

Single Phase Bridge Rectifier, 25 A, 35 A




D-34



RoHS
COMPLIANT

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

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.

| PRIMARY CHARACTERISTICS | |
|-------------------------|---------------------|
| I_O | 25 A, 35 A |
| V_{RRM} | 1400 V to 1600 V |
| Package | D-34 |
| Circuit configuration | Single phase bridge |

| MAJOR RATINGS AND CHARACTERISTICS | | | | |
|-----------------------------------|-----------------|-------------------|-------------------|------------------|
| SYMBOL | CHARACTERISTICS | VALUES 26MB..A | VALUES 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^2t | 50 Hz | 790 | 1130 | A ² s |
| | 60 Hz | 725 | 1030 | |
| V_{RRM} | Range | 1400 to 1600 | | 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 mA |
| 26MB..A | 140 | 1400 | 1500 | 2 |
| 36MB..A | 160 | 1600 | 1700 | |



| 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 | | | 420 | 500 | |
| | | t = 10 ms | 100 % V _{RRM} reapplied | | 335 | 400 | |
| | | t = 8.3 ms | | | 350 | 420 | |
| Maximum I ² t for fusing | I ² t | t = 10 ms | No voltage reapplied | Initial T _J = T _J maximum | 790 | 1130 | A ² s |
| | | t = 8.3 ms | | | 725 | 1030 | |
| | | t = 10 ms | 100 % V _{RRM} reapplied | | 560 | 800 | |
| | | t = 8.3 ms | | | 512 | 730 | |
| Maximum I ² √t for fusing | I ² √t | I ² t for time t _x = I ² √t × √t _x ; 0.1 ≤ t _x ≤ 10 ms, V _{RRM} = 0 V | | 5.6 | 11.3 | kA ² √s | |
| Low level of threshold voltage | V _{F(TO)1} | (16.7 % × π × I _{F(AV)} < I < π × I _{F(AV)}), T _J maximum | | 0.70 | 0.74 | V | |
| High level of threshold voltage | V _{F(TO)2} | (I > π × I _{F(AV)}), T _J maximum | | 0.75 | 0.79 | | |
| Low level forward slope resistance | r _{t1} | (16.7 % × π × I _{F(AV)} < I < π × I _{F(AV)}), T _J maximum | | 7.0 | 5.5 | mΩ | |
| High level forward slope resistance | r _{t2} | (I > π × I _{F(AV)}), T _J maximum | | 6.4 | 5.2 | | |
| 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) | | 1.25 | 1.3 | V | |
| Maximum DC reverse current per diode | I _{RRM} | T _J = 25 °C, at V _{RRM} | | 10 | 10 | μA | |
| RMS isolation voltage base plate | V _{ISOL} | f = 50 Hz, t = 1 s | | 2700 | 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 | 1.35 | K/W |
| Maximum thermal resistance, case to heatsink | R _{thCS} | Mounting surface, smooth, flat, and greased | | 0.2 | | |
| Mounting torque ± 10 % | | Bridge to heatsink | | 2.0 | | Nm |
| Approximate weight | | | | 20 | | g |

