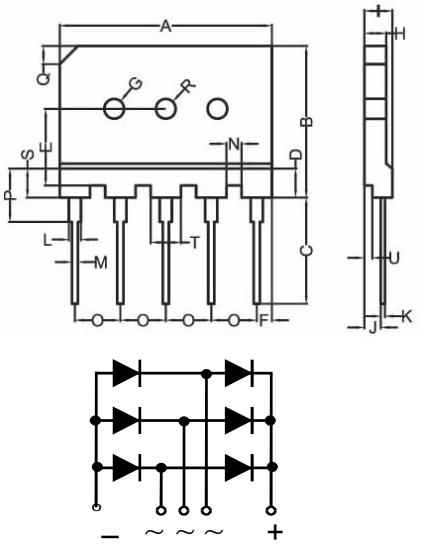
# S3PDB42N**PAV

## Three Phase Bridge Rectifiers

**AVALANCHE DIODE INSIDE**


| | $V_{RMS}$ V | $V_{RRM}$ V |
|---|---|---|
| S3PDB42N08PAV | 900 | 800 |
| S3PDB42N12PAV | 1300 | 1200 |
| S3PDB42N14PAV | 1500 | 1400 |
| S3PDB42N16PAV | 1700 | 1600 |
| S3PDB42N18PAV | 1900 | 1800 |

**Dimensions(mm)**




| [mm] | MIN | TYP | MAX |
|---|---|---|---|
| A | 34. 70 | 35. 0 | 35. 30 |
| B | 24. 70 | 25. 0 | 25. 30 |
| C | 17. 0 | 17. 50 | 18. 0 |
| D | 4. 70 | 4. 80 | 4. 90 |
| E | 12. 45 | 12. 65 | 12. 85 |
| F | 2. 30 | 2. 50 | 2. 70 |
| G | 3. 10 | 3. 25 | 3. 40 |
| H | 3. 40 | 3. 60 | 3. 80 |
| I | 4. 40 | 4. 60 | 4. 80 |
| J | 2. 50 | 2. 70 | 2. 90 |
| K | 0. 60 | 0. 70 | 0. 80 |
| L | 2. 00 | 2. 20 | 2. 40 |
| M | 0. 90 | 1. 0 | 1. 10 |
| N | 2. 50 | 2. 60 | 2. 90 |
| O | 7. 30 | 7. 50 | 7. 70 |
| P | 5. 40 | 5. 50 | 5. 60 |
| Q | | (3. 0) × 45° | |
| R | Ø3. 10 | Ø3. 25 | Ø3. 40 |
| S | 1. 40 | 1. 50 | 1. 60 |
| T | 4. 60 | 4. 80 | 5. 0 |
| U | 1. 20 | 1. 30 | 1. 40 |

| Symbol | Test Conditions | Characteristic Values | Unit |
|---|---|---|---|
| $I_{(AV)}$ | Maximum Average Forward(With Heatsink )<br>Rectified Current @$T_C$=100°C(Without Heatsink) | 42.0<br>6.0 | A |
| $I_{FSM}$ | Peak Forward Surge Current 8.3ms Single Half-Sine-Wave<br>Superimposed On Rated Load (JEDEC METHOD) | 390 | A |
| $P_{RSM}$ | Per diode chip, $T_{VJ}$ = 25°C, $t_p$ = 10 μs | 6.0 | KW |
| $V_F$ | $I_F$=42.0A;$T_{VJ}$=25 °C | 1.20 | V |
| $I_R$ | Maximum DC Reverse Current @TJ=25 °C<br>At Rated DC Blocking Voltage @TJ=125 °C | 10<br>200 | μA |
| $I^2t$ | $I^2t$ Rating For Fusing(t＜8.3ms) | 720 | $A^2S$ |
| $V_{ISO}$ | RMS 1min | 2500 | VAC |
| $R_{thJC}$ | Per module | 0.70 | °C/W |
| $T_J$ | Operating Temperature Range | -40...+180 | °C |
| $T_{stg}$ | Storage Temperature Range | -40...+180 | °C |
| $M_d$ | Mounting Torque (M3) | 0.5~0.8 | Nm |

### *FEATURES*

* Rating to 1800V PRV
* Ideal for printed circuit board
* Low forward voltage drop, high current capability
* Reliable low cost construction utilizing molded plastic technique results in inexpensive product
* UL File E310749
* RoHS Compliant
* Avalanche Diode dies inside

### *MECHANICAL DATA*

* Polarity:Symbols molded on body
* Weight:0.23 ounces,6.6 grams
* Mounting position:Any

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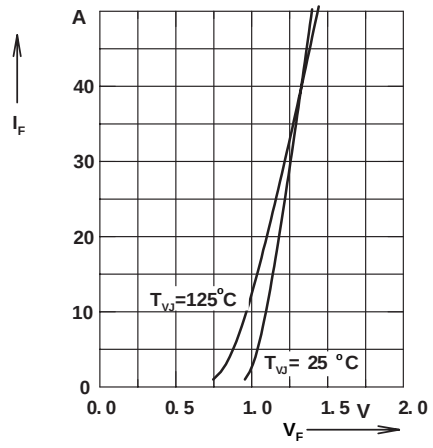


