



RD300HF180P2H

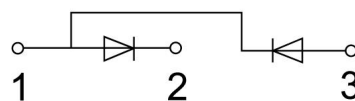
Rectifier Diode Module

Preliminary Data

Features:

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

Circuit Diagram



Applications:

- Non-Controllable Rectifiers for AC/AC Converters
- Line Rectifiers for Transistorized AC Motor Controllers
- Field Supply for DC Motors

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 Peak Reverse Voltage	$T_{VJ}=25^{\circ}\text{C}$	1800			V
I_{FAV}	Average Forward Current	$T_{VJ}=25^{\circ}\text{C}$, $T_c=80^{\circ}\text{C}$			300	A
$I_{F(RMS)}$	RMS Forward Current	Single Phase, Half Wave 180° Conduction $T_c=97^{\circ}\text{C}$			470	A
I_{FSM}	Surge Current @ $t_p=10\text{ms}$	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			7100	A
I^2t	I^2t - value	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			252000	A ² s
P_{tot}	Total Power Dissipation	$T_{VJ}=25^{\circ}\text{C}$			1623	W



Electrical Characteristics

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
V_F	Forward Voltage	$I_F=300A$, $T_{VJ}=25^{\circ}C$		1.15		V
		$I_F=300A$, $T_{VJ}=125^{\circ}C$			1.10	V
		$I_F=300A$, $T_{VJ}=150^{\circ}C$			1.10	V
I_R	Reverse Current	$V_{RD}=1800V$, $T_{VJ}=25^{\circ}C$			100	μA
		$V_{RD}=1800V$, $T_{VJ}=125^{\circ}C$			2	mA
		$V_{RD}=1800V$, $T_{VJ}=150^{\circ}C$			10	mA
V_{TO}	Threshold Voltage	$T_{VJ}=125^{\circ}C$			0.75	V
r_T	Slope Resistance	$T_{VJ}=125^{\circ}C$			1.2	m Ω
$R_{th(j-c)}$	Diode Thermal Resistance: Junction-to-Case (per chip)				0.077	$^{\circ}C/W$

