



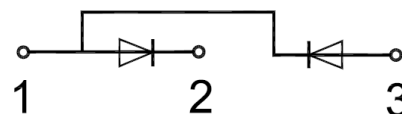
RD230HF180T1WHJ

Rectifier Module

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_{RRM}	Repetitive Peak Reverse Voltage	$T_{VJ}=25^{\circ}\text{C}$	1800			V
I_{FAV}	Average Forward Current	$T_{VJ}=25^{\circ}\text{C}$, $T_c=80^{\circ}\text{C}$			230	A
$I_{F(RMS)}$	RMS Forward Current	Single Phase, Half Wave 180° Conduction $T_c=97^{\circ}\text{C}$			360	A
I_{FSM}	Surge Current @ $t_p=10$ ms	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			6600	A
I^2t	I^2t - Value	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			217800	A^2s
P_{tot}	Total Power Dissipation	$T_{VJ}=25^{\circ}\text{C}$			1044	W



Thermal Characteristics

Symbol	Description	Min.	Typ.	Max.	Units
R _{th(j-c)}	Thermal Resistance: Junction-to-Case (per Diode)			0.12	°C/W
R _{th(c-s)}	Case-to-Sink Thermally (Conductive Grease Applied, λ=1W/mK)			0.07	°C/W

Electrical Characteristics

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
V _F	Forward Voltage	I _F =230A, T _{VJ} =25°C		1.10	1.25	V
		I _F =230A, T _{VJ} =125°C		1.07		V
		I _F =230A, T _{VJ} =150°C		1.06		V
I _R	Reverse Current	V _{RD} =1800V, T _{VJ} =25°C			1	mA
		V _{RD} =1800V, T _{VJ} =125°C			5	mA
		V _{RD} =1800V, T _{VJ} =150°C			10	mA

Module

Symbol	Description	Min.	Typ.	Max.	Units
V _{ISOL}	Isolation Voltage (All Terminals Shorted)	AC 50Hz, RMS, 1min, I _{ISOL} ≤1mA			V
Internal Isolation			Al ₂ O ₃		
d _{creep}	Creepage Distance on Surface	terminal to terminal	20		mm
		terminal to backside	17		mm
T _{VJ}	Junction Temperature Range	-40		+150	°C
T _{OP}	Operating Temperature	-40		+125	°C
T _{stg}	Storage Temperature	-40		+125	°C
T	Power Terminal Screw:M6	3.0		5.0	Nm
T	Mounting Screw:M6	4.0		6.0	Nm
G	Weight		155		g



Ordering Information Table

Device code	RD	230	HF	180	T1W	H	J
	①	②	③	④	⑤	⑥	⑦

- ① - Rectifier Module
- ② - Rated Current (230=230A)
- ③ - Circuit Configuration: Half Bridge
- ④ - Rated Voltage (180=1800V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)
- ⑦ - Internal Code

