

STARPOWER

SEMICONDUCTOR

Rectifier Diode

RD60DGS120D6S

1200V/60A 2 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

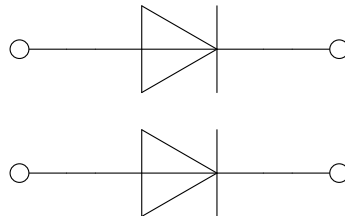
- Low forward voltage drop
- Small temperature coefficient
- High Surge Capacity
- Low inductance
- Isolated copper baseplate using DBC technology



Typical Applications

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

Equivalent Circuit Schematic



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

Symbol	Description	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V
V_{RSM}	Non-repetitive Peak Reverse Voltage	1300	V
I_F	Diode Continuous Forward Current @ $T_C=100^{\circ}\text{C}$	60	A
I_{FSM}	Surge Forward Current $V_R=0\text{V}, t_p=10\text{ms}, T_j=45^{\circ}\text{C}$ $V_R=0\text{V}, t_p=8.3\text{ms}, T_j=45^{\circ}\text{C}$	850	A
		930	
I^2t	I^2t -value $V_R=0\text{V}, t_p=10\text{ms}, T_j=45^{\circ}\text{C}$ $V_R=0\text{V}, t_p=8.3\text{ms}, T_j=45^{\circ}\text{C}$	3610	A^2s
		3600	
P_D	Maximum Power Dissipation @ $T_j=150^{\circ}\text{C}$	212	W

Module

Symbol	Description	Value	Unit
T_{jmax}	Maximum Junction Temperature	150	$^{\circ}\text{C}$
T_{jop}	Operating Junction Temperature	-40 to +150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-40 to +150	$^{\circ}\text{C}$
V_{ISO}	Isolation Voltage RMS, $f=50\text{Hz}, t=1\text{min}$	2500	V

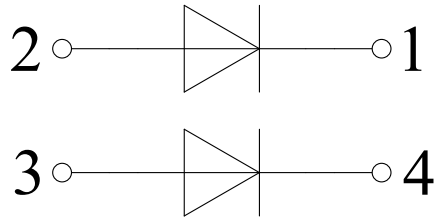
Diode Characteristics $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_F	Diode Forward Voltage	$I_F=80\text{A}, T_j=25^{\circ}\text{C}$			1.23	V
		$I_F=80\text{A}, T_j=150^{\circ}\text{C}$			1.17	
I_R	Diode Reverse Current	$V_R=V_{RRM}, T_j=25^{\circ}\text{C}$			0.5	mA
		$V_R=V_{RRM}, T_j=150^{\circ}\text{C}$			1.5	
V_{T0}	Threshold Voltage	$T_j=150^{\circ}\text{C}$			0.85	V
r_T	Forward Slope Resistance	$T_j=150^{\circ}\text{C}$			3.9	$\text{m}\Omega$

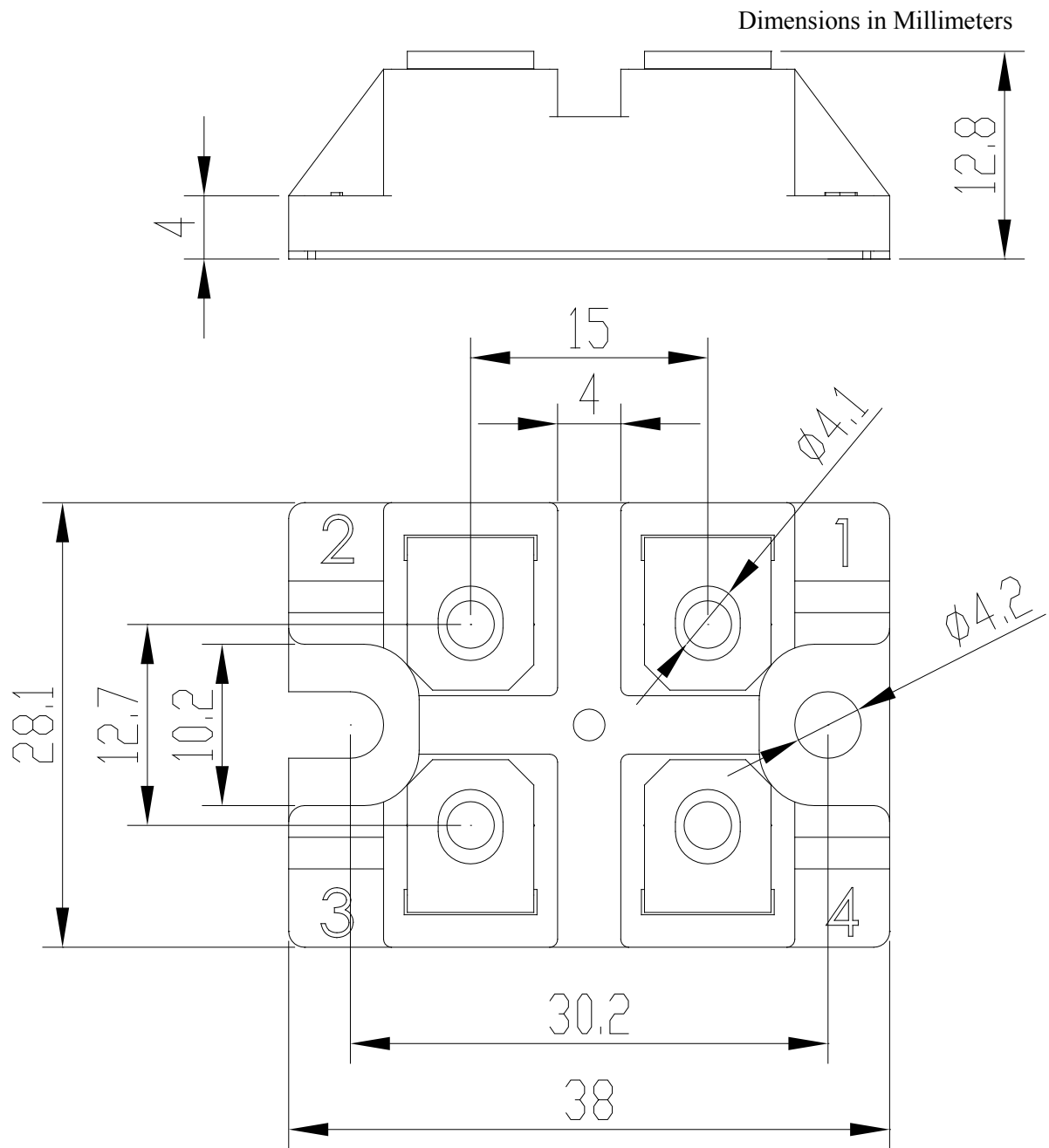
Module Characteristics $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Unit
R_{thJC}	Junction-to-Case			0.588	K/W
R_{thCH}	Case-to-Heatsink		0.15		K/W
M	Terminal Connection Torque, Screw M4	1.1		1.5	N.m
	Mounting Torque, Screw M4	1.1		1.5	
G	Weight of Module		30		g

Circuit Schematic



Package Dimensions



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