



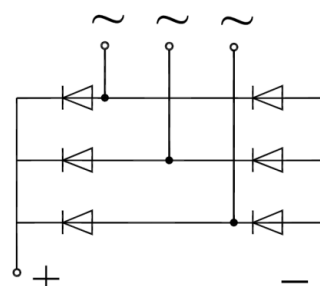
RD250FF180C3H

Rectifier Diode Module

Features:

- Blocking Voltage:1800V
- Heat Transfer Through Aluminum Oxide DBC Ceramic Isolated Metal Baseplate
- Three Phase Bridge Rectifier
- Low Forward Voltage
- High Surge Current Capability

Circuit Diagram



Applications:

- Input Bridge Rectifier for AC/DC Motor Control
- Three Phase Rectifiers for Power Supplies

Maximum Rated Values

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_D	Output Current(D.C.)	Three Phase, Full Wave, $T_c=90^{\circ}\text{C}$			250	A
I_{FSM}	Surge Current @ $t_p=10$ ms	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			2592	A
I^2t	I^2t - Value	$t_p=10\text{ms}$, $\sin 180^{\circ}$, $T_{VJ}=25^{\circ}\text{C}$			33590	A^2s
P_{tot}	Total Power Dissipation	$T_{VJ}=25^{\circ}\text{C}$			655	W



Thermal Characteristics

Symbol	Description	Min.	Typ.	Max.	Units
$R_{th(J-C)}$	Diode Thermal Resistance: Junction-to-Case(per Diode)			0.19	°C/W
$R_{th(C-S)}$	Case-to-Sink Thermally (Conductive Grease Applied, $\lambda=1W/mK$)			0.04	°C/W

Electrical Characteristics

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
V _F	Forward Voltage	I _F =250A, T _{VJ} =25°C		1.25	1.50	V
		I _F =250A, T _{VJ} =125°C		1.25		V
		I _F =250A, T _{VJ} =150°C		1.26		V
I _R	Reverse Current	V _{RD} =1800V, T _{VJ} =25°C			100	uA
		V _{RD} =1800V, T _{VJ} =125°C			1	mA
		V _{RD} =1800V, T _{VJ} =150°C			9	mA

Module

Symbol	Description	Min.	Typ.	Max.	Units
V _{ISOL}	Isolation Voltage (All Terminals Shorted)	AC 50Hz, RMS, 1min	2500		V
Internal Isolation			Al ₂ O ₃		
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	4.0		6.0	N·m
T	Mounting Screw:M6	4.0		6.0	N·m
G	Weight		240		g



Ordering Information Table

Device code	RD	250	FF	180	C3	H
	①	②	③	④	⑤	⑥

- ① - Rectifier Module
- ② - Rated Current (250=250A)
- ③ - Circuit Configuration (Full Bridge)
- ④ - Rated Voltage (180=1800V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)

