

## Three Phase Bridge (Power Modules), 25/35 A


**D-63**
**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
- Gold plated terminals solderable using lead (Pb)-free solder; solder alloy Sn/Ag/Cu (SAC305); solder temperature 260 to 275 °C
- RoHS compliant
- Designed and qualified for industrial and consumer level


**RoHS  
COMPLIANT**
**PRODUCT SUMMARY**

|       |         |
|-------|---------|
| $I_o$ | 25/35 A |
|-------|---------|

**DESCRIPTION**

A range of extremely compact, encapsulated three 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 | 26MT        | 36MT | UNITS            |
|-----------|-----------------|-------------|------|------------------|
| $I_o$     |                 | 25          | 35   | A                |
|           | $T_c$           | 70          | 60   | °C               |
| $I_{FSM}$ | 50 Hz           | 360         | 475  | A                |
|           | 60 Hz           | 375         | 500  |                  |
| $I^2t$    | 50 Hz           | 635         | 1130 | A <sup>2</sup> s |
|           | 60 Hz           | 580         | 1030 |                  |
| $V_{RRM}$ |                 | 100 to 1600 |      | 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<br>mA |
|---------------|--------------|--|--|--|
| 26MT../36MT.. | 10           | 100  | 150  | 2  |
|               | 20           | 200  | 275  |  |
|               | 40           | 400  | 500  |  |
|               | 60           | 600  | 725  |  |
|               | 80           | 800  | 900  |  |
|               | 100          | 1000   | 1100   |  |
|               | 120          | 1200   | 1300   |  |
|               | 140          | 1400   | 1500   |  |
|               | 160          | 1600   | 1700   |  |

| FORWARD CONDUCTION                                     |               |  |                           |                                |        |               |        |
|--|---------------|--|---------------------------|--------------------------------|--------|---------------|--------|
| PARAMETER  | SYMBOL        | TEST CONDITIONS  |                           | VALUES                         |        | UNITS         |        |
|  |               |  |                           | 26MT                           | 36MT   |               |        |
| Maximum DC output current at $T_C$                     | $I_O$         | 120° rect. conduction angle  |                           | 25                             | 35     | A             |        |
|  |               |  |                           | 70                             | 60     | °C            |        |
| Maximum peak, one-cycle non-repetitive forward current | $I_{FSM}$     | t = 10 ms  | No voltage reapplied      | Initial<br>$T_J = T_J$ maximum | 360    | 475           | A      |
|  |               | t = 8.3 ms   |                           |                                | 375    | 500           |        |
|  |               | t = 10 ms  | 100 % $V_{RRM}$ reapplied |                                | 300    | 400           |        |
|  |               | t = 8.3 ms   |                           |                                | 314    | 420           |        |
| Maximum $I^2t$ for fusing                              | $I^2t$        | t = 10 ms  | No voltage reapplied      |                                | 635    | 1130          | $A^2s$ |
|  |               | t = 8.3 ms   |                           |                                | 580    | 1030          |        |
|  |               | t = 10 ms  | 100 % $V_{RRM}$ reapplied |                                | 450    | 800           |        |
|  |               | t = 8.3 ms   |                           |                                | 410    | 730           |        |
| 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 |                           | 6360                           | 11 300 | $A^2\sqrt{s}$ |        |
| Low level of threshold voltage                         | $V_{F(TO)1}$  | $(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J$ maximum                  |                           | 0.88                           | 0.86   | V             |        |
| High level of threshold voltage                        | $V_{F(TO)2}$  | $(I > \pi \times I_{F(AV)})$ , $T_J$ maximum   |                           | 1.13                           | 1.03   |               |        |
| Low level forward slope resistance                     | $r_{t1}$      | $(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J$ maximum                  |                           | 7.9                            | 6.3    | m $\Omega$    |        |
| High level forward slope resistance                    | $r_{t2}$      | $(I > \pi \times I_{F(AV)})$ , $T_J$ maximum   |                           | 5.2                            | 5.0    |               |        |
| Maximum forward voltage drop                           | $V_{FM}$      | $T_J = 25$ °C, $I_{FM} = 40$ Apk - per single junction   |                           | 1.26                           | 1.19   | V             |        |
| Maximum DC reverse current                             | $I_{RRM}$     | $T_J = 25$ °C, per junction at rated $V_{RRM}$   |                           | 100                            |        | $\mu$ A       |        |
| RMS isolation voltage                                  | $V_{INS}$     | $T_J = 25$ °C, all terminal shorted; f = 50 Hz, t = 1 s  |                           | 2700                           |        | V             |        |

