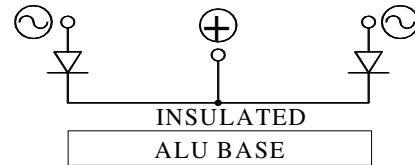


## MCF500.04IS

### INSULATED FAST RECOVERY DIODE MODULE

**Output Current**            500 A

**Blocking Voltage**        400 V



$V_{RRM}$ [V]	$V_{RSM}$ [V]	$V_{OUT}$ [V]	P/N
400	500	125	MCF500.04IS

#### Features

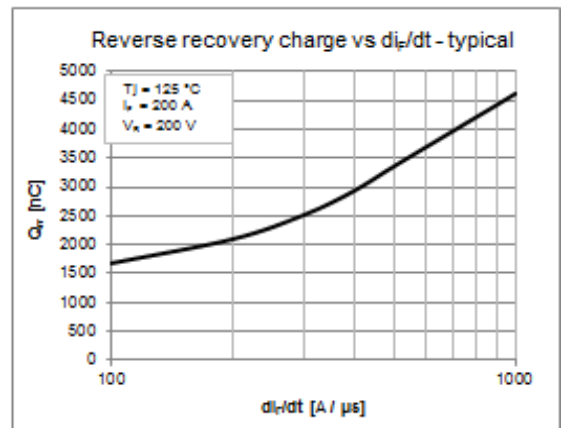
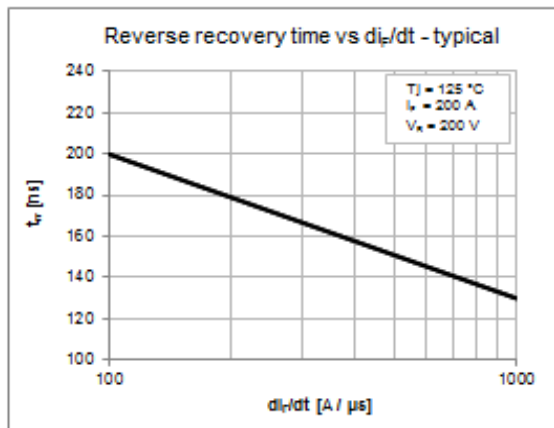
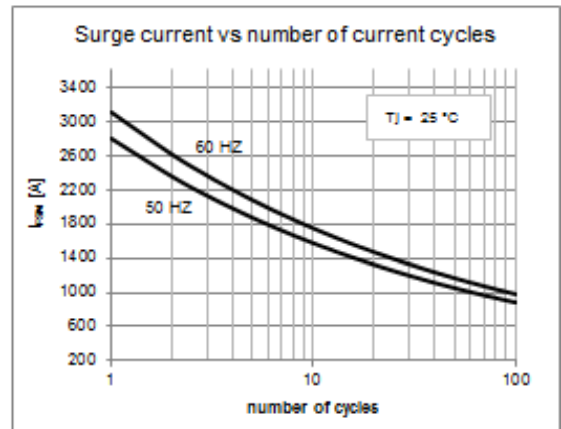
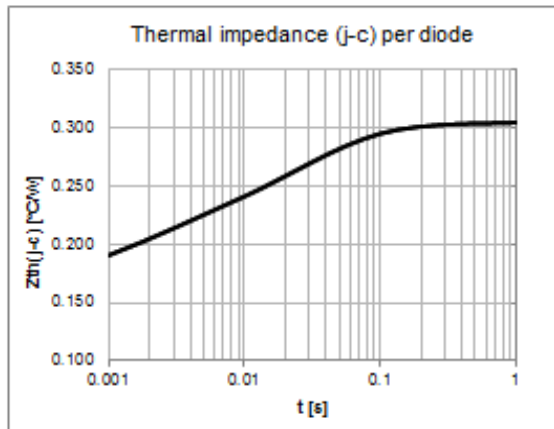
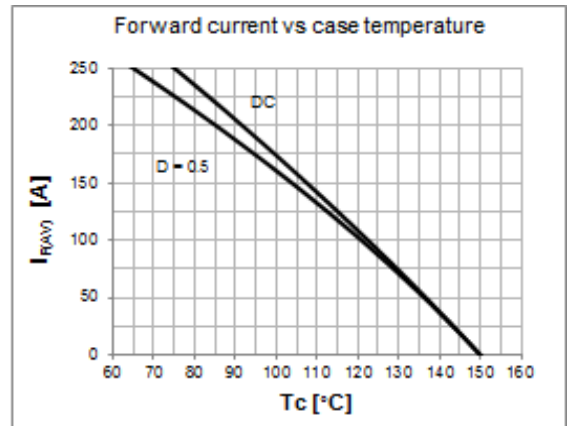
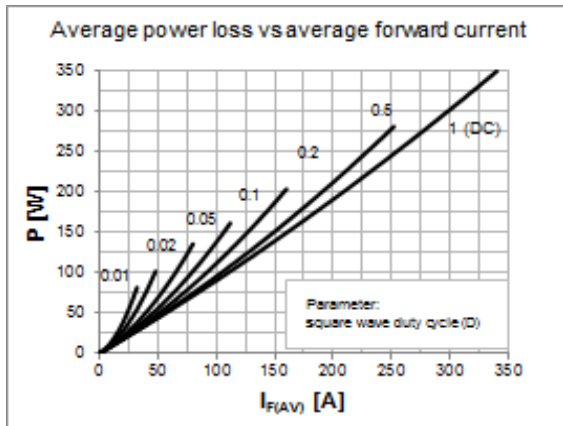
- Short recovery time
- Low switching losses
- Soft recovery behavior
- Electrically insulated case