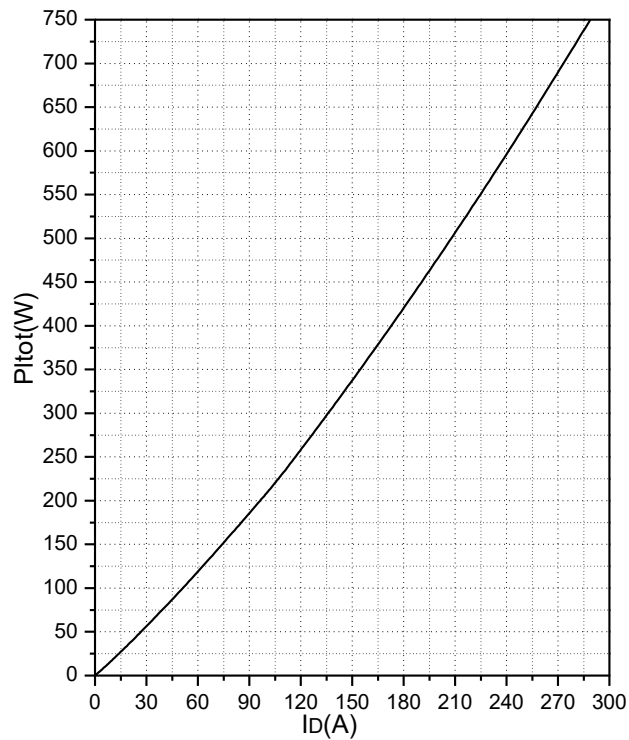


Fig.1 Power Dissipation

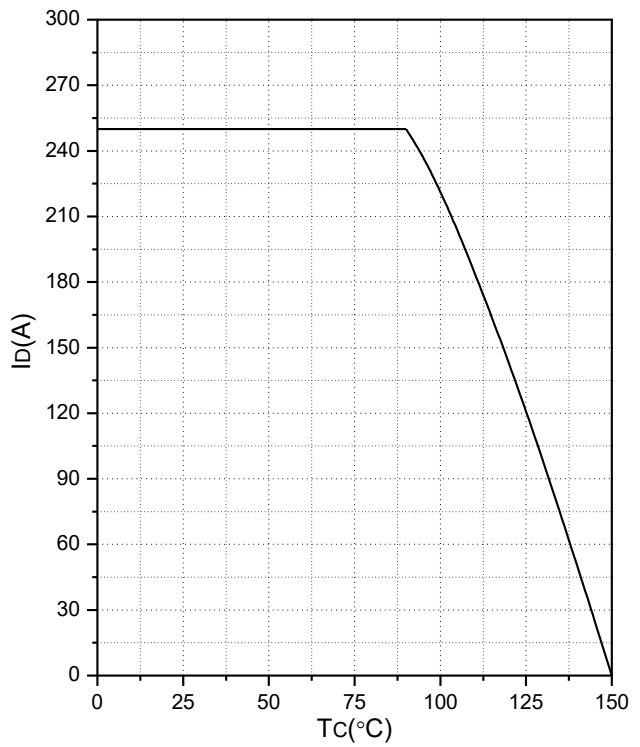


Fig.2 Forward Current Derating Curve

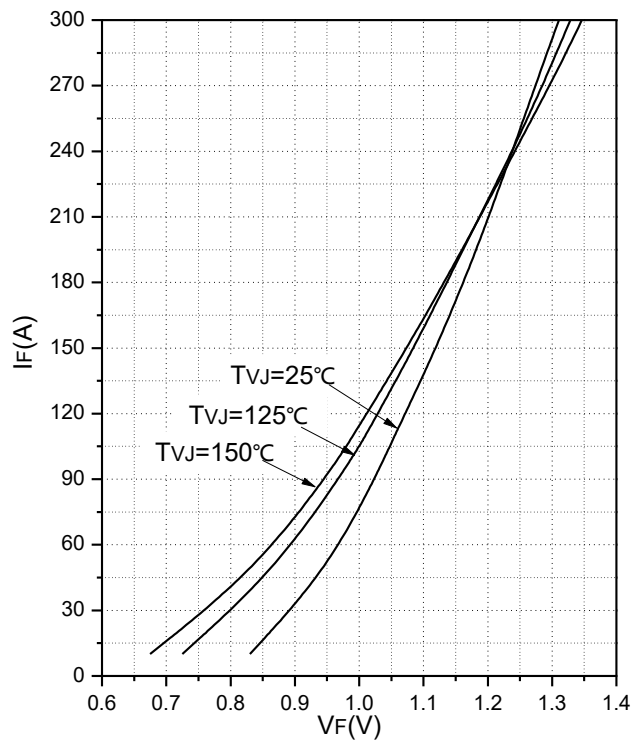


Fig.3 Forward Characteristics

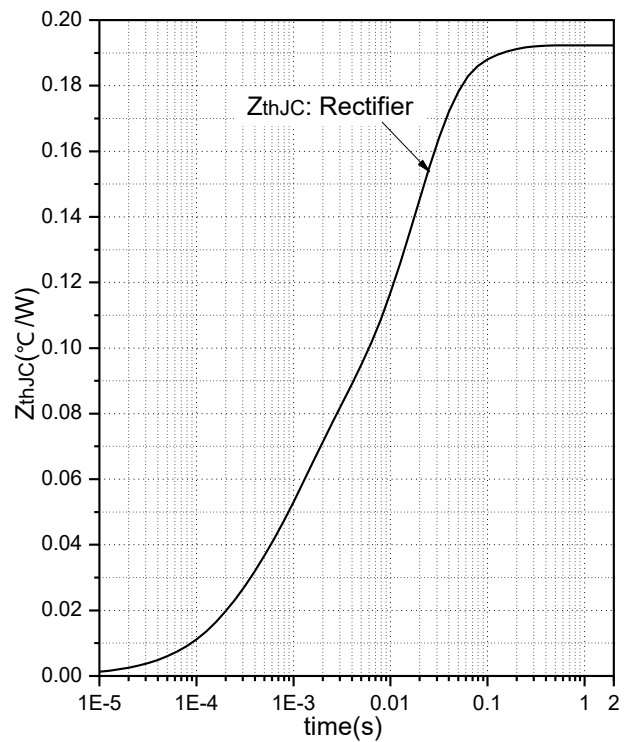
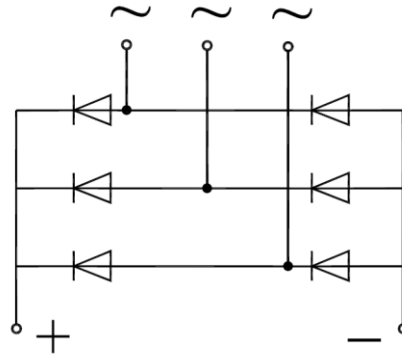


