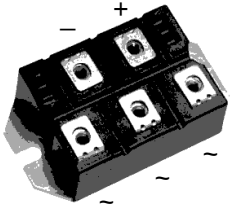
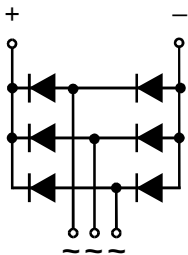


# S3PDB180

## Three Phase Rectifier Modules

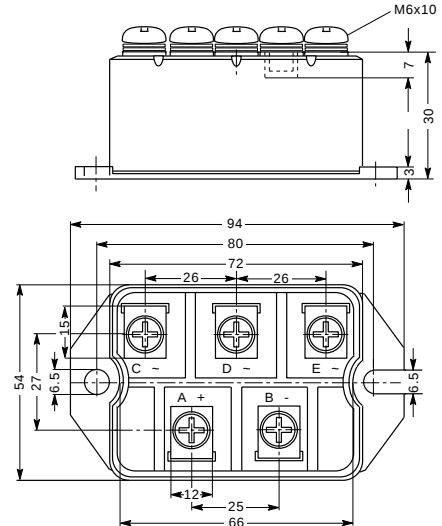


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| Type        | $V_{RSM}$<br>V | $V_{RRM}$<br>V |
|-------------|----------------|----------------|
| S3PDB180N08 | 900            | 800            |
| S3PDB180N12 | 1300           | 1200           |
| S3PDB180N14 | 1500           | 1400           |
| S3PDB180N16 | 1700           | 1600           |
| S3PDB180N18 | 1900           | 1800           |

Dimensions in mm (1mm=0.0394")



| Symbol     | Test Conditions                                           | Maximum Ratings              | Unit        |
|------------|-----------------------------------------------------------|------------------------------|-------------|
| $I_{dav}$  | $T_C=100^{\circ}C$ , module                               | 180                          | A           |
| $I_{dav}$  | $T_A=35^{\circ}C$ ( $R_{thCA}=0.2K/W$ ), module           | 139                          |             |
| $I_{FSM}$  | $T_{VJ}=45^{\circ}C$<br>$V_R=0$<br>$t=10ms$ (50Hz), sine  | 1800                         | A           |
|            | $t=8.3ms$ (60Hz), sine                                    | 1950                         |             |
|            | $T_{VJ}=T_{VJM}$<br>$V_R=0$<br>$t=10ms$ (50Hz), sine      | 1600                         |             |
|            | $t=8.3ms$ (60Hz), sine                                    | 1800                         |             |
| $I^2t$     | $T_{VJ}=45^{\circ}C$<br>$V_R=0$<br>$t=10ms$ (50Hz), sine  | 16200                        | $A^2s$      |
|            | $t=8.3ms$ (60Hz), sine                                    | 16200                        |             |
|            | $T_{VJ}=T_{VJM}$<br>$V_R=0$<br>$t=10ms$ (50Hz), sine      | 12800                        |             |
|            | $t=8.3ms$ (60Hz), sine                                    | 13400                        |             |
| $T_{VJ}$   |                                                           | -40...+150                   | $^{\circ}C$ |
| $T_{VJM}$  |                                                           | 150                          |             |
| $T_{stg}$  |                                                           | -40...+125                   |             |
| $V_{ISOL}$ | 50/60Hz, RMS<br>$I_{ISOL} \leq 1mA$<br>$t=1min$<br>$t=1s$ | 2500<br>3000                 | $V\sim$     |
| $M_d$      | Mounting torque (M6)<br>Terminal connection torque (M6)   | $5 \pm 15\%$<br>$5 \pm 15\%$ | Nm          |
| Weight     | typ.                                                      | 270                          | g           |



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# S3PDB180

## Three Phase Rectifier Modules

| Symbol     | Test Conditions                                                                   | Characteristic Values  | Unit             |
|------------|-----------------------------------------------------------------------------------|------------------------|------------------|
| $I_R$      | $V_R = V_{RRM}; T_{VJ} = 25^{\circ}\text{C}$<br>$V_R = V_{RRM}; T_{VJ} = T_{VJM}$ | $\leq 0.3$<br>$\leq 5$ | mA               |
| $V_F$      | $I_F = 300\text{A}; T_{VJ} = 25^{\circ}\text{C}$                                  | $\leq 1.65$            | V                |
| $V_{TO}$   | For power-loss calculations only                                                  | 0.8                    | V                |
| $r_T$      | $T_{VJ} = T_{VJM}$                                                                | 3                      | $\text{m}\Omega$ |
| $R_{thJC}$ | per diode<br>per module                                                           | 0.65<br>0.108          | K/W              |
| $R_{thJK}$ | per diode<br>per module                                                           | 0.83<br>0.138          | K/W              |
| $d_s$      | Creeping distance on surface                                                      | 10                     | mm               |
| $d_A$      | Creepage distance in air                                                          | 9.4                    | mm               |
| $a$        | Max. allowable acceleration                                                       | 50                     | $\text{m/s}^2$   |

### FEATURES

- \* Package with screw terminals
- \* Isolation voltage 3000 V~
- \* Planar passivated chips
- \* Blocking voltage up to 1800 V
- \* Low forward voltage drop

### APPLICATIONS

- \* Supplies for DC power equipment
- \* Input rectifiers for PWM inverter
- \* Battery DC power supplies
- \* Field supply for DC motors

### ADVANTAGES

- \* Easy to mount with two screws
- \* Space and weight savings
- \* Improved temperature and power cycling