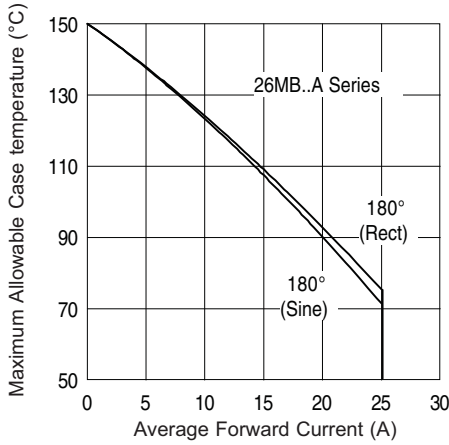


Fig. 1 - Current Ratings Characteristics

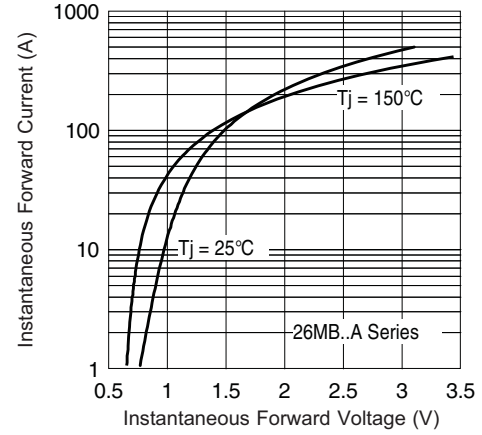


Fig. 2 - Forward Voltage Drop Characteristics

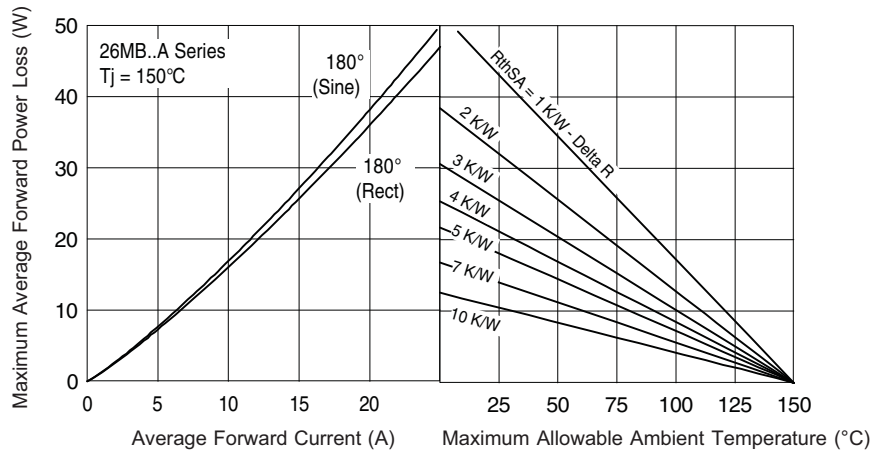


Fig. 3 - Total Power Loss Characteristics

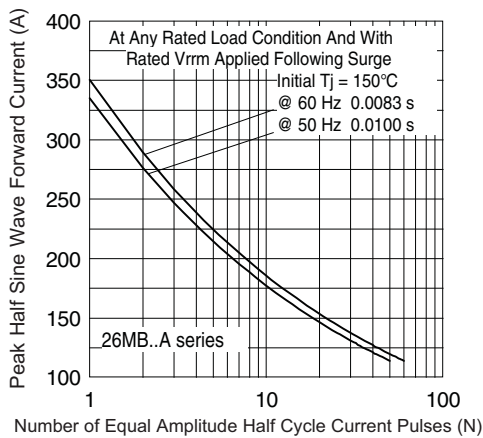


Fig. 4 - Maximum Non-Repetitive Surge Current

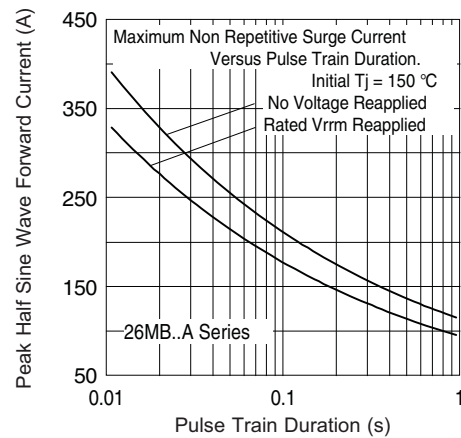


