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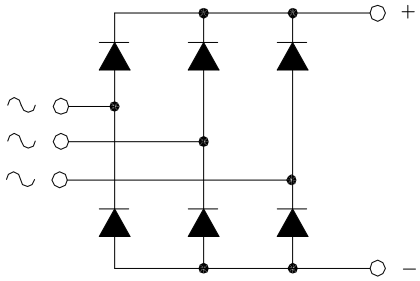
# DBM180

## POWER RECTIFIER BRIDGE

**Output Current** **180 A**




| $V_{RRM}$ | $V_{RSM}$ | P/N |
|---|---|---|
| 400 | 500 | DBM180.04 |
| 600 | 700 | DBM180.06 |
| 800 | 900 | DBM180.08 |
| 1200 | 1300 | DBM180.12 |
| 1600 | 1700 | DBM180.16 |

### Features

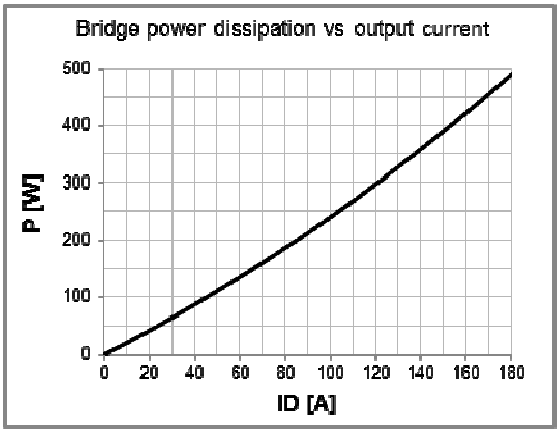
Low forward voltage diodes for high surge capability
Low thermal impedance packaging
Electrically insulated case

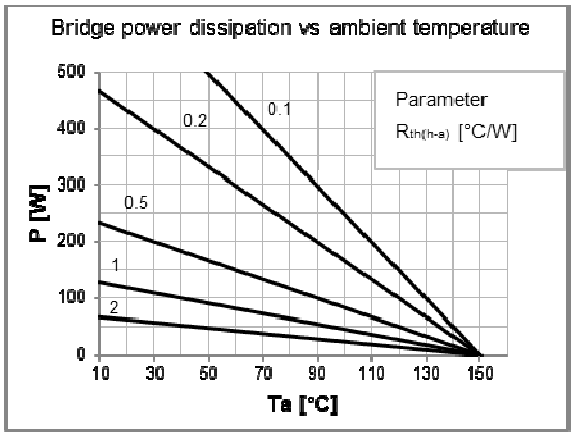
### Applications

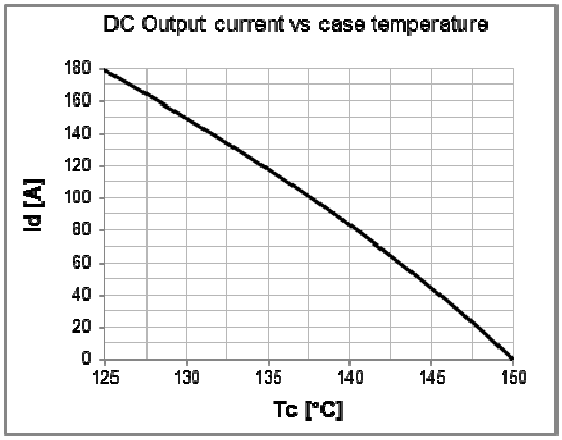
Input rectifier for variable frequency drives
Battery charger rectifiers
Three phase rectifier for power supplies
Rectifiers for DC motor fields supplies

