

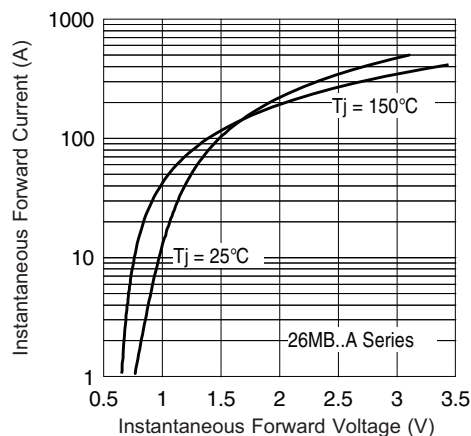


Fig. 2 - Forward Voltage Drop Characteristics

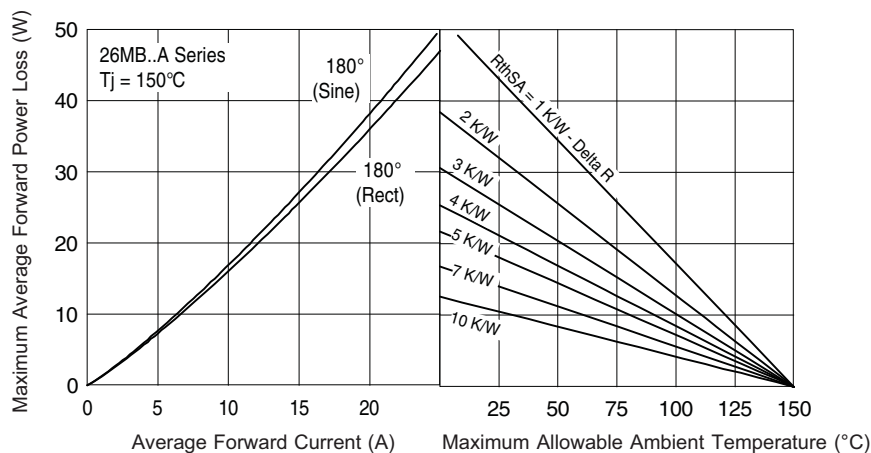


Fig. 3 - Total Power Loss Characteristics

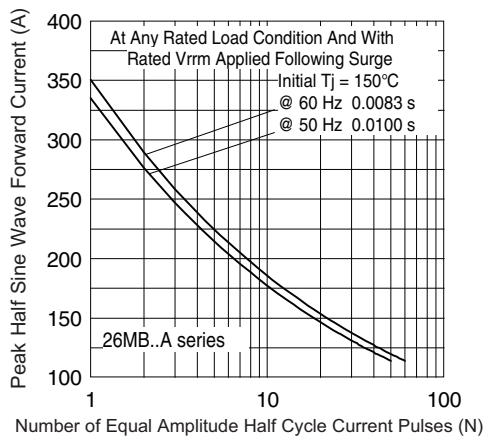


Fig. 4 - Maximum Non-Repetitive Surge Current

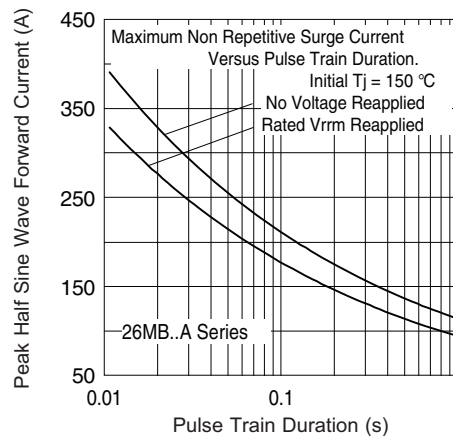


Fig. 5 - Maximum Non-Repetitive Surge Current

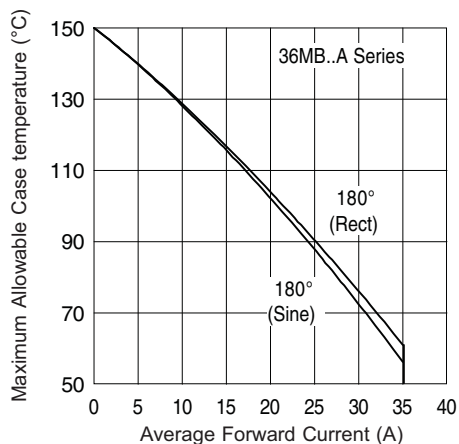


Fig. 6 - Current Ratings Characteristics

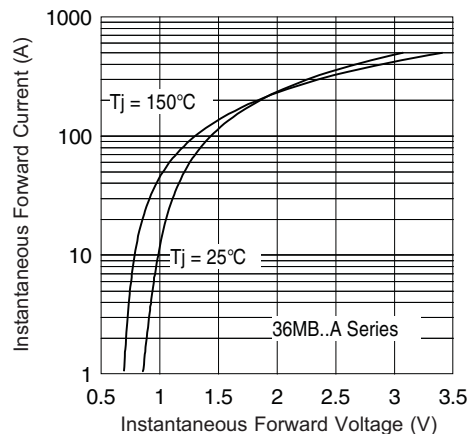


