STARPOWER

SEMICONDUCTOR

Rectifier Diode

RD300CCS180C2S

Molding Type Module

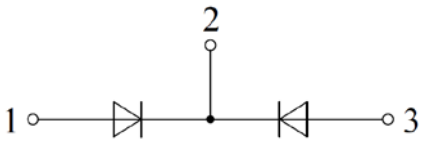
1800V/300A in one-package

General Description

STARPOWER Rectifier Diode Power Module provides ultra low conduction loss.They are designed for the applications such as SMPS.

Features

- Low forward voltage drop
- Small temperature coefficient
- High Surge Capacity
- Low inductance
- Isolated Copper Baseplate Using DBC Technology



Equivalent Circuit Schematic

Typical Applications

- Input bridge rectifier
- AC/DC motor control
- Power supply

Absolute Maximum Ratings T_C=25℃ unless otherwise noted

Symbol	Description	RD300CCS180C2S	Units
V_{RRM}	Repetitive Peak Reverse Voltage	1800	V
V_{RSM}	Non-repetitive Peak Reverse Voltage	1800	V
I_{FAV}	Average Forward Current T_C=100℃	300	A
I_{FSM}	Surge Forward Current V_R=0V,t_p=10ms,T_j=45℃ V_R=0V,t_p=8.3ms,T_j=45℃	6400 6900	A
I^2t	I^2t-value V_R=0V,t_p=10ms,T_j=45℃ V_R=0V,t_p=8.3ms,T_j=45℃	204800 198375	A^2s
P_D	Maximum Power Dissipation @ T_j=150℃	1289	W
T_j	Junction Temperature	-40 to +150	℃
T_{STG}	Storage Temperature Range	-40 to +125	℃
V_{ISO}	Isolation Voltage RMS,f=50Hz,t=1min	4000	V
M	Terminal Connection Torque, Screw M6 Mounting Torque, Screw M6	2.5 to 5.0 3.0 to 5.0	N.m

Electrical Characteristics of Diode T_C=25℃ unless otherwise noted

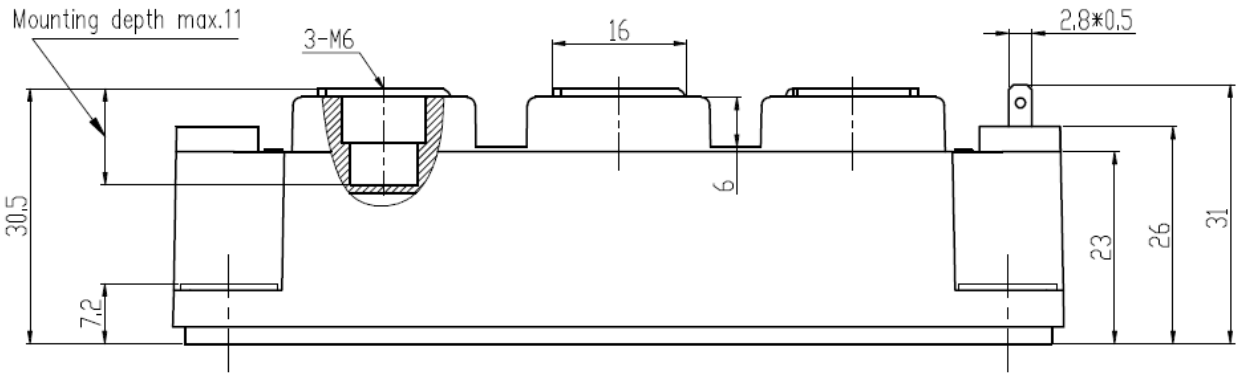
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Units
V_F	Diode Forward Voltage	I_F=600A	T_j=25℃			1.18	V
			T_j=150℃			1.18	
V_{F0}	Diode Threshold Voltage		T_j=150℃			0.83	V
r_F	Diode Forward Slope Resistance		T_j=150℃			0.4	mΩ
I_R	Diode Reverse Current	V_R=V_{RRM}	T_j=25℃			0.20	mA
			T_j=150℃			5.00	

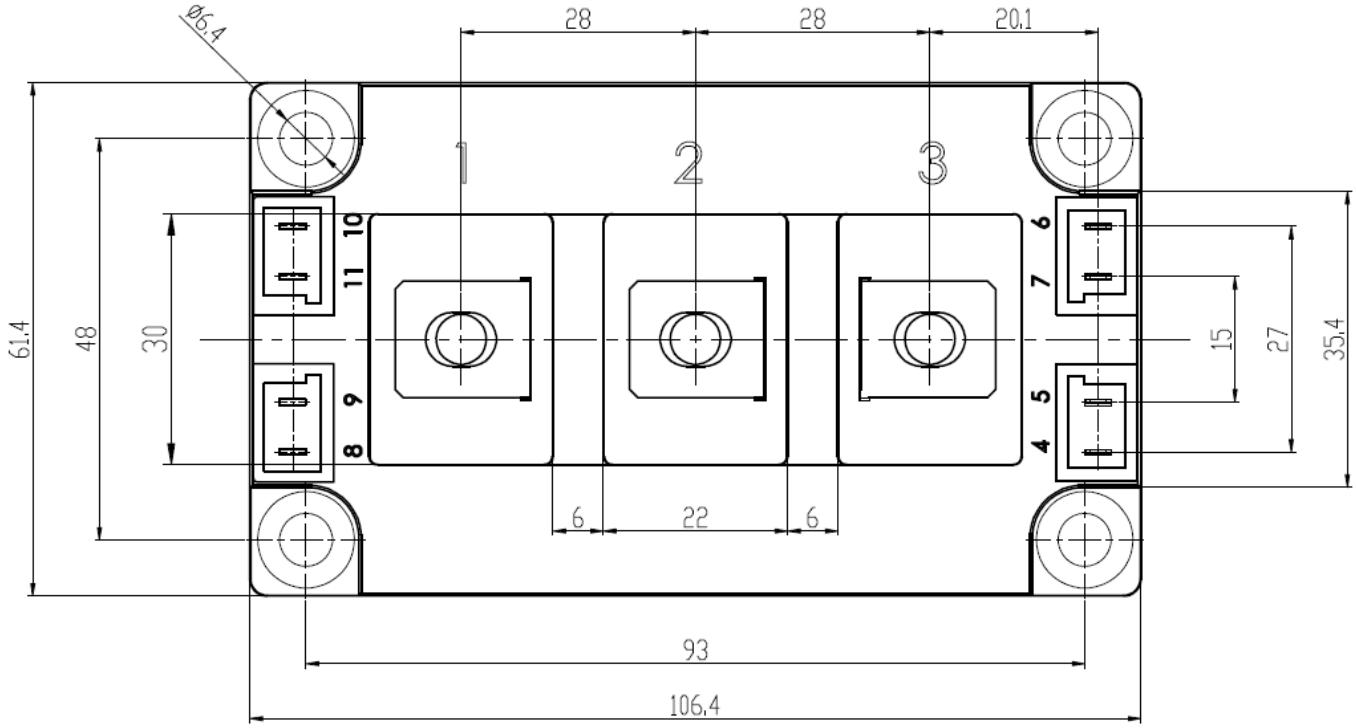
Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-Case (per Diode)		0.097	K/W
$R_{\theta CS}$	Case-to-Sink (Conductive grease applied)	0.035		K/W
Weight	Weight of Module	300		g

Package Dimensions

Dimensions in Millimeters





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