| THERMAL - MECHANICAL SPECIFICATIONS            |                |   |  |             |      |       |
|--|----------------|---|--|-------------|------|-------|
| PARAMETER                                      | SYMBOL         | TEST CONDITIONS   |  | VALUES      |      | UNITS |
|  |                |   |  | 26MT        | 36MT |       |
| Maximum junction and storage temperature range | $T_J, T_{Stg}$ |   |  | - 55 to 150 |      | °C    |
| Maximum thermal resistance, junction to case   | $R_{thJC}$     | DC operation per bridge (based on total power loss of bridge) |  | 1.42        | 1.35 | K/W   |
| Maximum thermal resistance, case to heatsink   | $R_{thCS}$     | Mounting surface, smooth, flat and greased                    |  | 0.2         | 0.2  |       |
| Approximate weight                             |                |   |  | 20          |      | g     |
| Mounting torque $\pm 10$ %                     |                | Bridge to heatsink with screw M4                              |  | 2.0         |      | Nm    |



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Vishay High Power Products

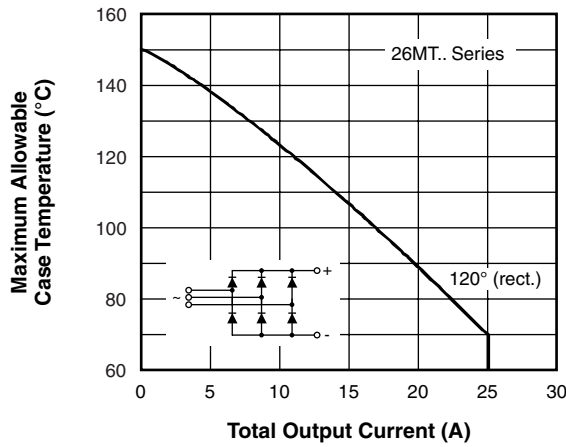


Fig. 1 - Current Ratings Characteristics



Fig. 2 - Forward Voltage Drop Characteristics

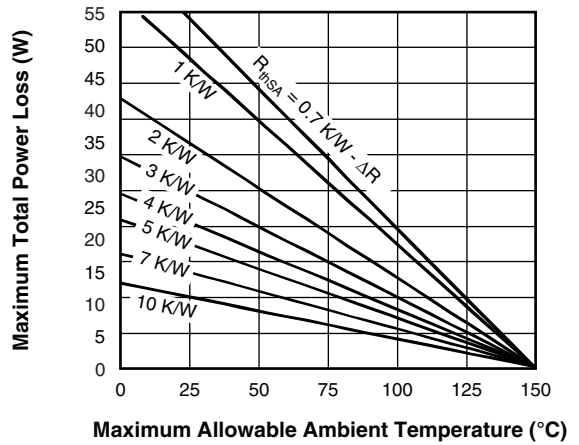
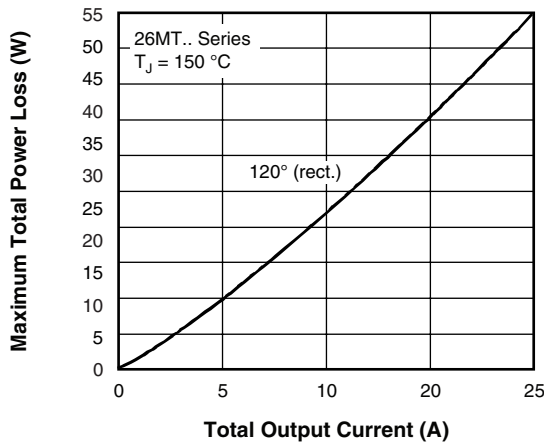


Fig. 3 - Total Power Loss Characteristics



Fig. 4 - Maximum Non-Repetitive Surge Current



Fig. 5 - Maximum Non-Repetitive Surge Current

# 26MT../36MT.. Series



Vishay High Power Products Three Phase Bridge  
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Fig. 6 - Current Ratings Characteristics