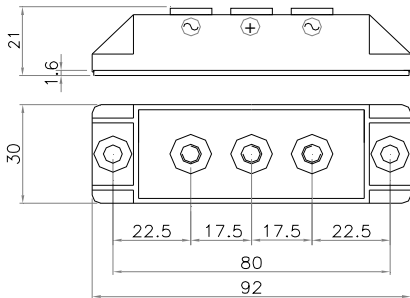
#### Applications

- Antiparallel diode for high frequency switching devices
- Free-wheeling diode in converters or motor controllers
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Diodes characteristics		Conditions	$T_j$ [°C]	Value
$I_{F(AV)}$	Average forward current	$T_c = 65\text{ °C}$		250 A
$I_{FRM}$	Repetitive forward current, max	Square wave, 20 kHz		500 A
$I_{RRM}$	Max repetitive peak reverse current	$V = V_{RRM}$	150	4 mA
$V_{F(TO)}$	Threshold voltage		150	0,85 V
$r_F$	Forward slope resistance		150	0,53 mΩ
$V_{FM}$	Peak forward voltage, max	$I_F = 300\text{ A}$	150	1,18 V
$I_{FSM}$	Surge forward current	Half sine wave, 10 ms	25	2800 A
$I^2t$	Max $I^2t$ for fusing		25	39200 A <sup>2</sup> s
$C_T$	Junction capacitance, typ	$V = V_{RRM}$	25	360 pF
$Q_{rr}$	Reverse recovery charge, typ	$I_F = 200\text{ A}$	125	2100 nC
$I_{rr}$	Reverse recovery current, typ	$V_R = 200\text{ V}$		22 A
$t_{rr}$	Reverse recovery time, typ	$di_F / dt = 200\text{ A} / \mu\text{s}$		180 ns
$T_{jmax}$	Operating junction temperature			-40 / 150 °C
$R_{th(j-c)}$	Thermal resistance (junction to case)			0,30 °C/W

Module characteristics		Conditions	Value
$I_{OUT}$	Output current (center tap connection)	$T_c = 65\text{ °C}$	500 A
$V_{INS}$	RMS Insulating voltage	50 / 60 Hz $t = 1\text{ s}$ ( $i < 1\text{ mA}$ )	3600 V
$V_{INS}$	RMS Insulating voltage	50 / 60 Hz $t = 60\text{ s}$ ( $i < 1\text{ mA}$ )	3000 V
$R_{th(c-h)}$	Thermal resistance (case to heatsink)	Mounting surface flat, smooth and greased	0,100 °C/W
$T_{stg}$	Max storage temperature		150 °C
$W$	Weight		117 g
$M_1$	Mounting torque, ± 15 %		5,5 N·m 48 lb·inch
$M_2$	Terminal connection torque, ± 15 %		4,0 N·m 35 lb·inch



