SCOMES

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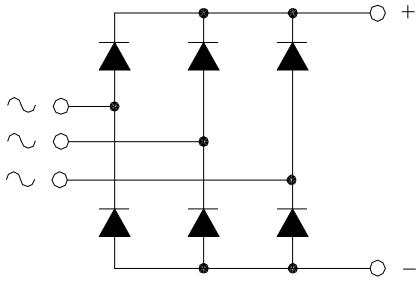
MTS180

POWER RECTIFIER BRIDGE

Output Current **180 A**



V_{RRM}	V_{RSM}	P/N
400	500	MTS180.04
600	700	MTS180.06
800	900	MTS180.08
1200	1300	MTS180.12
1600	1700	MTS180.16

Features

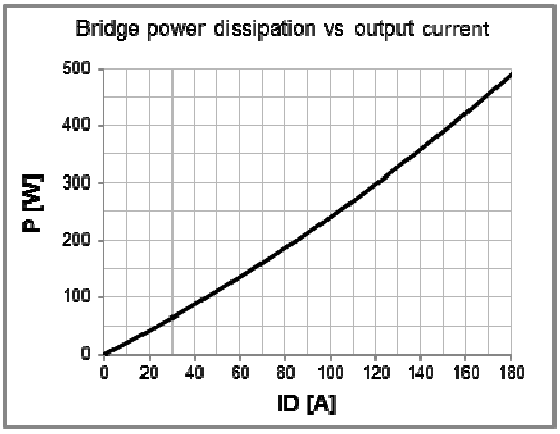
Low forward voltage diodes for high surge capability
Low thermal impedance packaging
Electrically insulated case

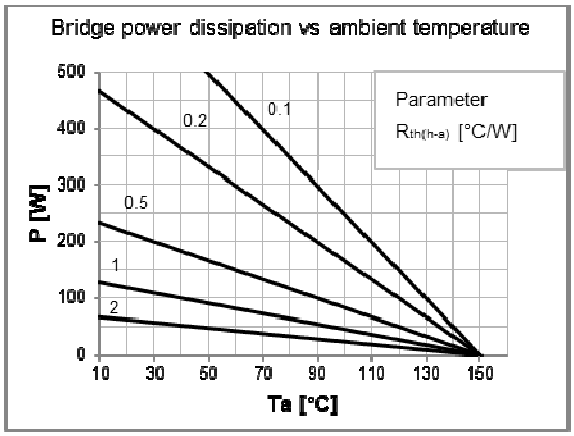
Applications

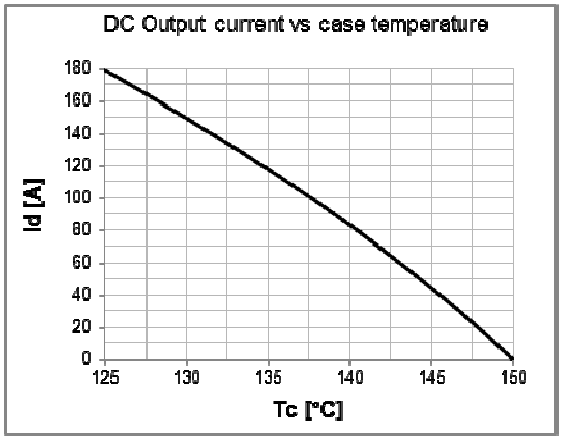
Input rectifier for variable frequency drives
Battery charger rectifiers
Three phase rectifier for power supplies
Rectifiers for DC motor fields supplies

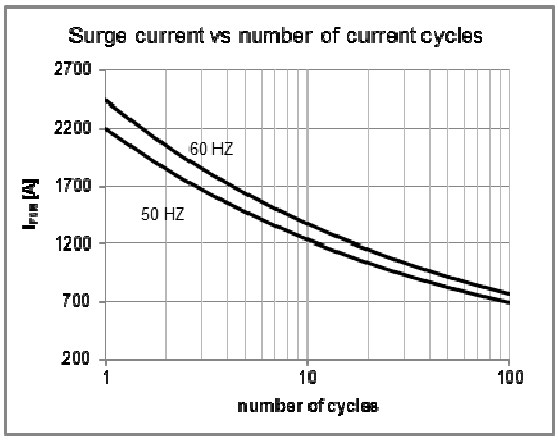
Diodes characteristics		Conditions	Tj [°C]	Value
I_{RRM}	Max repetitive peak reverse current	$V = V_{RRM}$	150	7 mA
$V_{F(TO)}$	Threshold voltage		150	1,0 V
r_F	Forward slope resistance		150	2,0 mΩ
V_{FM}	Peak forward voltage, max	I_F = 180 A	25	1,35 V
I_{FSM}	Surge forward current	Half sine wave, 10 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