Fig. 7 - Forward Voltage Drop Characteristics

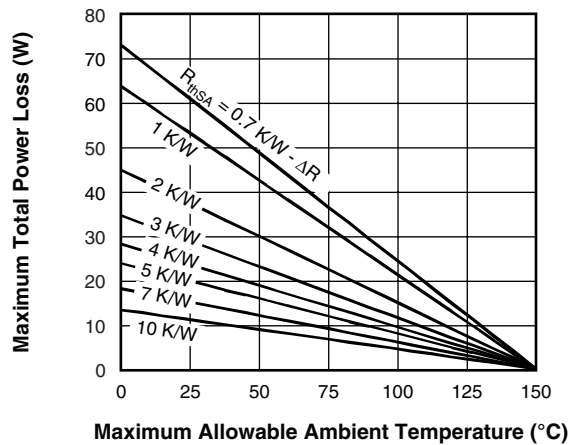


Fig. 8 - Total Power Loss Characteristics



Fig. 9 - Maximum Non-Repetitive Surge Current



Fig. 10 - Maximum Non-Repetitive Surge Current

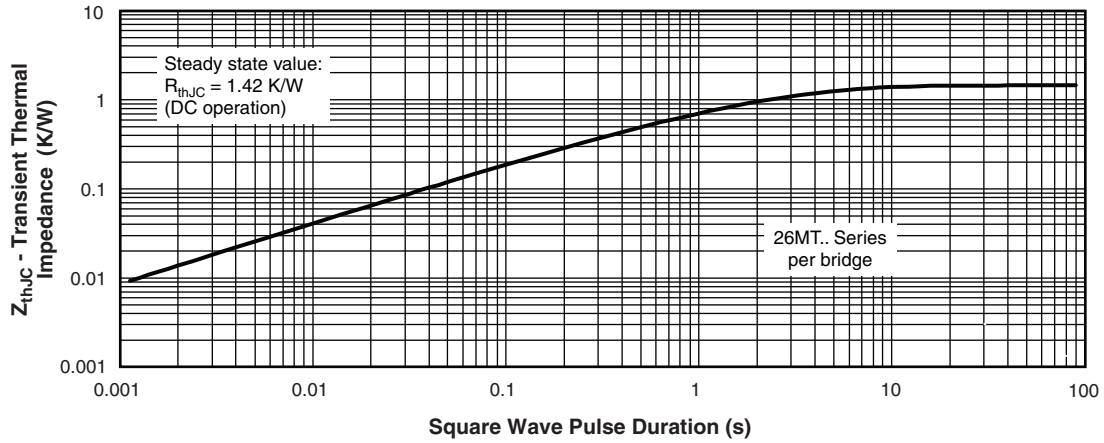


Fig. 11 - Thermal Impedance  $Z_{thJC}$  Characteristics

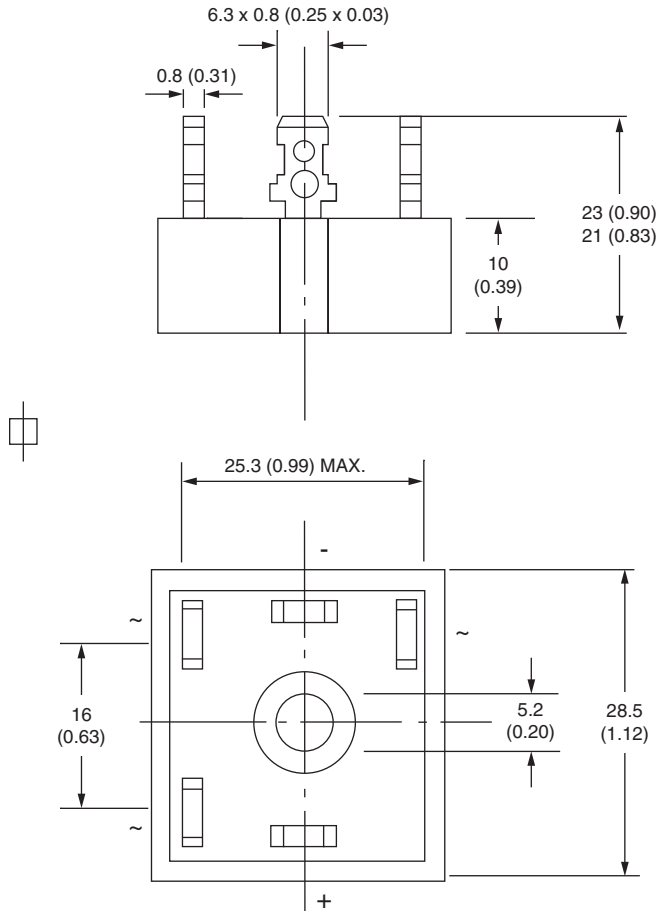


Fig. 12 - Thermal Impedance  $Z_{thJC}$  Characteristics



## D-63

**DIMENSIONS** in millimeters (inches)



Suggested plugging force:  
400 N maximum;  
axially applied to fast on terminals

Not to scale



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