Fig. 5 - Maximum Non-Repetitive Surge Current

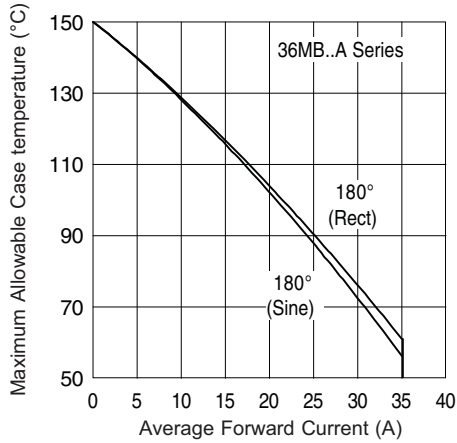


Fig. 6 - Current Ratings Characteristics

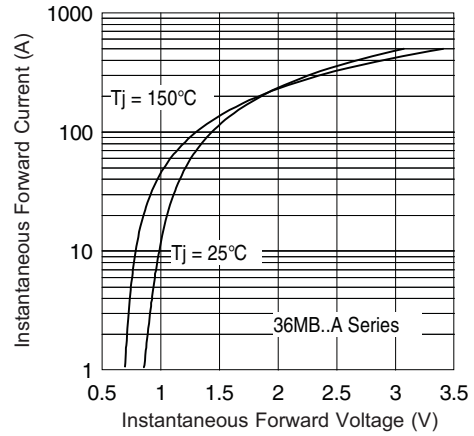


Fig. 7 - Forward Voltage Drop Characteristics

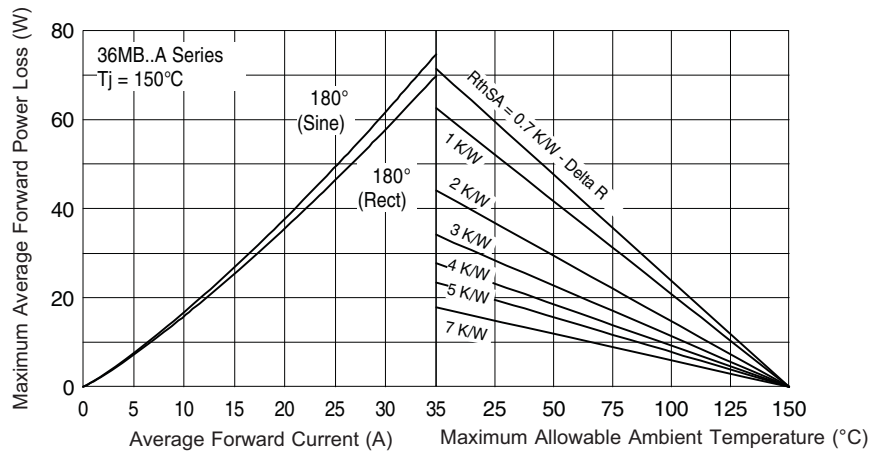


Fig. 8 - Total Power Loss Characteristics

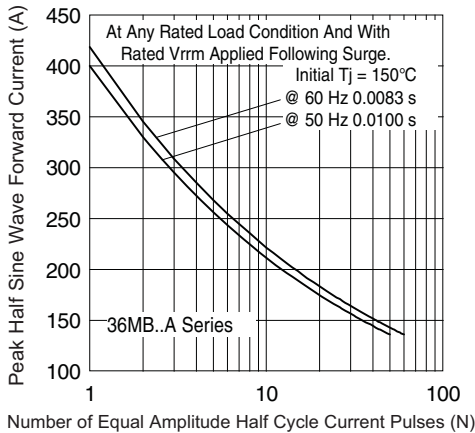


Fig. 9 - Maximum Non-Repetitive Surge Current