Module

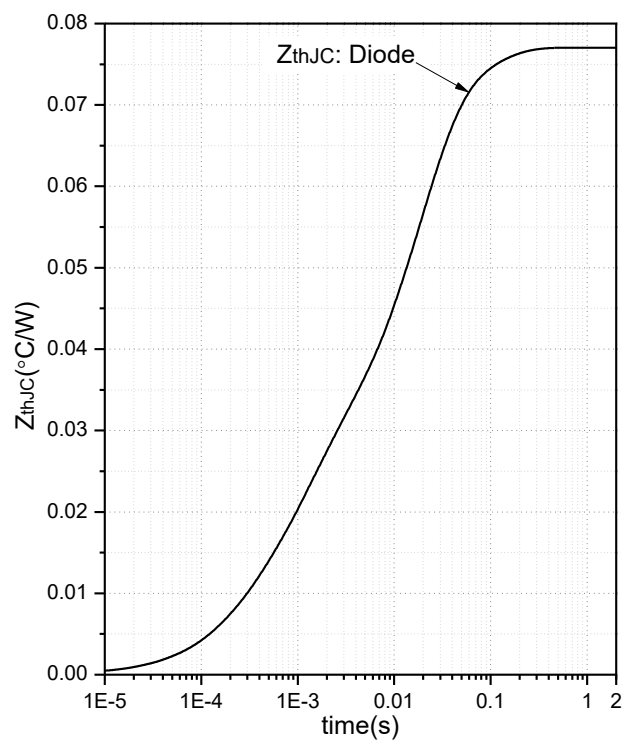
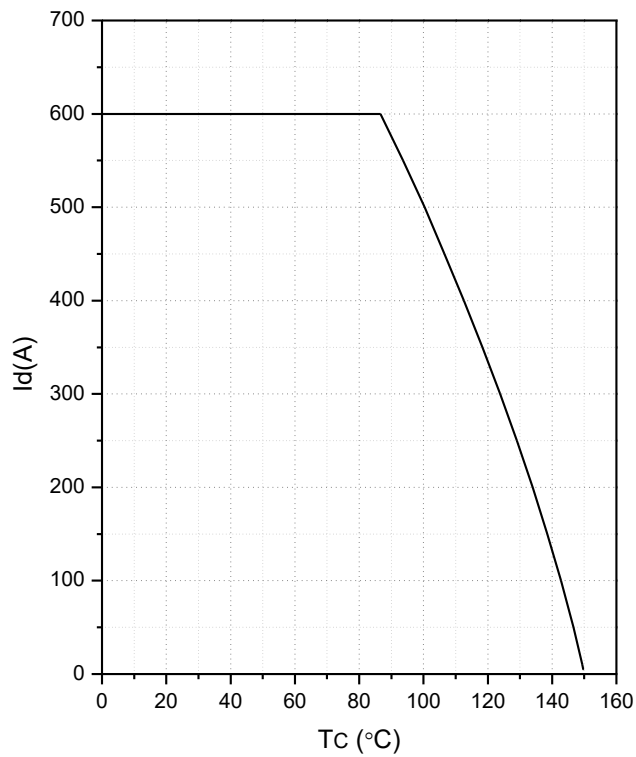
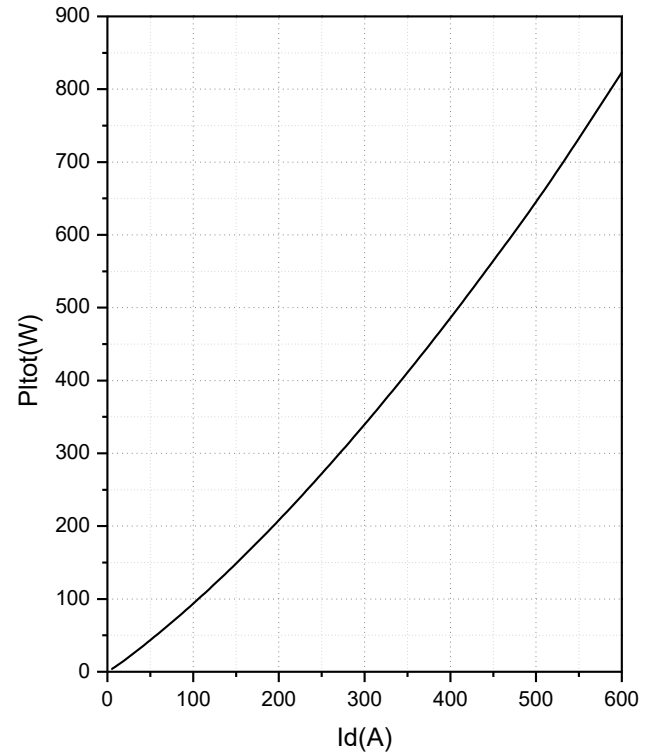
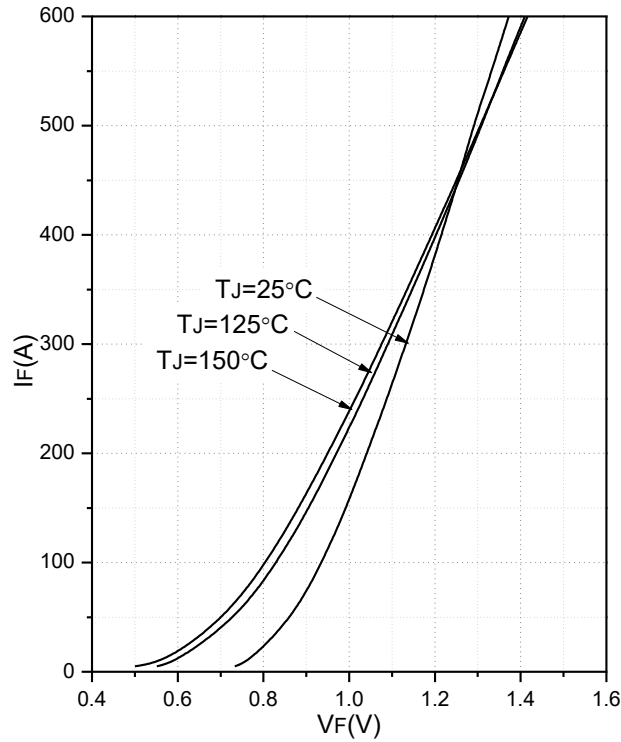
Symbol	Description	Min.	Typ.	Max.	Units
V_{ISOL}	Isolation Voltage (All Terminals Shorted)	50Hz, RMS,30s, $I_{ISOL} \leq 1mA$		4500	V
Internal Isolation		Al_2O_3			
d_{creep}	Creepage Distance		10		mm
T_{VJ}	Junction Temperature Range	-40		150	$^{\circ}C$
T_{stg}	Storage Temperature	-40		150	$^{\circ}C$
$R_{th(c-s)}$	Case-to-Sink Thermally (Conductive Grease Applied, $\lambda=1W/mK$)			0.04	$^{\circ}C/W$
T	Terminal Connection Torque:M8	8.0		10.0	N·m
G	Weight		330		g