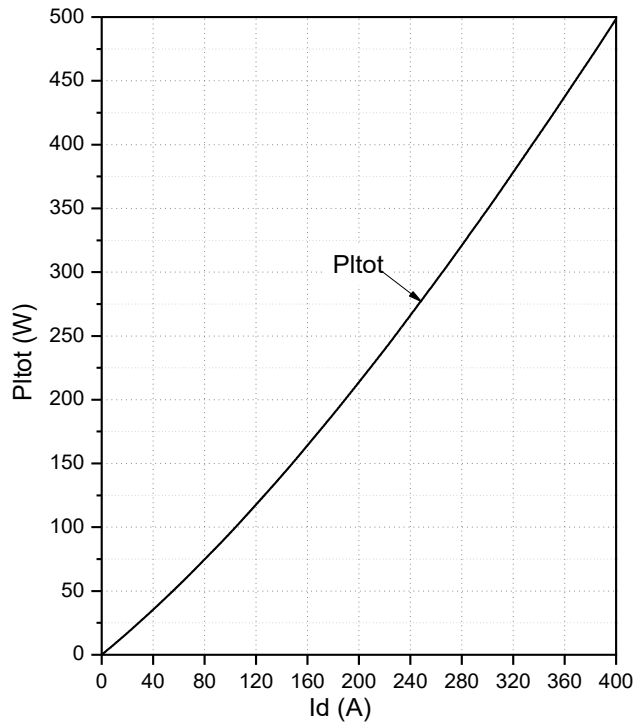


Fig.1 Power Dissipation

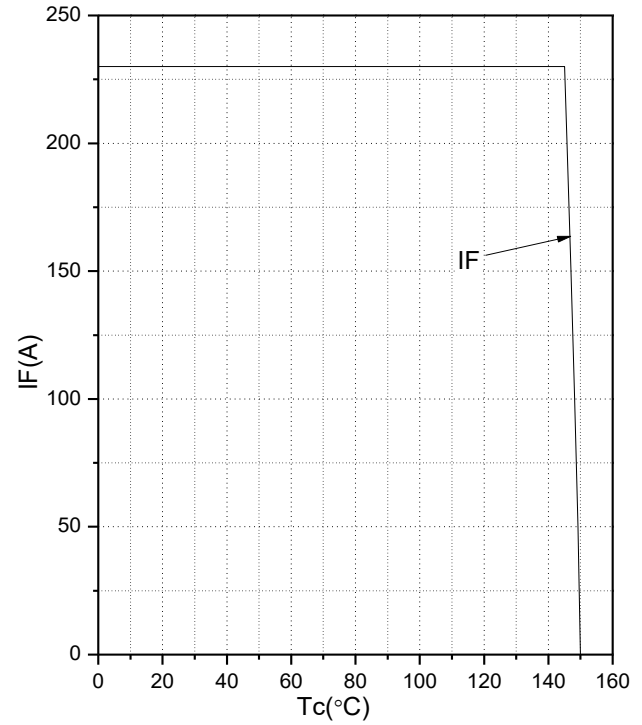


Fig.2 Forward Current Derating Curve

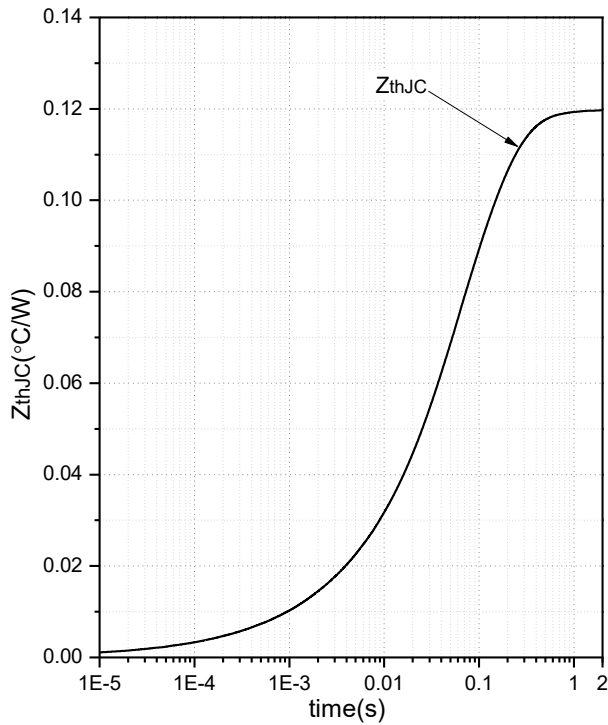


Fig.3 Transient Thermal Impedance

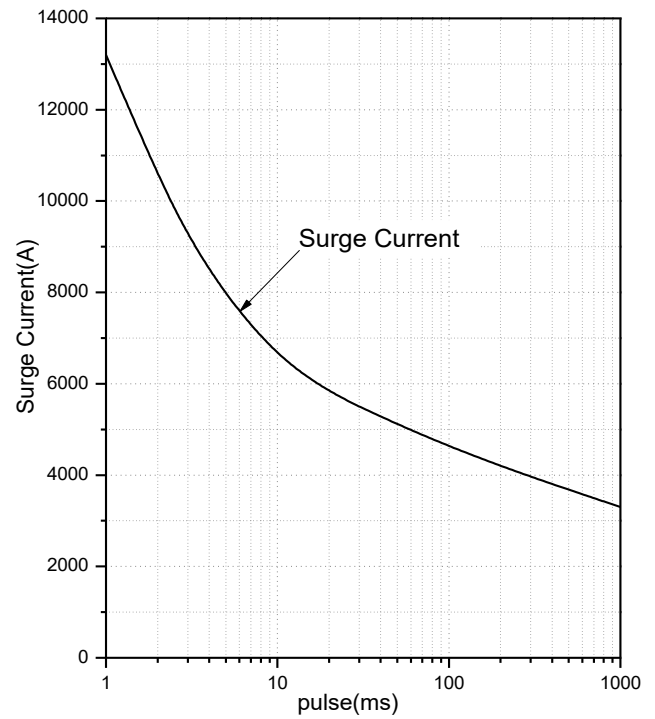


Fig.4 Max Non-Repetitive Forward Surge Current

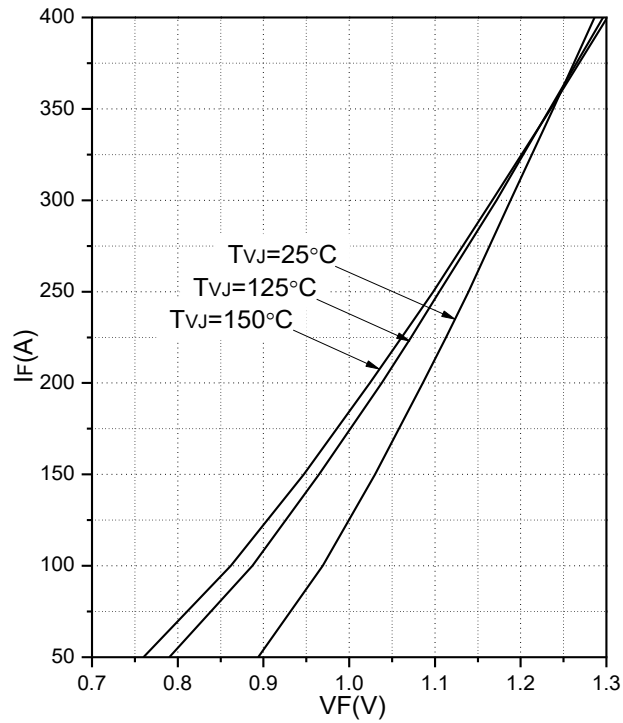


Fig.5 Forward Characteristics



Revision	Notes
A	Final Version
B	Update Package Outline
C	Update Electrical Characteristics
D	Update Rth(j-c)

Announcement

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