

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/doc?99912


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 26MB..A | VALUES 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 ² 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 V | V_{RSM} , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V | I_{RRM} MAXIMUM AT T_J MAXIMUM |
| 26MB..A, 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 26MB..A | VALUES 36MB..A | UNITS | |
| Maximum DC output current at case temperature | I_O | Resistive or inductive load | | 25 | 35 | A | |
| | | Capacitive load | | 20 | 28 | | |
| | | | | 65 | 60 | °C | |
| Maximum peak, one-cycle non-repetitive forward current | I_{FSM} | t = 10 ms | No voltage reapplied | Initial $T_J = T_J$ maximum | 400 | 475 | A |
| | | t = 8.3 ms | | | | | |
| | | t = 10 ms | 100 % V_{RRM} reapplied | | 335 | 400 | |
| | | t = 8.3 ms | | | | | |
| Maximum I^2t for fusing | I^2t | t = 10 ms | No voltage reapplied | Initial $T_J = T_J$ maximum | 790 | 1130 | A ² s |
| | | t = 8.3 ms | | | | | |
| | | t = 10 ms | 100 % V_{RRM} reapplied | | 560 | 800 | |
| | | t = 8.3 ms | | | | | |
| Maximum $I^2\sqrt{t}$ for fusing | $I^2\sqrt{t}$ | I^2t for time $t_x = I_2\sqrt{t} \times \sqrt{t_x}$; $0.1 \leq t_x \leq 10$ ms, $V_{RRM} = 0$ V | | 5.6 | 11.3 | kA ² √s | |
| Low level value of threshold voltage | $V_{F(TO)1}$ | $(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, T_J maximum | | 0.76 | 0.79 | V | |
| High level value of threshold voltage | $V_{F(TO)2}$ | $(I > \pi \times I_{F(AV)})$, T_J maximum | | 0.92 | 0.96 | | |
| Low level forward slope resistance | r_{t1} | $(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, T_J maximum | | 6.8 | 5.8 | mΩ | |
| High level forward slope resistance | r_{t2} | $(I > \pi \times I_{F(AV)})$, T_J maximum | | 5.0 | 4.5 | | |
| Maximum forward voltage drop | V_{FM} | $T_J = 25$ °C, $t_p = 400$ μs, $I_{FM} = 40$ A _{pk} (26MB), $I_{FM} = 55$ A _{pk} (36MB) | | 1.11 | 1.14 | V | |
| Maximum DC reverse current | I_{RRM} | $T_J = 25$ °C, per diode at V_{RRM} | | 10 | | μA | |
| RMS isolation voltage base plate | V_{INS} | f = 50 Hz, t = 1 s | | 2700 | | V | |

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

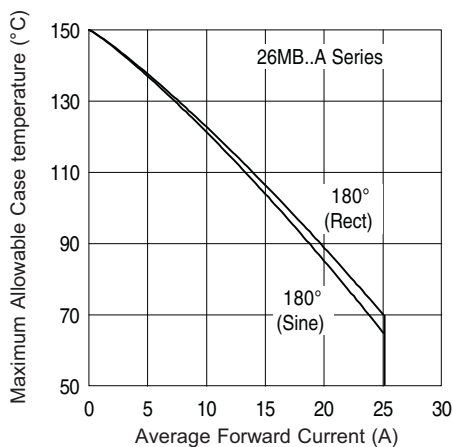


Fig. 1 - Current Ratings Characteristics

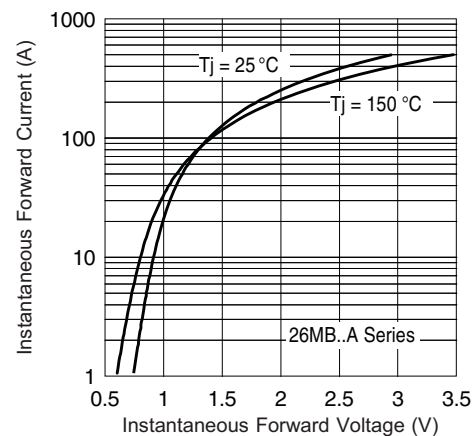


Fig. 2 - Forward Voltage Drop Characteristics Maximum Allowable Ambient Temperature