Fig. 7 - Forward Voltage Drop Characteristics

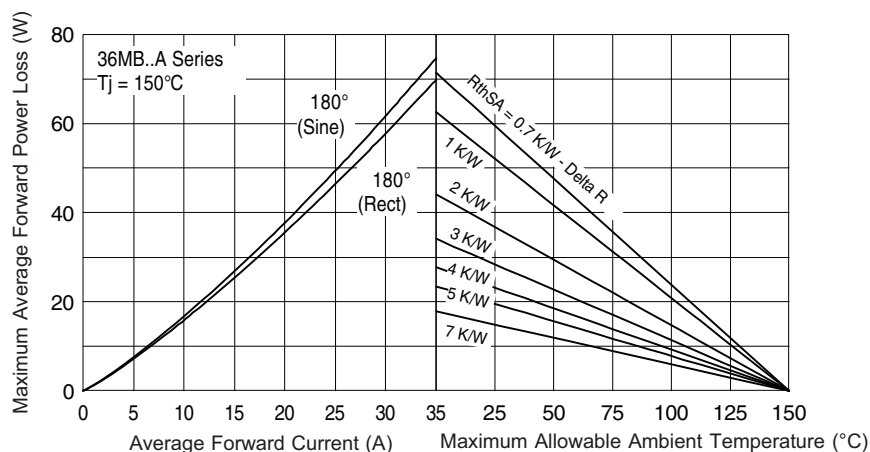


Fig. 8 - Total Power Loss Characteristics

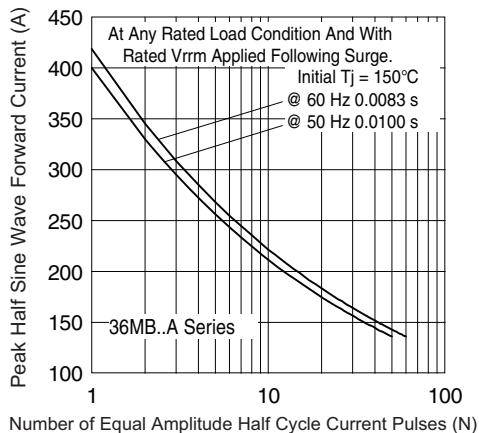


Fig. 9 - Maximum Non-Repetitive Surge Current

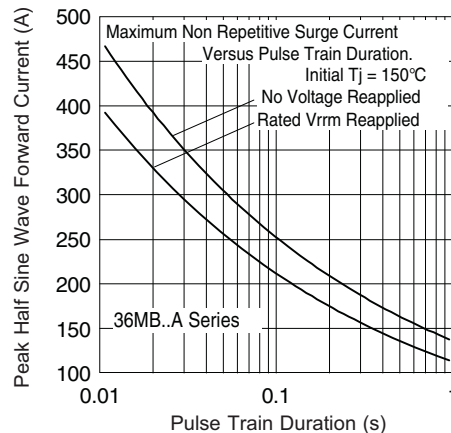


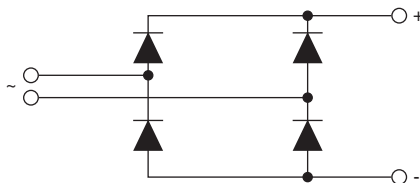
Fig. 10 - Maximum Non-Repetitive Surge Current

## ORDERING INFORMATION TABLE

| Device code | VS-                               | 36 | MB | 