

STARPOWER

SEMICONDUCTOR™

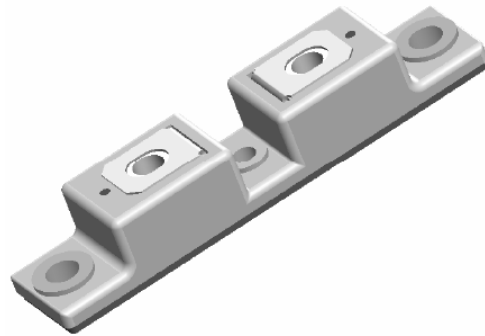
FRED

FD200CCH40D1S

Preliminary**Molding Type Module****400V/200A 2 in one-package**

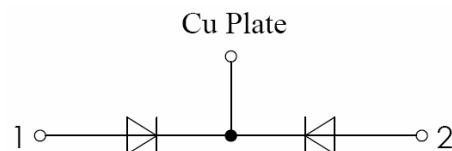
General Description

STARPOWER IGBT Power Module provides low forward voltage as well as low reverse recovery loss. They are designed for the applications such as welders.



Features

- Ultrafast reverse recovery time
- Soft reverse recovery characteristics
- Low reverse recovery loss
- Low forward voltage
- High surge current capacity
- Low inductance



Equivalent Circuit Schematic

Typical Applications

- Plating power supply
- Electric welders
- DC choppers
- Power factor correction circuit

Absolute Maximum Ratings $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Description	FD200CCH40D1S	Units
V_{RRM}	Repetitive Peak Reverse Voltage	400	V
V_{RSM}	Non-repetitive Peak Reverse Voltage	400	V
I_F	Continuous Forward Current @ $T_C=80^{\circ}\text{C}$	200	A
I_{FRM}	Repetitive Peak Forward Current	400	A
I_{FSM}	Single Pulse Forward Current	900	A
I^2t -value, Diode	$V_R=0V, t=10ms, T_J=125^{\circ}\text{C}$	11000	A^2s
P_D	Maximum Power Dissipation @ $T_J=150^{\circ}\text{C}$	962	W
T_J	Maximum Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-40 to +125	$^{\circ}\text{C}$
V_{ISO}	Isolation Voltage RMS, $f=50\text{Hz}, t=1\text{min}$	2500	V
Mounting Torque	Power Terminal Screw:M6	3.4 to 4.7	N.m
	Mounting Screw:M4	1.4 to 2.1	N.m
	Mounting Screw:M6	3.4 to 4.7	

Notes:

(1) Repetitive rating: Pulse width limited by max. junction temperature

Characteristics Values

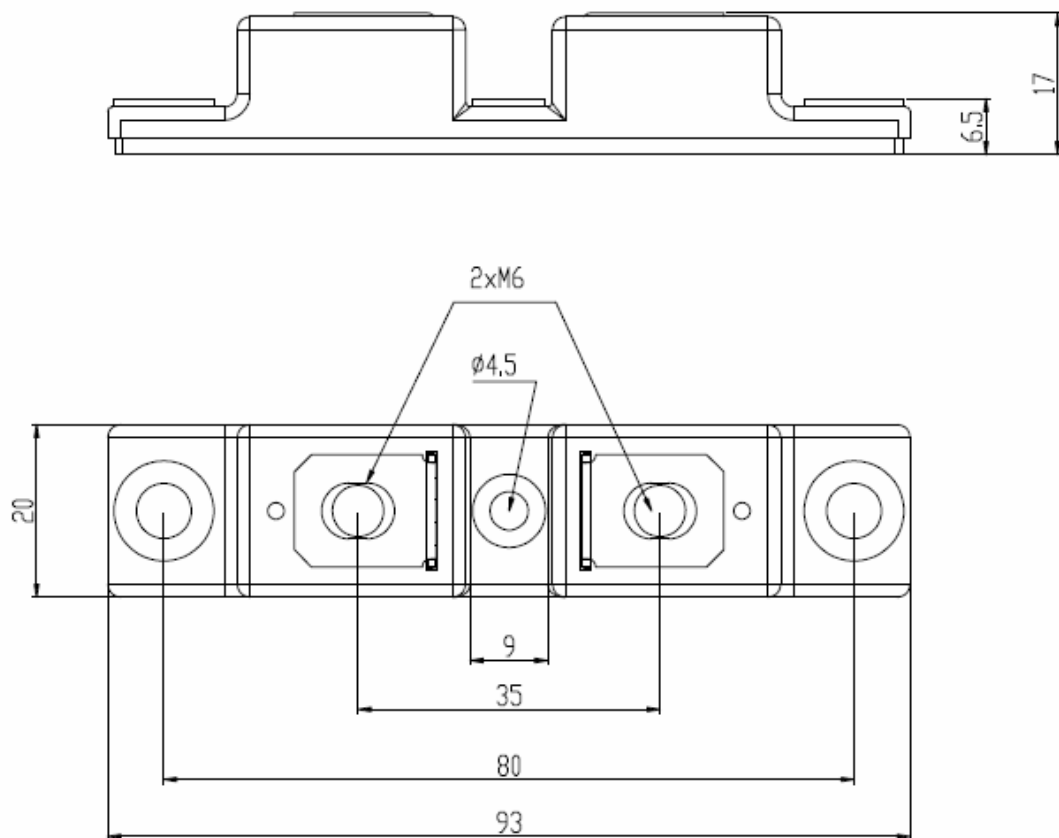
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Units
V _F	Diode Forward Voltage	I _F =200A, V _{GE} =0V	T _J =25°C		1.4	1.6	V
			T _J =125°C		1.4		
Q _{rr}	Recovered Charge	I _F =140A, V _R =200V, di/dt=-200A/μs,	T _J =25°C		290		nC
			T _J =125°C		2300		
I _{RM}	Peak Reverse Recovery Current		T _J =25°C		7.5		A
			T _J =125°C		16		
t _{rr}	Reverse Recovery Time		T _J =25°C		77		ns
			T _J =125°C		290		
L _{CE}	Stray Inductance				6.0		nH

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-Case(DIODE Part, per 1/2 Module)		0.13	K/W
$R_{\theta CS}$	Case-to-Sink(Conductive grease applied)	0.06		K/W
Weight	Weight of Module	70		g

Package Dimension

Dimensions in Millimeters



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