



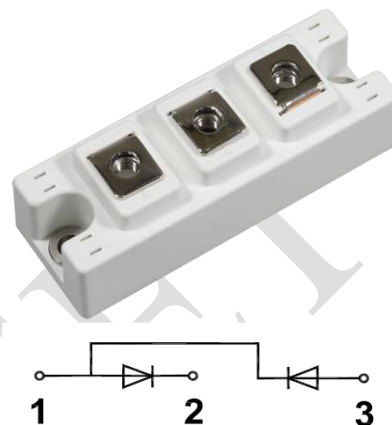
RD175HF180T1WH

Rectifier Diode Module

Preliminary Data

Features:

- Blocking Voltage: 1800 V
- Heat Transfer Through Aluminum Oxide DBC Ceramic Isolated Metal Baseplate
- Glass Passivated Chip



Applications:

- Supplies for DC Power Equipment
- Input Rectifiers for PWM Inverter
- Rectified Power Supply
- Battery DC Power Supplies

Maximum Rated

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
V_{RSM}	Non-Repetitive Reverse Blocking Voltage	$T_{VJ}=25^{\circ}\text{C}$	1900			V
V_{RRM}	Repetitive Reverse Blocking Voltage	$T_{VJ}=25^{\circ}\text{C}$	1800			V
I_{FAV}	Average Forward Current	$T_C=100^{\circ}\text{C}$			175	A
I_{FSM}	Surge Current	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			6000	A
i^2t	I^2t - value	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			180000	A^2s
P_{tot}	Total Power Dissipation	$T_{VJ}=25^{\circ}\text{C}$			830	W



Electrical Characteristics

V_F	Forward Voltage	$I_F=175A$, $T_{VJ}=25^{\circ}C$			1.20	V
		$I_F=175A$, $T_{VJ}=125^{\circ}C$			1.20	V
		$I_F=350A$, $T_{VJ}=25^{\circ}C$			1.50	V
		$I_F=350A$, $T_{VJ}=125^{\circ}C$			1.50	V
I_R	Reverse Current	$V_{RD}=1800V$, $T_{VJ}=25^{\circ}C$			100	μA
		$V_{RD}=1800V$, $T_{VJ}=125^{\circ}C$			3.5	mA

Thermal Characteristics

Symbol	Description	Min.	Typ.	Max.	Unit
$R_{th(j-c)}$	Diode Thermal Resistance: Junction-To-Case			0.15	$^{\circ}C/W$
$R_{th(c-s)}$	Case-To-Sink Thermally (Conductive Grease Applied)			0.07	$^{\circ}C/W$

Module

Symbol	Description		Min.	Typ.	Max.	Unit
V_{ISOL}	Isolation Voltage (All Terminals Shorted)	AC 50Hz, RMS, 1s, $I_{ISOL} \leq 1mA$	3600			V
Internal Isolation			Al ₂ O ₃			
d_{creep}	Creepage Distance on Surface	terminal to terminal	9.7			mm
		terminal to backside	16.0			mm
T_{VJ}	Operating Junction Temperature Range		-40		150	$^{\circ}C$
T_{stg}	Storage Temperature		-40		125	$^{\circ}C$
CTI	Comparative Tracking Index		200			
T	Power Terminal Screw:M6		4.0		6.0	Nm
T	Mounting Screw:M6		4.0		6.0	Nm
G	Weight			155		g



Ordering Information Table

Device code	RD	175	HF	180	T1W	H
	①	②	③	④	⑤	⑥

- | |
|---|
| 1 |
|---|

 - Rectifier Module
- | |
|---|
| 2 |
|---|

 - Rated Current (175=175A)
- | |
|---|
| 3 |
|---|

 - Circuit Configuration (Half Bridge)
- | |
|---|
| 4 |
|---|

 - Rated Voltage (180=1800V)
- | |
|---|
| 5 |
|---|

 - Package Type
- | |
|---|
| 6 |
|---|

 - Test Level (Pass the Important Reliability Test-Industrial Grade)

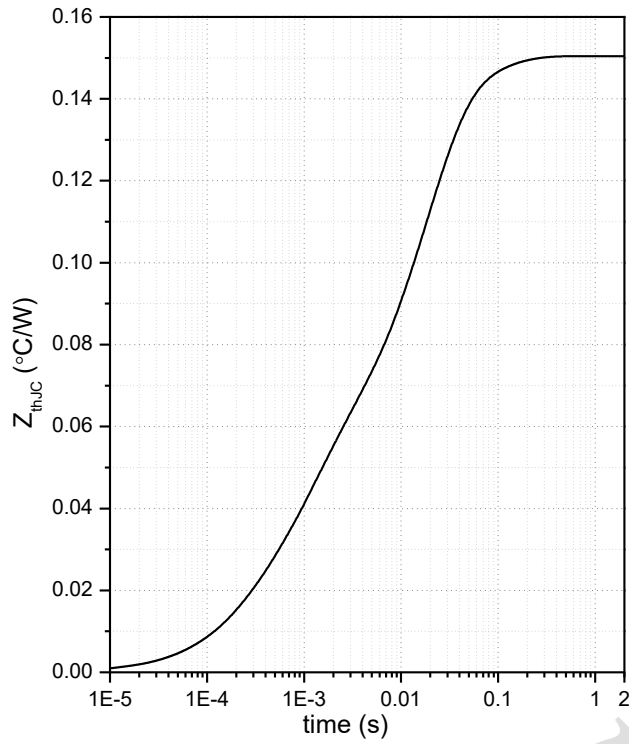


Fig.1 Transient Thermal Impedance



Date	Revision	Notes
01/28/2021	01	Initial Release

Announcement

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The datasheet with “REV.” + “Arabic numerals” is based on engineering data for initial reference purpose only.

The released datasheet would be issued with “REV.” + “alphabet characters”.