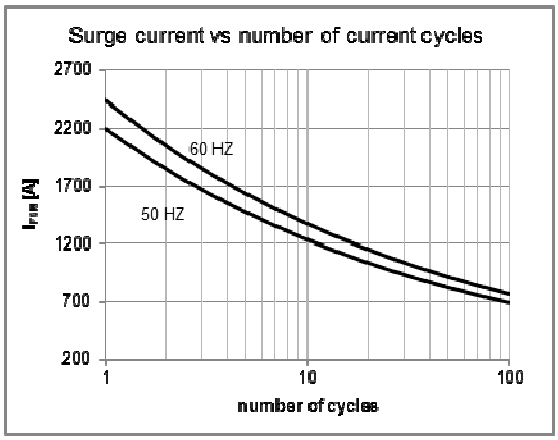
| Diodes characteristics | | Conditions | Tj [°C] | Value |
|---|---|---|---|---|
| $I_{RRM}$ | Max repetitive peak reverse current | $V = V_{RRM}$ | 150 | 7 mA |
| $V_{F(TO)}$ | Threshold voltage | | 150 | 1,0 V |
| $r_F$ | Forward slope resistance | | 150 | 2,0 mΩ |
| $V_{FM}$ | Peak forward voltage, max | $I_F$ = 180 A | 25 | 1,35 V |
| $I_{FSM}$ | Surge forward current | Half sine wave, 10 ms | 150 | 2200 A |
| $I^2t$ | Max $I^2t$ for fusing | | 150 | 24200 $A^2s$ |
| $T_{jmax}$ | Operating junction temperature | | | -40 / 150 °C |
| $R_{th(j-c)}$ | Thermal resistance (junction to case) | DC operation | | 0,28 °C/W |
| $R_{th(j-c)}$ | Thermal resistance (junction to case) | Rectangular wave 120° conduction | | 0,31 °C/W |

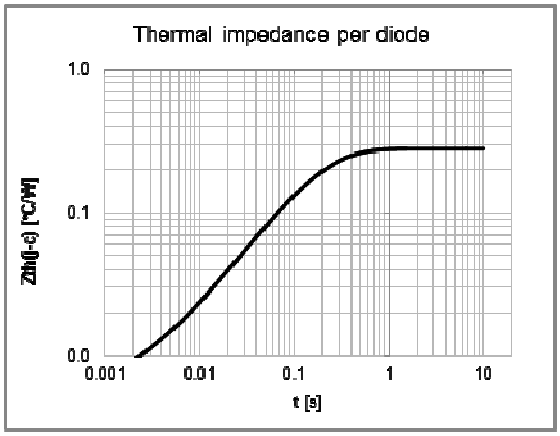
| Module characteristics | | Conditions | Value |
|---|---|---|---|
| $I_D$ | DC output current | Tc = 125 °C | 180 A |
| $I_D$ | DC output current | Ta = 40 °C ; freely suspended | 16 A |
| $V_{INS}$ | RMS Insulating voltage | 50 / 60 Hz t = 1 s ( i < 1 mA) | 3600 V |
| $V_{INS}$ | RMS Insulating voltage | 50 / 60 Hz t = 60 s ( i < 1 mA) | 3000 V |
| $R_{th(j-c)}$ | Thermal resistance (junction to case) | DC operation | 0,047 °C/W |
| $R_{th(j-c)}$ | Thermal resistance (junction to case) | Rect. wave 120° conduction | 0,052 °C/W |
| $R_{th(c-h)}$ | Thermal resistance (case to heatsink) | Mounting surface flat, smooth and greased | 0,050 °C/W |
| $R_{th(j-a)}$ | Thermal resistance (junction to ambient) | Freely suspended or mounted on an insulator | 8,0 °C/W |
| $R_{th(j-a)}$ | Thermal resistance (junction to ambient) | Mounted on a painted metal sheet 250x250x1 mm | 2,5 °C/W |
| $T_{stg}$ | Max storage temperature | | 150 °C |
| $M_1$ | Mounting torque, ± 15 % | | 4,5 N·m |
| | | | 40 lb·inch |
| $M_2$ | Terminal connection torque, ± 15 % | | 3,0 N·m |
| | | | 26 lb·inch |


Bridge power dissipation vs output current
P [W]
500
400
300
200
100
0
0 20 40 60 80 100 120 140 160 180
ID [A]


Bridge power dissipation vs ambient temperature
Parameter
Rth(h-a) [°C/W]
0.1
0.2
0.5
1
2
P [W]
500
400
300
200
100
0
10 30 50 70 90 110 130 150
Ta [°C]


DC Output current vs case temperature
Id [A]
180
160
140
120
100
80
60
40
20
0
125 130 135 140 145 150
Tc [°C]


Surge current vs number of current cycles
60 HZ
50 HZ
2700
2200
1700
1200
700
200
1 10 100
number of cycles


Thermal impedance per diode
Zth(j-c) [°C/W]
1.0
0.1
0.0
0.001 0.01 0.1 1 10
t [s]

