STARPOWER

SEMICONDUCTOR **FRED**

FD300HFH60C1S

Molding Type Module

600V/300A 2 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
- Isolated copper baseplate using DBC technology

Typical Applications

- SMPS
- PFC
- Electric welders
- DC choppers

Absolute Maximum Ratings T_C=25℃ unless otherwise noted

Symbol	Description	FD300HFH60C1S	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	600	V
I_F	Continuous Forward Current	300	A
I_{FRM}	Repetitive Peak Forward Current	600	A
P_D	Maximum Power Dissipation @ T_j=150℃	598	W
T_{jmax}	Maximum Junction Temperature	150	℃
T_{jop}	Operating Junction Temperature	-40 to +125	℃
T_{STG}	Storage Temperature Range	-40 to +125	℃
V_{ISO}	Isolation Voltage RMS,f=50Hz,t=1min	4000	V
M	Terminal Connection Torque, Screw M5 Mounting Torque, Screw M6	2.5 to 5.0 3.0 to 5.0	N.m
G	Weight of Module	150	g

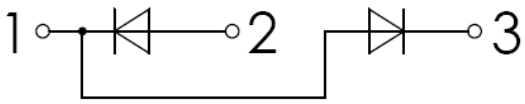
Electrical Characteristics of Diode T_C=25℃ unless otherwise noted

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
V_F	Diode Forward Voltage	I_F=300A	T_j=25℃		1.40	1.80	V
			T_j=125℃		1.45		
I_R	Diode Reverse Current	V_R=V_{RRM}	T_j=25℃			1.0	mA
Q_r	Recovered Charge	I_F=300A V_R=300V di/dt=-5500A/μs	T_j=25℃		16.4		μC
			T_j=125℃		22.0		
I_{RM}	Peak Reverse Recovery Current		T_j=25℃		205		A
			T_j=125℃		265		
E_{rec}	Reverse Recovery Energy		T_j=25℃		2.66		mJ
			T_j=125℃		5.12		
L_{CE}	Stray Inductance					30	nH
$R_{CC'+EE'}$	Module Lead Resistance, Terminal To Chip	T_C=25℃			0.75		mΩ

Thermal Characteristics

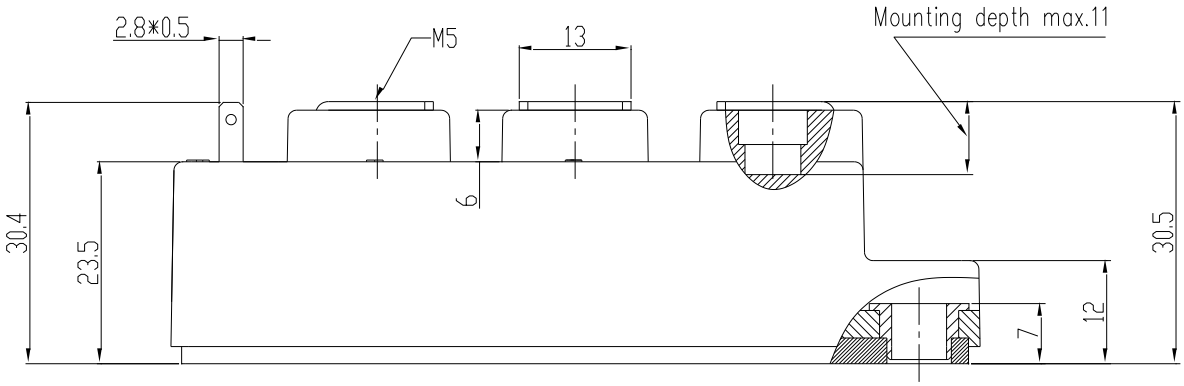
Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Junction-to-Case (per Diode)		0.209	K/W
$R_{\theta CS}$	Case-to-Sink (Conductive grease applied)	0.05		K/W

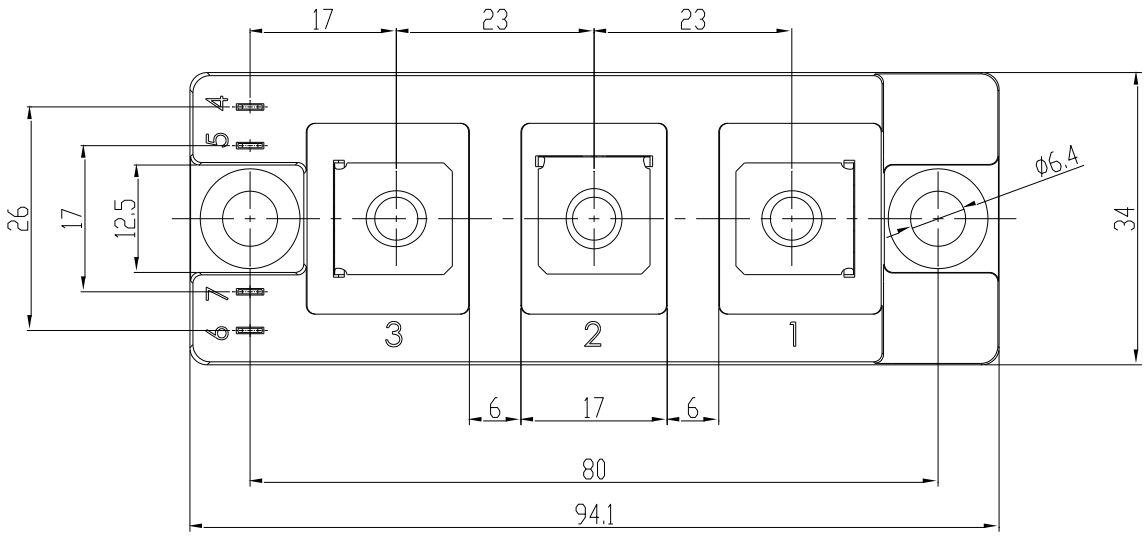
Equivalent Circuit Schematic



Package Dimensions

Dimensions in Millimeters





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