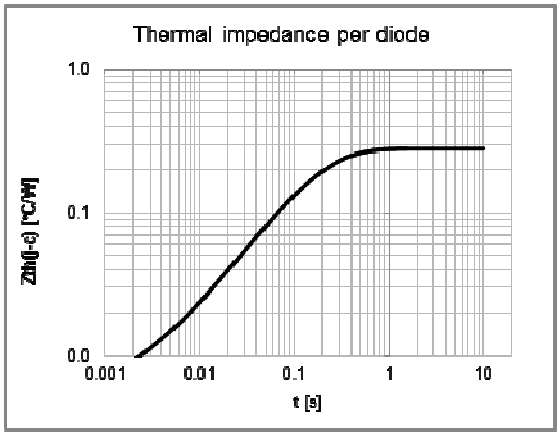
Module characteristics		Conditions	Value
I_D	DC output current	Tc = 125 °C	180 A
I_D	DC output current	Ta = 40 °C ; freely suspended	16 A
V_{INS}	RMS Insulating voltage	50 / 60 Hz t = 1 s (i < 1 mA)	3600 V
V_{INS}	RMS Insulating voltage	50 / 60 Hz t = 60 s (i < 1 mA)	3000 V
$R_{th(j-c)}$	Thermal resistance (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]

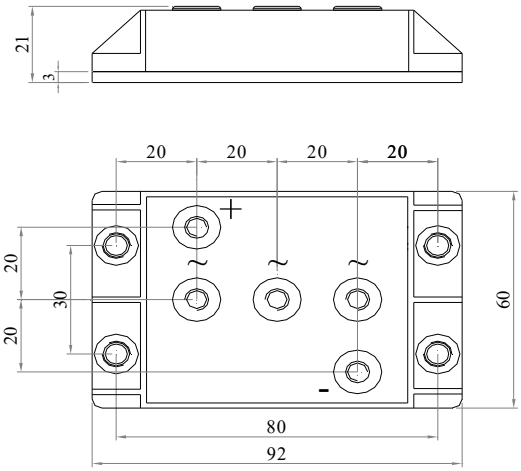


Fig.1

MTS180.04-SS6-FIX5-HP-P80-TA
Code:970001800002
MTS180.06-SS6-FIX5-HP-P80-TA
Code:970001800008
MTS180.08-SS6-FIX5-HP-P80-TA
Code:970001800014
MTS180.12-SS6-FIX5-HP-P80-TA
Code:970001800020
MTS180.16-SS6-FIX5-HP-P80-TA
Code:970001800026

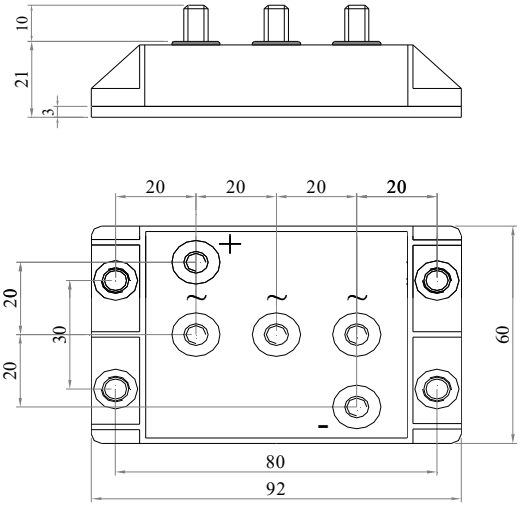


Fig.2

MTS180.04-MM6x10-FIX5-HP-P80-TA
Code:970001800000
MTS180.06-MM6x10-FIX5-HP-P80-TA
Code:970001800006
MTS180.08-MM6x10-FIX5-HP-P80-TA
Code:970001800012
MTS180.12-MM6x10-FIX5-HP-P80-TA
Code:970001800018
MTS180.16-MM6x10-FIX5-HP-P80-TA
Code:970001800024

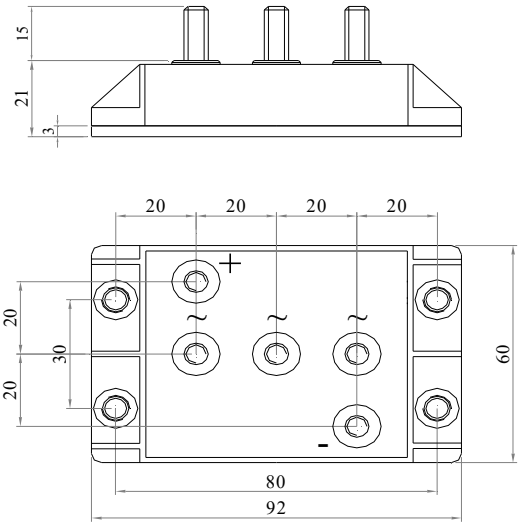


Fig.3

MTS180.04-MM6x15-FIX5-HP-P80-TA
Code:970001800001
MTS180.06-MM6x15-FIX5-HP-P80-TA
Code:970001800007
MTS180.08-MM6x15-FIX5-HP-P80-TA
Code:970001800013
MTS180.12-MM6x15-FIX5-HP-P80-TA
Code:970001800019
MTS180.16-MM6x15-FIX5-HP-P80-TA
Code:970001800025

