STARPOWER

SEMICONDUCTOR **FRED**

FD300CCH40D1S

Molding Type Module

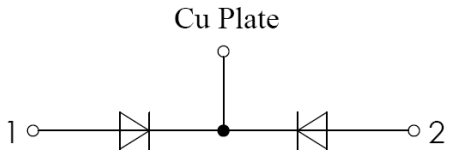
400V/300A in one-package

General Description

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

Features

- Fast soft diode
- Low forward voltage drop
- Small temperature coefficient
- Low reverse recovery losses
- High ruggedness
- Low inductance



Equivalent Circuit Schematic

Typical Applications

- SMPS
- PFC
- Electric welders
- DC choppers

Absolute Maximum Ratings T_C=25℃ unless otherwise noted

Symbol	Description	FD300CCH40D1S	Units
V_{RRM}	Repetitive Peak Reverse Voltage	400	V
V_{RSM}	Non-repetitive Peak Reverse Voltage	400	V
I_{FAV}	Average Forward Current T_C=100℃,Diode T_C=100℃,Module	150 300	A
I_{FSM}	Surge Forward Current V_R=0V,t_p=10ms,T_j=25℃ V_R=0V,t_p=8.3ms,T_j=25℃	3000 3300	A
I^2t	I^2t-value V_R=0V,t_p=10ms,T_j=25℃ V_R=0V,t_p=8.3ms,T_j=25℃	45000 45375	A^2s
P_D	Maximum Power Dissipation @ T_j=175℃	893	W
T_j	Junction Temperature	-40 to +175	℃
T_{STG}	Storage Temperature Range	-40 to +125	℃
M	Terminal Connection Torque, Screw M6 Mounting Torque, Screw M4 Mounting Torque, Screw M6	3.0 to 4.7 1.0 to 1.5 3.0 to 4.7	N.m

Electrical Characteristics of Diode T_C=25℃ unless otherwise noted

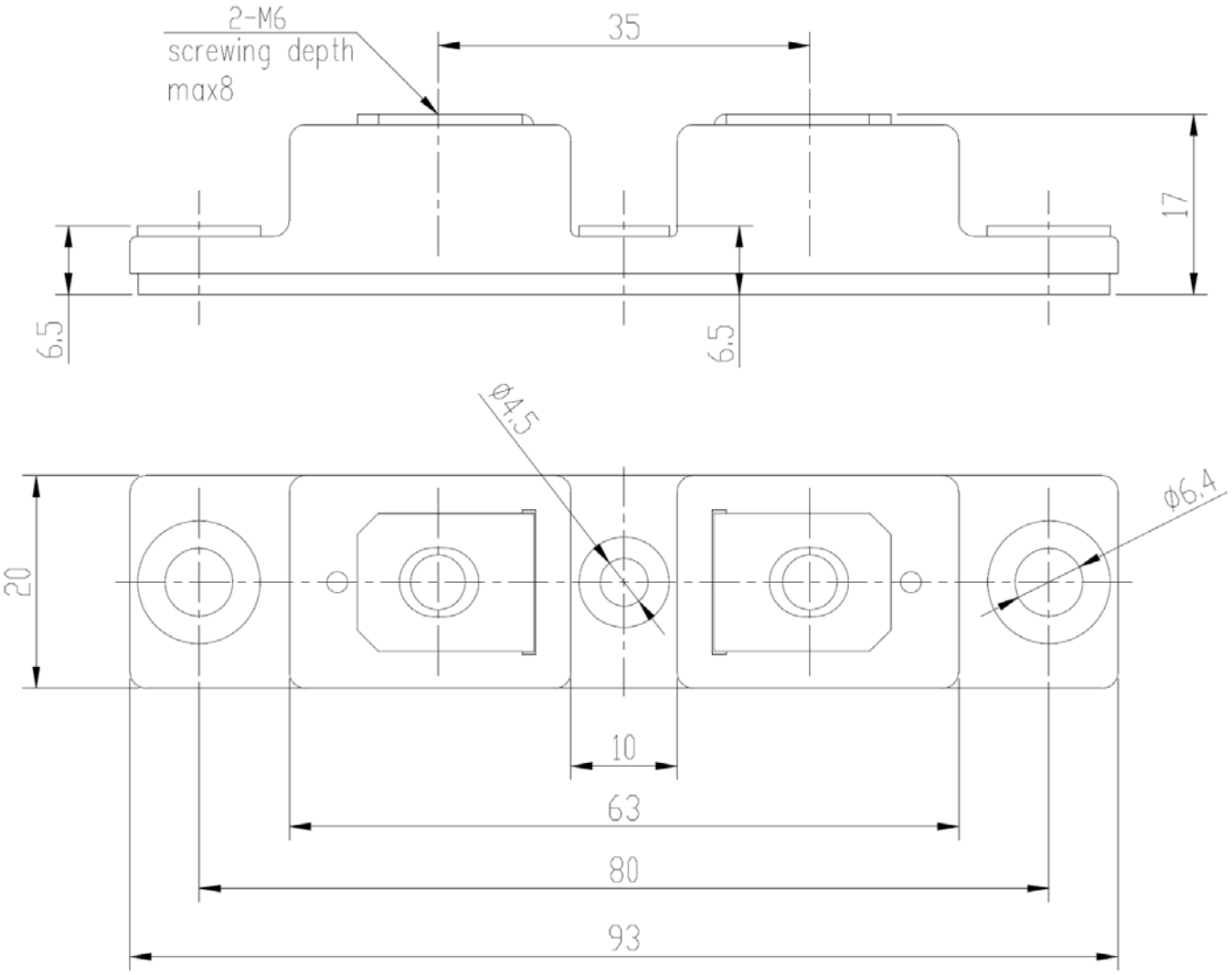
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Units
V_F	Diode Forward Voltage	I_F=150A	T_j=25℃		1.05	1.25	V
			T_j=125℃		0.95	1.15	
I_R	Diode Reverse Current	V_R=V_{RRM}	T_j=25℃			0.5	mA
			T_j=125℃			1.0	
t_{rr}	Reverse Recovery Time	I_F=150A V_R=200V di/dt=-200A/μs	T_j=25℃		93		ns
			T_j=125℃		172		
I_{RM}	Peak Reverse Recovery Current		T_j=25℃		11.0		A
			T_j=125℃		20.0		
Q_r	Reverse Recovery Charge		T_j=25℃		490		nC
			T_j=125℃		1740		

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-Case		0.168	K/W
$R_{\theta CS}$	Case-to-Sink (Conductive grease applied)	0.06		K/W
Weight	Weight of Module	70		g

Package Dimensions

Dimensions in Millimeters



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