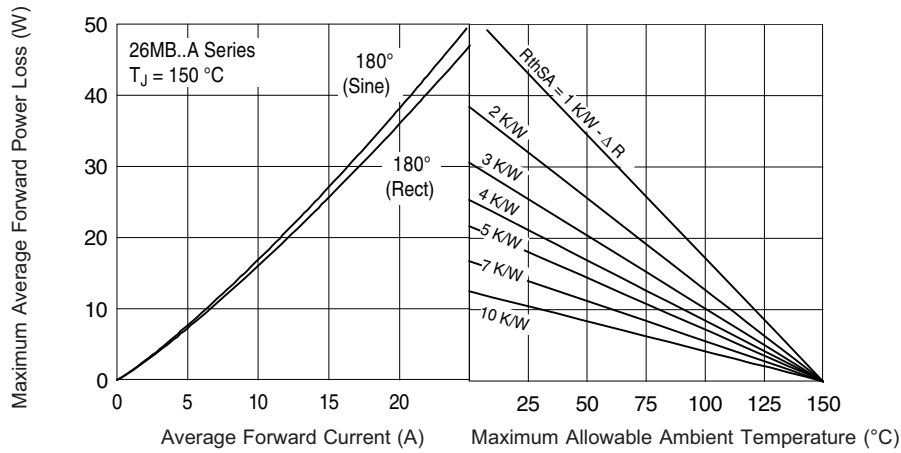


Fig. 3 - Total Power Loss Characteristics

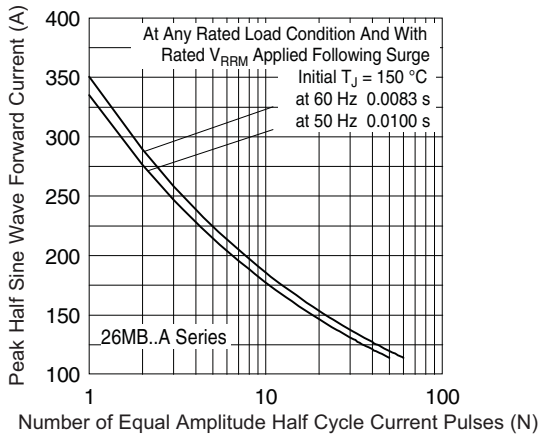


Fig. 4 - Maximum Non-Repetitive Surge Current

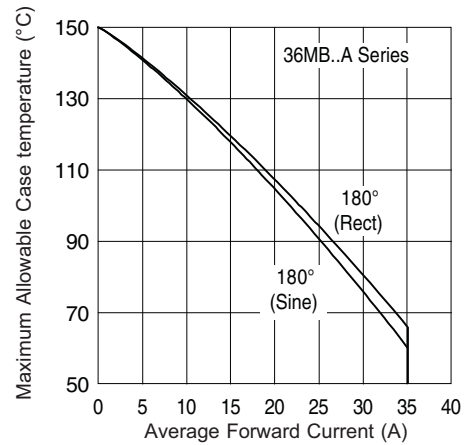


Fig. 6 - Current Ratings Characteristics

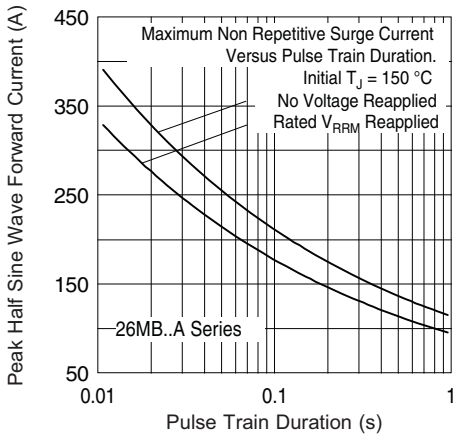


Fig. 5 - Maximum Non-Repetitive Surge Current

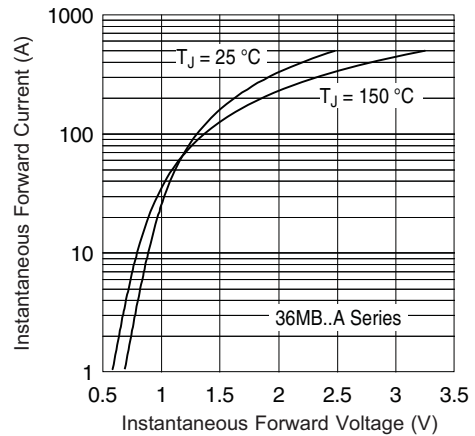


Fig. 7 - Forward Voltage Drop Characteristics

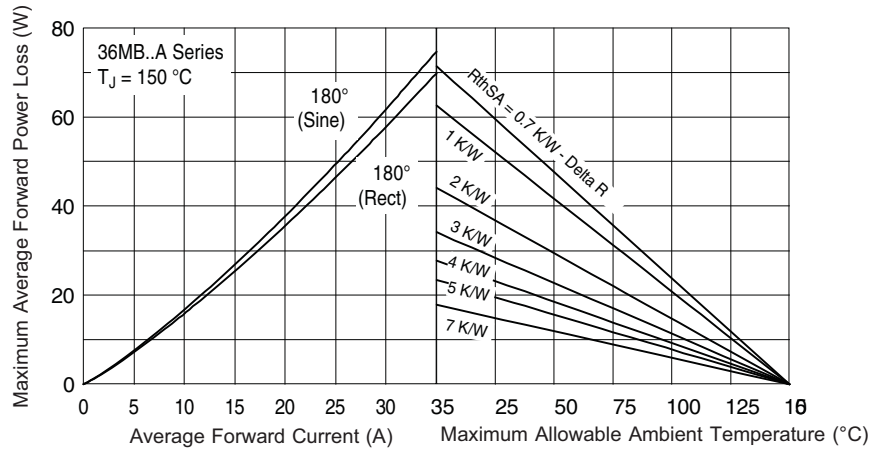