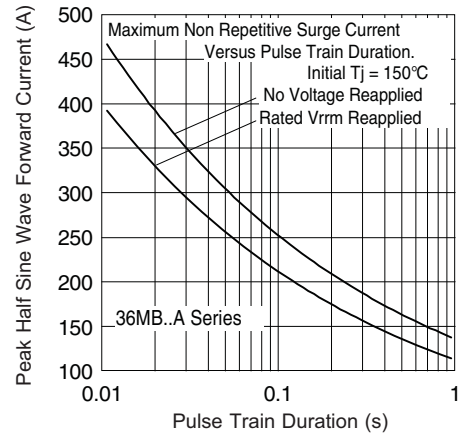
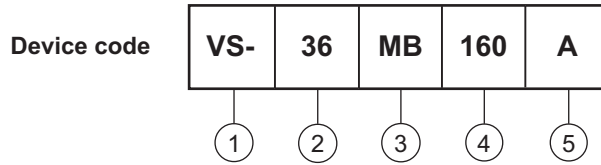


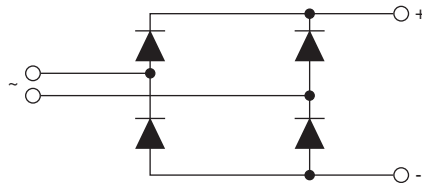
Fig. 10 - Maximum Non-Repetitive Surge Current

ORDERING INFORMATION TABLE



- 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

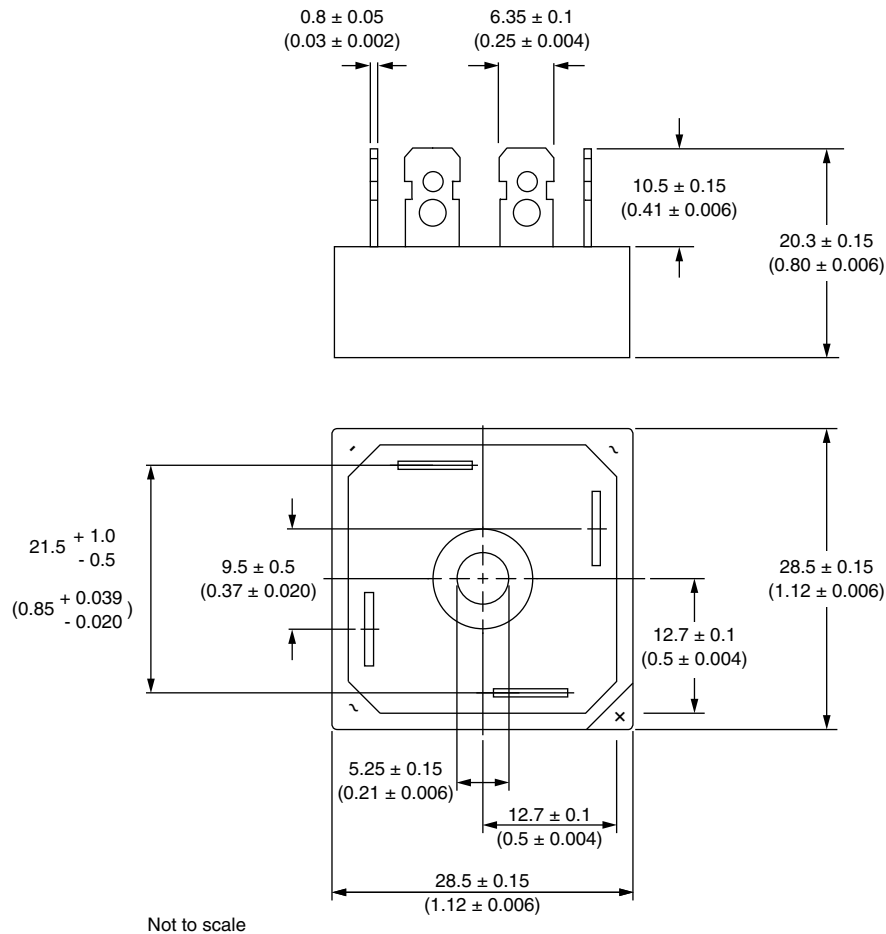
CIRCUIT CONFIGURATION



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