

# STARPOWER

SEMICONDUCTOR

## Rectifier Diode

### RD100SGJ180C9S

Molding Type Module

**1800V/100A 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

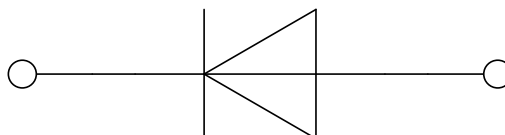
- Low forward voltage drop
- Small temperature coefficient
- High Surge Capacity
- Low inductance
- Isolated Copper Baseplate Using DBC Technology



#### 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

Symbol	Description	Value	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage	1800	V
$V_{RSM}$	Non-repetitive Peak Reverse Voltage	1900	V
$I_{FAV}$	Average Forward Current $T_C=85^{\circ}\text{C}$	100	A
$I_{FSM}$	Surge Forward Current $V_R=0\text{V}, t_p=10\text{ms}, T_j=25^{\circ}\text{C}$ $V_R=0\text{V}, t_p=10\text{ms}, T_j=125^{\circ}\text{C}$	2625	A
		2100	
$I^2t$	$I^2t$ -value $V_R=0\text{V}, t_p=10\text{ms}, T_j=25^{\circ}\text{C}$ $V_R=0\text{V}, t_p=10\text{ms}, T_j=125^{\circ}\text{C}$	34453	$\text{A}^2\text{s}$
		22050	

**Module**

Symbol	Description	Value	Unit
$T_{jmax}$	Maximum Junction Temperature	150	$^{\circ}\text{C}$
$T_{jop}$	Operating Junction Temperature	-40 to +125	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature Range	-40 to +125	$^{\circ}\text{C}$
$V_{ISO}$	Isolation Voltage RMS, $f=50\text{Hz}, t=1\text{min}$	4000	V

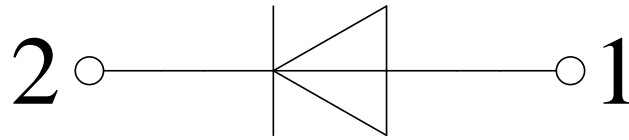
**Electrical Characteristics of Diode**  $T_C=25^{\circ}\text{C}$  unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_F$	Diode Forward Voltage	$I_F=300\text{A}$	$T_j=25^{\circ}\text{C}$		1.55	V
			$T_j=125^{\circ}\text{C}$		1.50	
$I_R$	Diode Reverse Current	$V_R=V_{RRM}$			4.50	mA

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

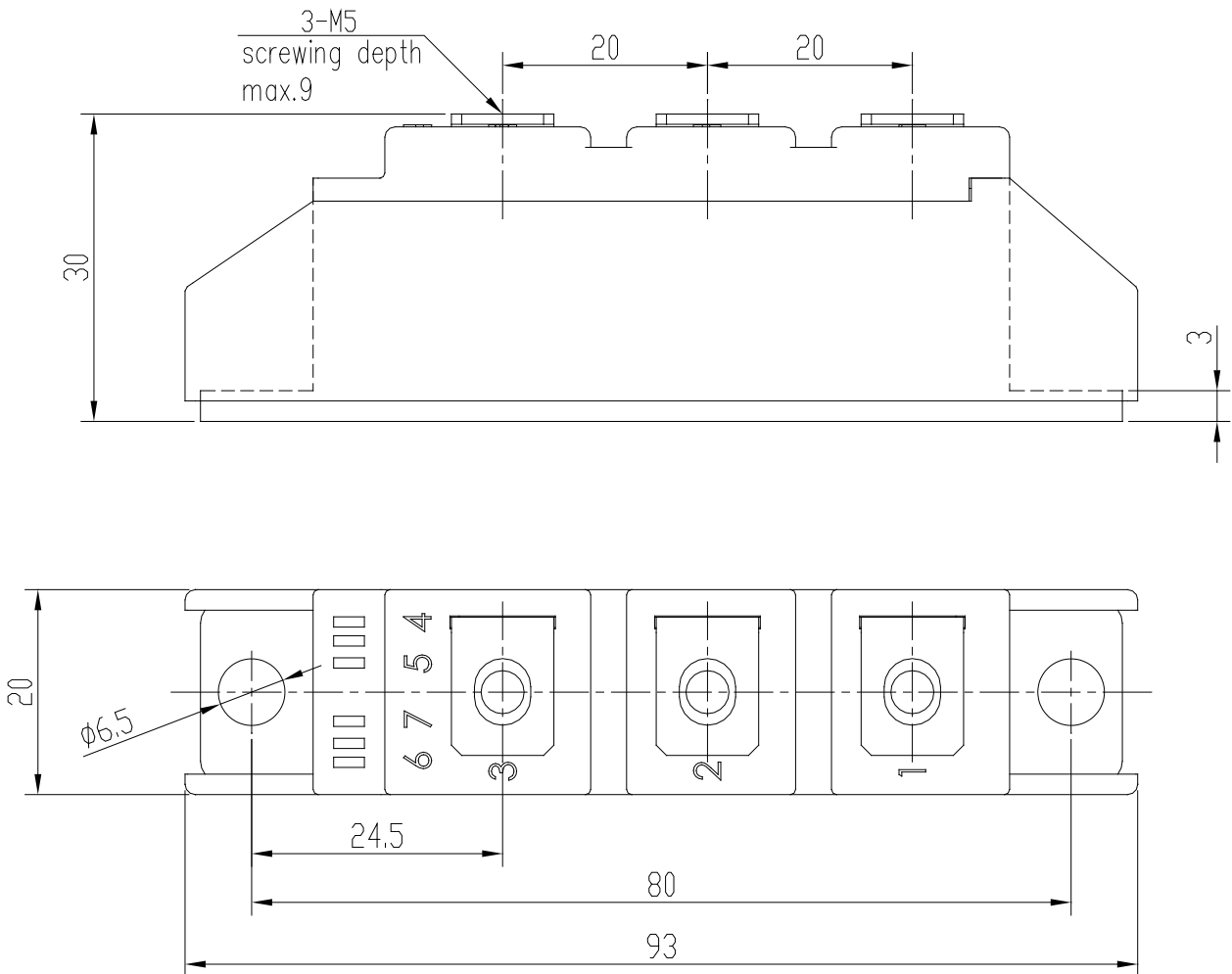
Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{thJC}$	Junction-to-Case (per Diode)			0.446	K/W
$R_{thCH}$	Case-to-Heatsink (per Module)		0.1		K/W
M	Terminal Connection Torque, Screw M5	2.5		5.0	N.m
	Mounting Torque, Screw M6	3.0		5.0	
G	Weight of Module		95		g

### Circuit Schematic



### Package Dimensions

Dimensions in Millimeters



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