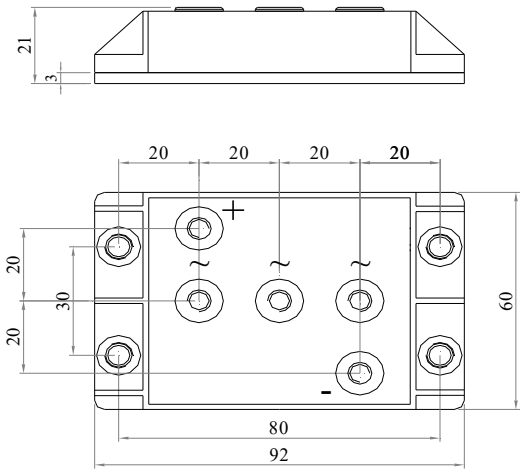



***Fig.1***

*DBM180.04-SS6-FIX5-HP-P80-TA*
*Code:DBM70001800002*
*DBM180.06-SS6-FIX5-HP-P80-TA*
*Code:DBM70001800008*
*DBM180.08-SS6-FIX5-HP-P80-TA*
*Code:DBM70001800014*
*DBM180.12-SS6-FIX5-HP-P80-TA*
*Code:DBM70001800020*
*DBM180.16-SS6-FIX5-HP-P80-TA*
*Code:DBM70001800026*

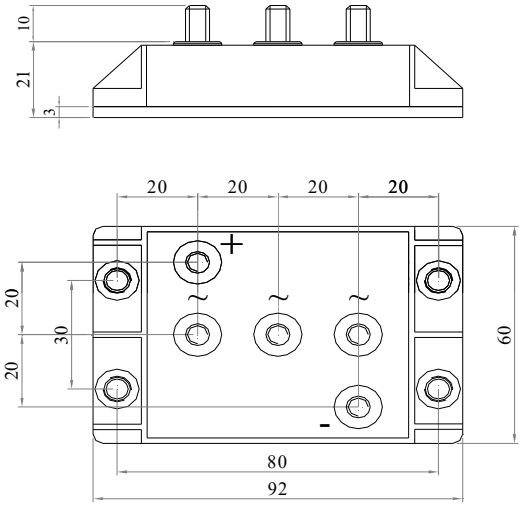



***Fig.2***

*DBM180.04-MM6x10-FIX5-HP-P80-TA*
*Code:DBM70001800000*
*DBM180.06-MM6x10-FIX5-HP-P80-TA*
*Code:DBM70001800006*
*DBM180.08-MM6x10-FIX5-HP-P80-TA*
*Code:DBM70001800012*
*DBM180.12-MM6x10-FIX5-HP-P80-TA*
*Code:DBM70001800018*
*DBM180.16-MM6x10-FIX5-HP-P80-TA*
*Code:DBM70001800024*

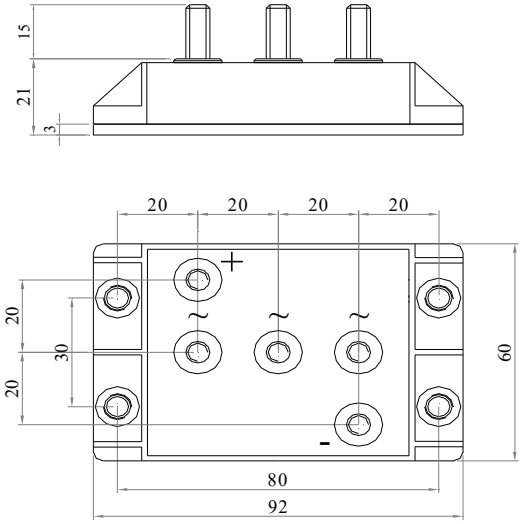



***Fig.3***

*DBM180.04-MM6x15-FIX5-HP-P80-TA*
*Code:DBM70001800001*
*DBM180.06-MM6x15-FIX5-HP-P80-TA*
*Code:DBM70001800007*
*DBM180.08-MM6x15-FIX5-HP-P80-TA*
*Code:DBM70001800013*
*DBM180.12-MM6x15-FIX5-HP-P80-TA*
*Code:DBM70001800019*
*DBM180.16-MM6x15-FIX5-HP-P80-TA*
*Code:DBM70001800025*