160 | 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           |    |    |     |   |

26 = 25 A (average)  
36 = 35 A (average)

## CIRCUIT CONFIGURATION



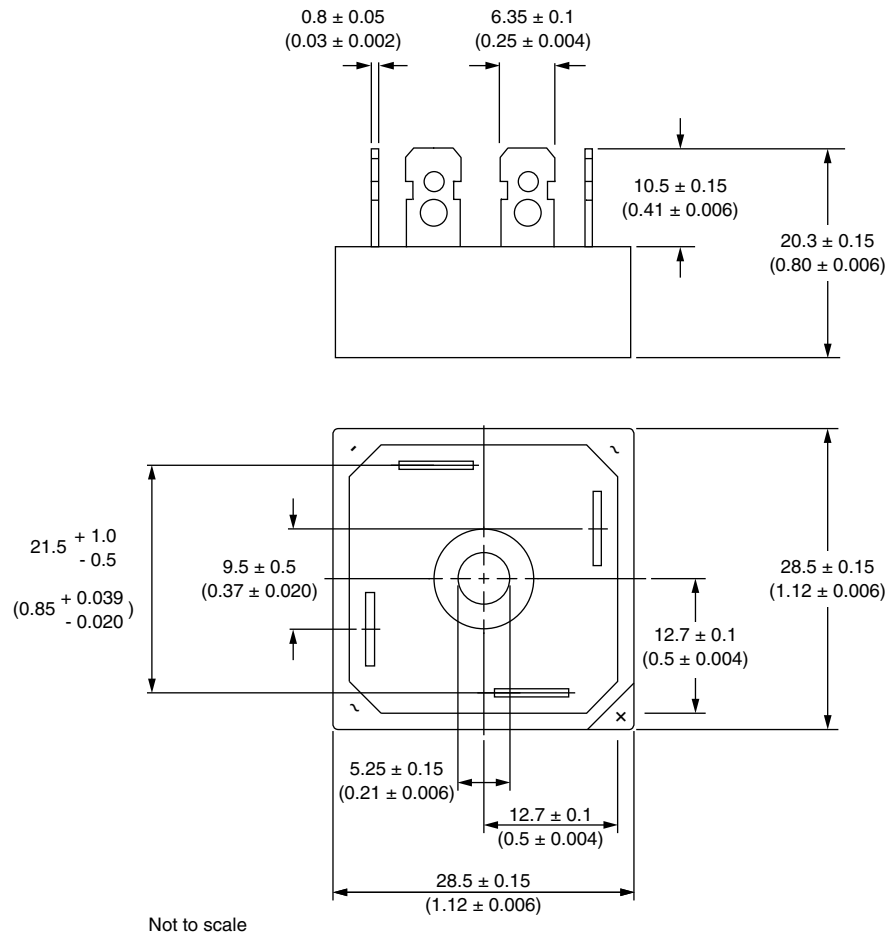
## LINKS TO RELATED DOCUMENTS

Dimensions

[www.vishay.com/doc?95326](http://www.vishay.com/doc?95326)

## D-34

**DIMENSIONS** in millimeters (inches)



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



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