Ordering Information Table

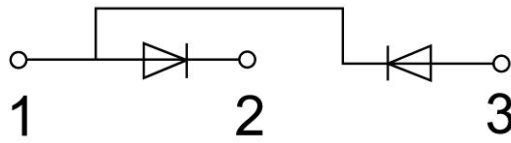
Device code	RD	300	HF	180	P2	H
	①	②	③	④	⑤	⑥

- ① - Rectifier Module
- ② - Rated Current (300=300A)
- ③ - Circuit Configuration: HF (Half Bridge)
- ④ - Rated Voltage (180=1800V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)

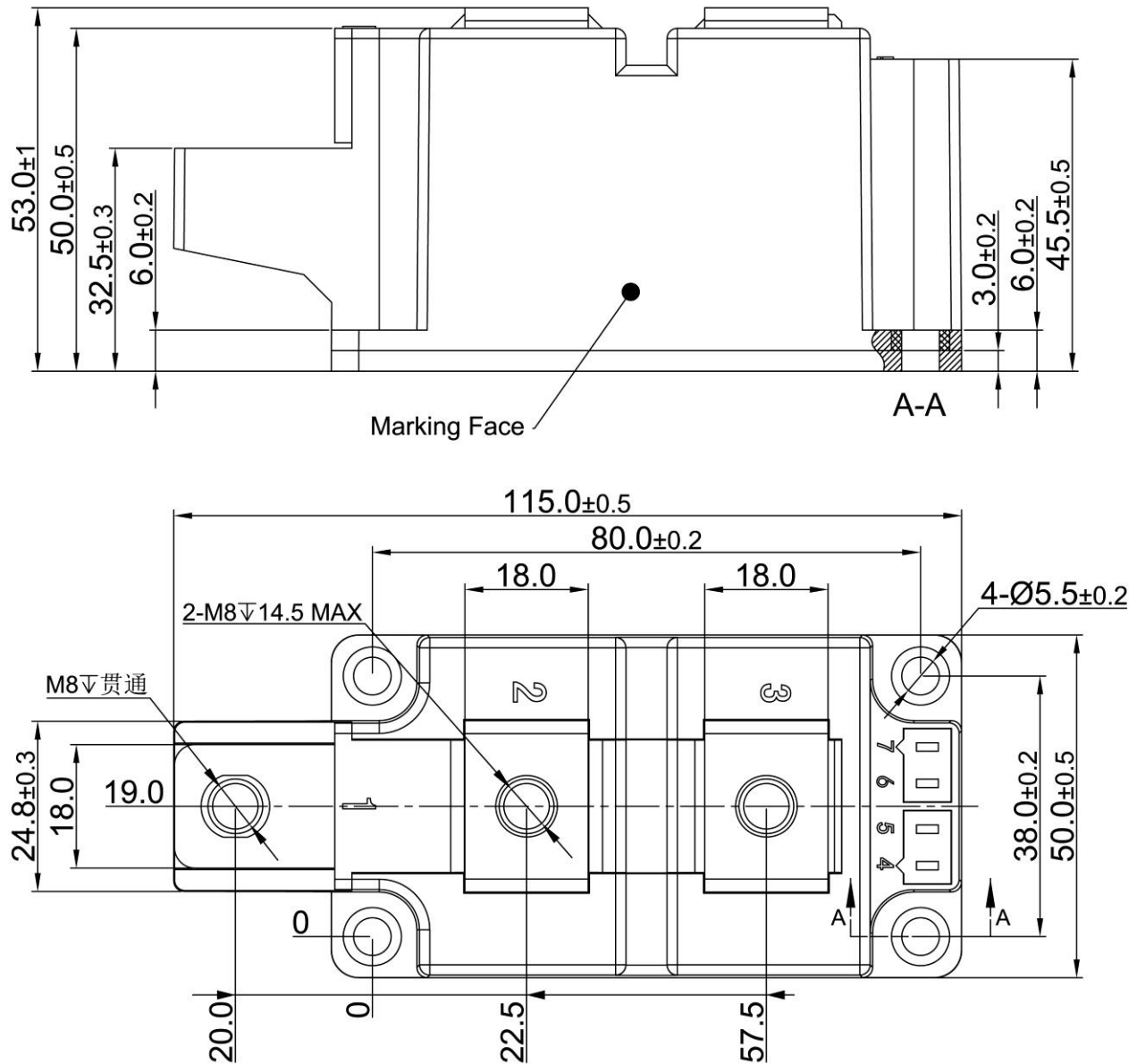




Internal Circuit



Package Outline Information (Unit: mm):





Date	Revision	Notes
12/27/2023	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”.