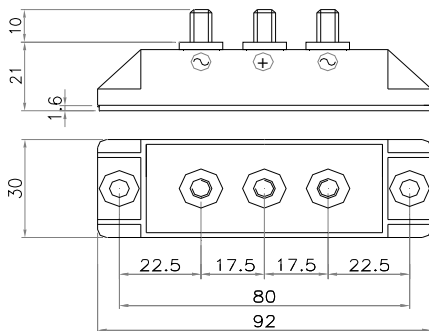


**Fig.1** MCF500.04IS-SS6-FIX5-HP-P80-TA

Code:950005000019

MCF500.04IS-SS5-FIX5-HP-P80-TA

Code:950005000018

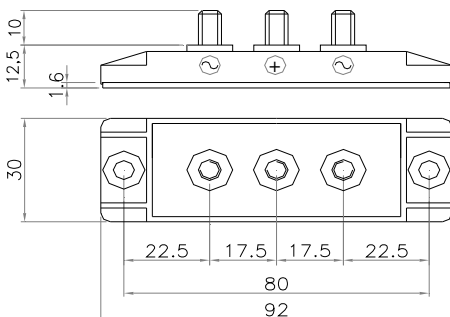


**Fig.2** MCF500.04IS-MM6x10-FIX5-HP-P80-TA

Code:950005000015

MCF500.04IS-MM5x10-FIX5-HP-P80-TA

Code:950005000011



**Fig.3** MCF500.04IS-MM6x10-FIX5-LP-P80-TA

Code:950005000014

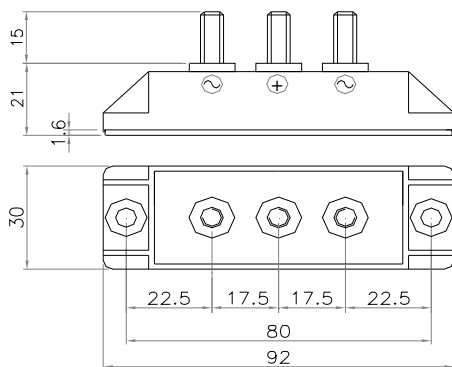
MCF500.04IS-MM5x10-FIX5-LP-P80-TA

Code:950005000010

**Power fix:**  
 SS=Screw (M6 or M5)  
 MM=Bolt (M6 or M5)

**Mounting fix:**  
 FIX=  $\varnothing$ 5,5

**Profile:**  
 HP=High Profile LP=Low Profile

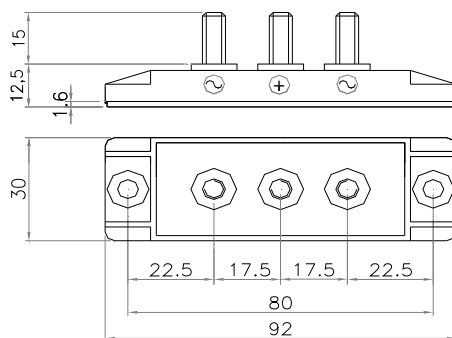


**Fig.4** MCF500.04IS-MM6x15-FIX5-HP-P80-TA

Code:950005000017

MCF500.04IS-MM5x15-FIX5-HP-P80-TA

Code:950005000013



**Fig.5** MCF500.04IS-MM6x15-FIX5-LP-P80-TA

Code:950005000016

MCF500.04IS-MM5x15-FIX5-LP-P80-TA

Code:950005000012

**Power fix:**

SS=Screw (M6 or M5)

MM=Bolt (M6 or M5)

**Mounting fix:**

FIX=  $\varnothing$ 5,5

**Profile:**

HP=High Profile LP=Low Profile