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

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

Mounting fix:
FIX= Ø5,5

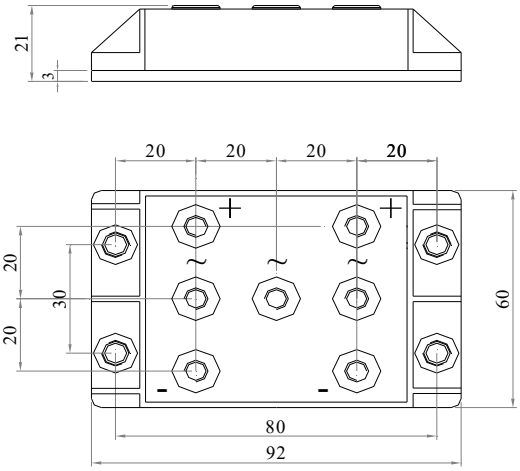


Fig.4

MTS180.04-SS6-FIX5-HP-P80-TD
Code:970001800005
MTS180.06-SS6-FIX5-HP-P80-TD
Code:970001800011
MTS180.08-SS6-FIX5-HP-P80-TD
Code:970001800017
MTS180.12-SS6-FIX5-HP-P80-TD
Code:970001800023
MTS180.16-SS6-FIX5-HP-P80-TD
Code:970001800029

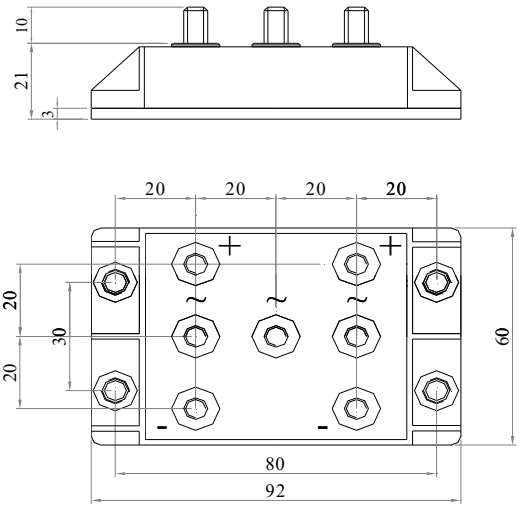


Fig.5

MTS180.04-MM6x10-FIX5-HP-P80-TD
Code:970001800003
MTS180.06-MM6x10-FIX5-HP-P80-TD
Code:970001800009
MTS180.08-MM6x10-FIX5-HP-P80-TD
Code:970001800015
MTS180.12-MM6x10-FIX5-HP-P80-TD
Code:970001800021
MTS180.16-MM6x10-FIX5-HP-P80-TD
Code:970001800027

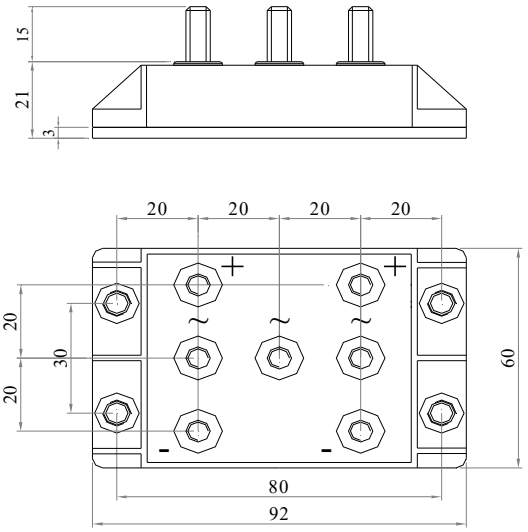


Fig.6

MTS180.04-MM6x15-FIX5-HP-P80-TD
Code:970001800004
MTS180.06-MM6x15-FIX5-HP-P80-TD
Code:970001800010
MTS180.08-MM6x15-FIX5-HP-P80-TD
Code:970001800016
MTS180.12-MM6x15-FIX5-HP-P80-TD
Code:970001800022
MTS180.16-MM6x15-FIX5-HP-P80-TD
Code:970001800028

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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