Fig. 8 - Total Power Loss Characteristics

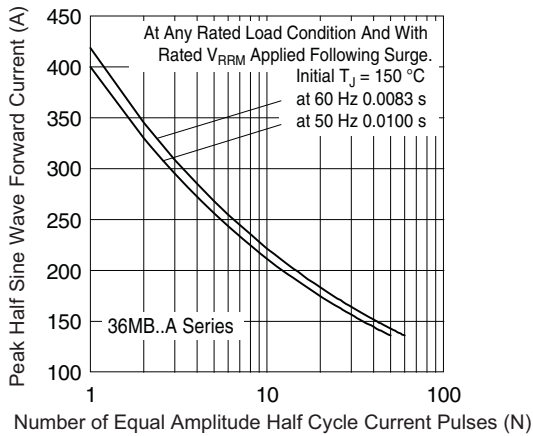


Fig. 9 - Maximum Non-Repetitive Surge Current

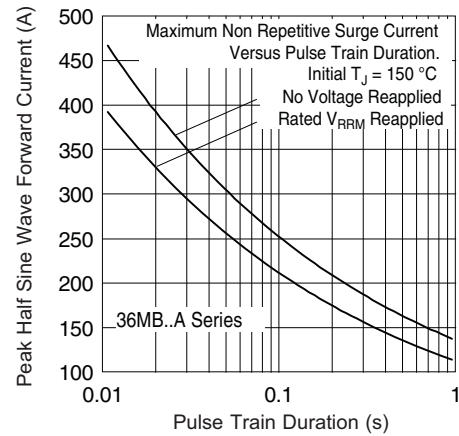


Fig. 10 - Maximum Non-Repetitive Surge Current

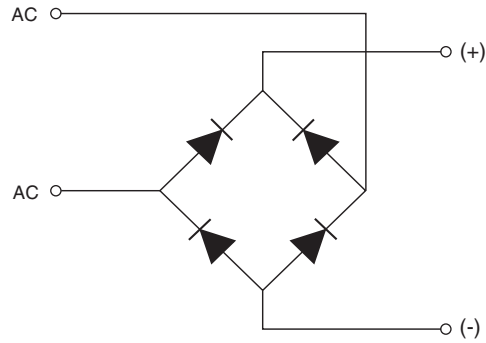
ORDERING INFORMATION TABLE

| | | | | | |
|-------------|------------|-----------|-----------|------------|----------|
| Device code | VS- | 36 | MB | 120 | A |
| | ① | ② | ③ | ④ | ⑤ |

| | | | |