Fig.1 Forward current versus voltage drop per diode

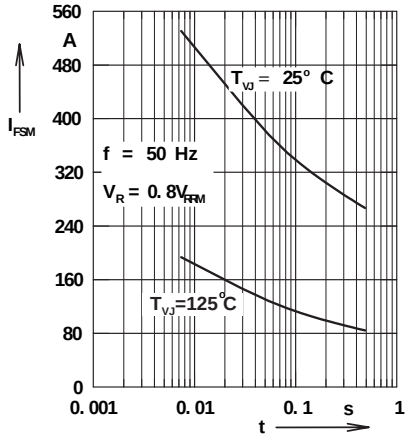


Fig.2 Surge overload current

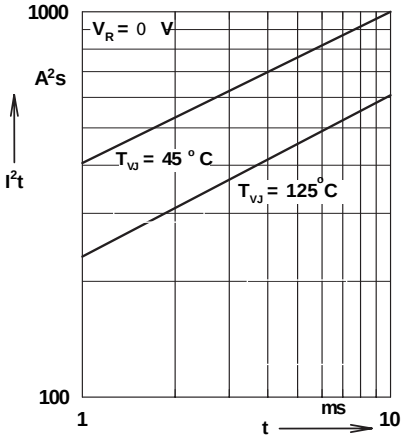


Fig.3 $I^2t$ versus time per diode

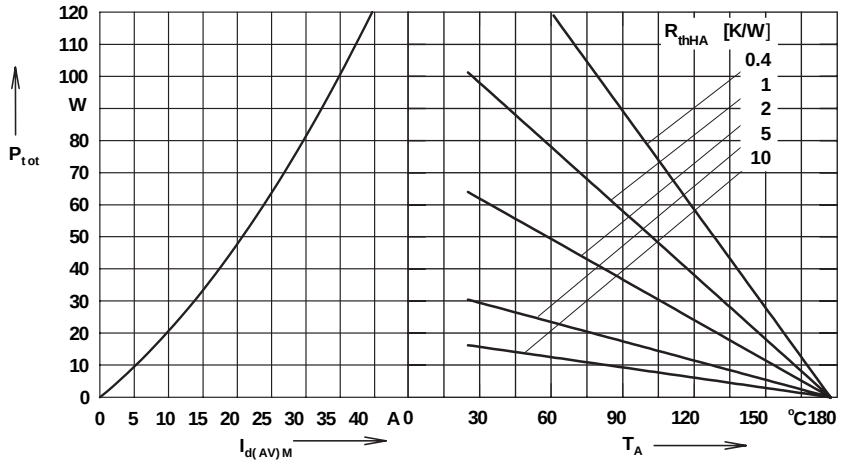


Fig.4 Power dissipation versus direct output current and ambient tempreature, sine180

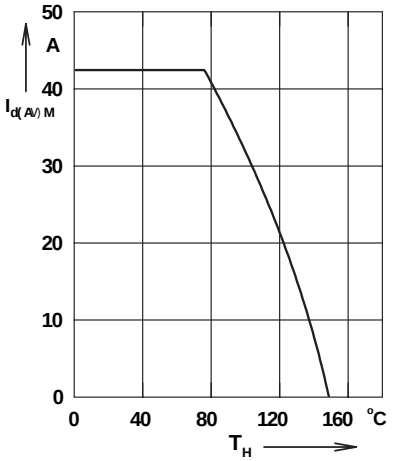


Fig.5 Max. forward current vs. case temperature

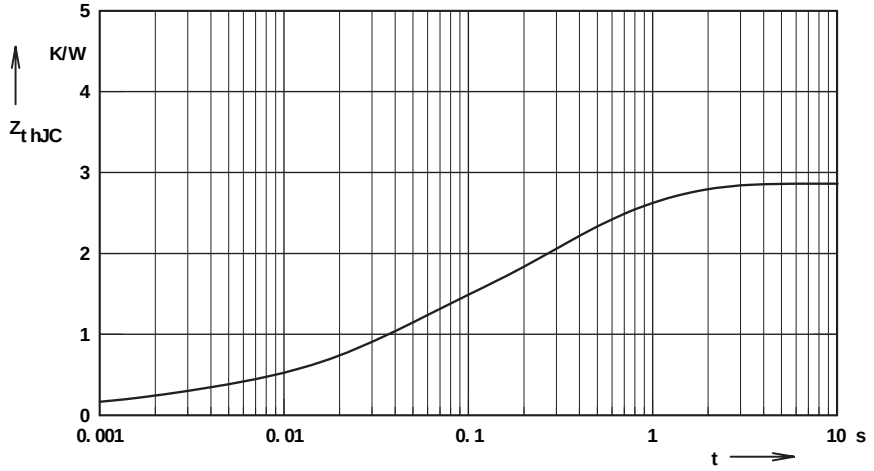


Fig.6 Transient thermal impedance junction to case

**Constants for ZthJC calculation:**

| i | $R_{thi}$ (K/W) | $\tau_i$ (s) |
|---|---|---|
| 1 | 0.302 | 0.002 |
| 2 | 1.252 | 0.032 |
| 3 | 1.582 | 0.227 |
| 4 | 1.164 | 0.82 |




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