***Voltage:04=400V 06=600V 08=800V 12=1200V 16=1600V***

***Power fix:***
*SS=Screw (M6)*
*MM=Bolt (M6)*

***Mounting fix:***
*FIX= Ø5,5*

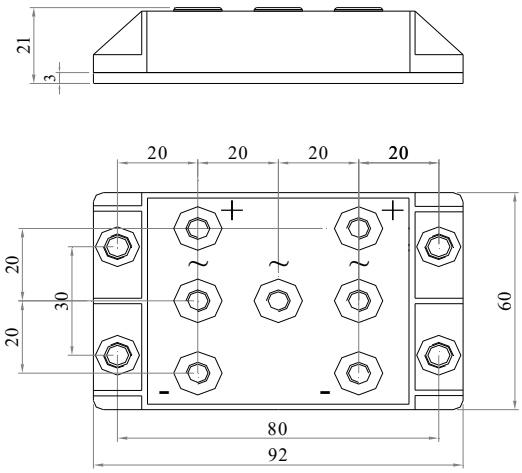



***Fig.4*** *DBM180.04-SS6-FIX5-HP-P80-TD*
*Code:DBM70001800005*
*DBM180.06-SS6-FIX5-HP-P80-TD*
*Code:DBM70001800011*
*DBM180.08-SS6-FIX5-HP-P80-TD*
*Code:DBM70001800017*
*DBM180.12-SS6-FIX5-HP-P80-TD*
*Code:DBM70001800023*
*DBM180.16-SS6-FIX5-HP-P80-TD*
*Code:DBM70001800029*

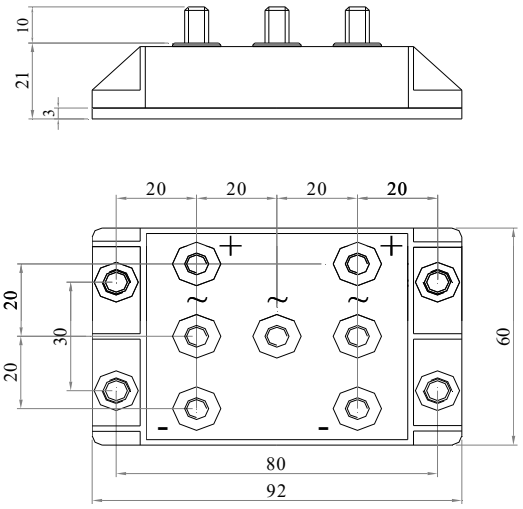



***Fig.5*** *DBM180.04-MM6x10-FIX5-HP-P80-TD*
*Code:DBM70001800003*
*DBM180.06-MM6x10-FIX5-HP-P80-TD*
*Code:DBM70001800009*
*DBM180.08-MM6x10-FIX5-HP-P80-TD*
*Code:DBM70001800015*
*DBM180.12-MM6x10-FIX5-HP-P80-TD*
*Code:DBM70001800021*
*DBM180.16-MM6x10-FIX5-HP-P80-TD*
*Code:DBM70001800027*

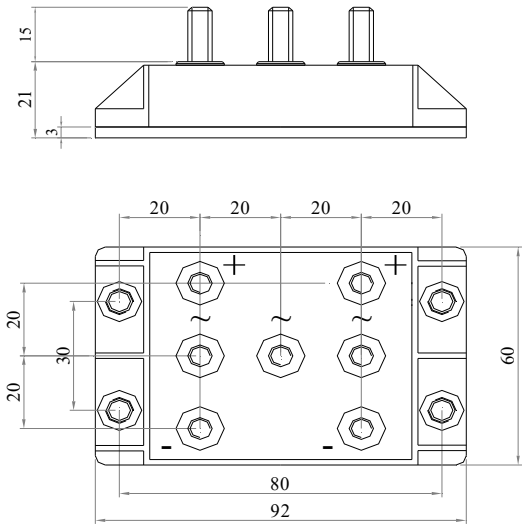



***Fig.6*** *DBM180.04-MM6x15-FIX5-HP-P80-TD*
*Code:DBM70001800004*
*DBM180.06-MM6x15-FIX5-HP-P80-TD*
*Code:DBM70001800010*
*DBM180.08-MM6x15-FIX5-HP-P80-TD*
*Code:DBM70001800016*
*DBM180.12-MM6x15-FIX5-HP-P80-TD*
*Code:DBM70001800022*
*DBM180.16-MM6x15-FIX5-HP-P80-TD*
*Code:DBM70001800028*

***Voltage:04=400V 06=600V 08=800V 12=1200V 16=1600V***

***Power fix:***
*SS=Screw (M6)*
*MM=Bolt (M6)*

***Mounting fix:***
*FIX= Ø5,5*





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