|----------|---|-----------------------------------|--|
| 1 | - | Vishay Semiconductors product | |
| 2 | - | Current rating code | 26 = 25 A (average) 36 = 35 A (average) |
| 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

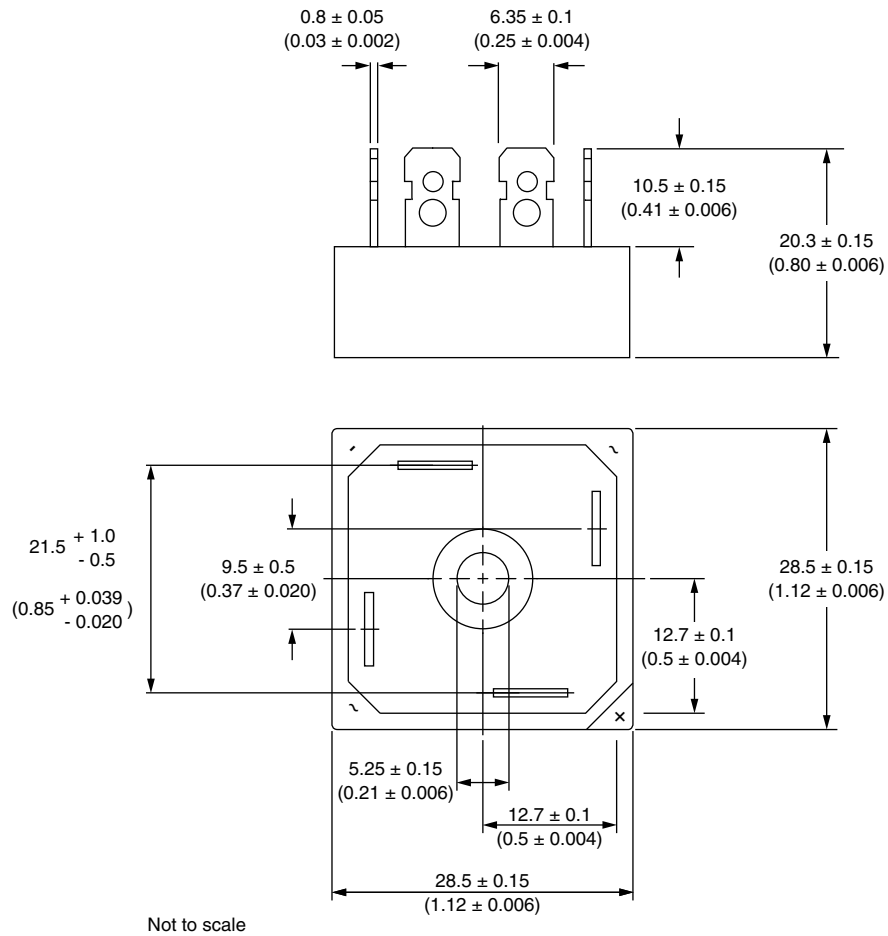


LINKS TO RELATED DOCUMENTS

| | |
|----------------------------|--|
| LINKS TO RELATED DOCUMENTS | |
| Dimensions | 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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