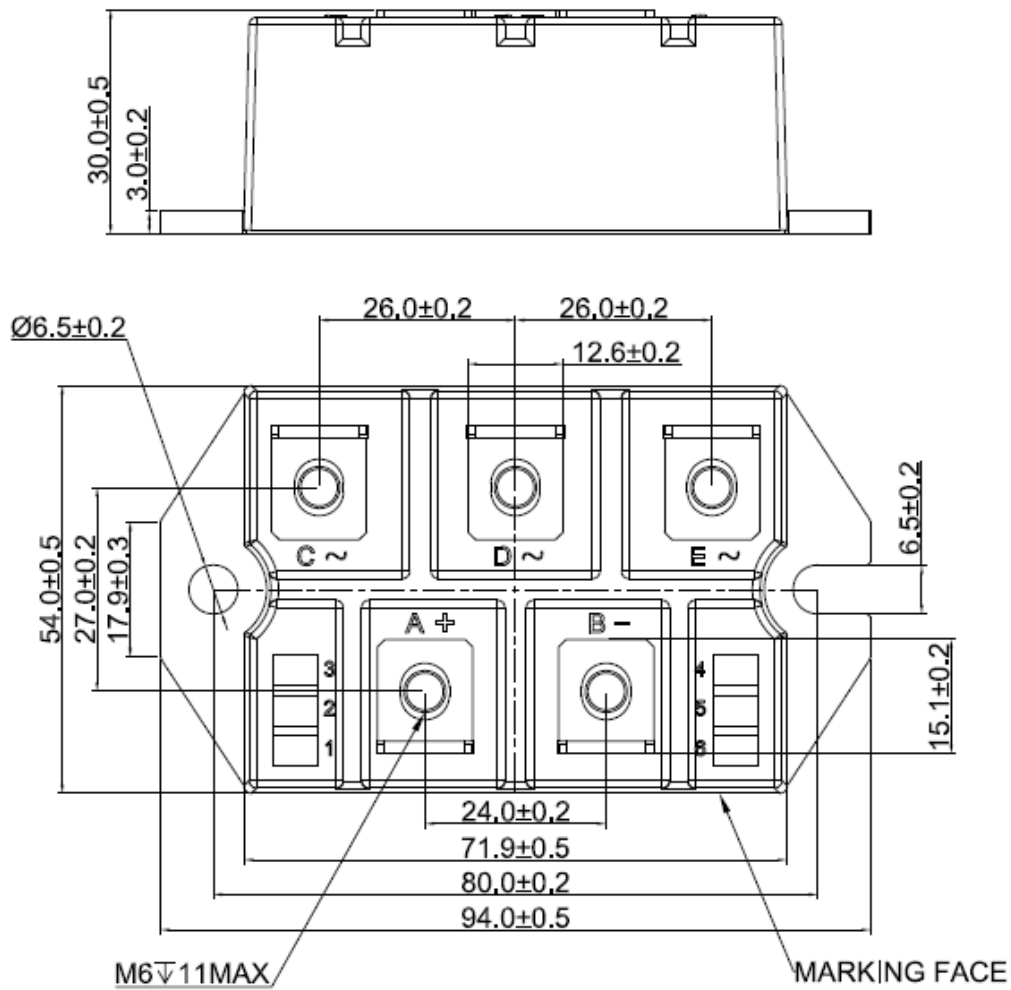
Fig.4 Transient Thermal Impedance



Internal Circuit



Package Outline Information (Unit: mm):





Revision	Notes
01	Initial Release
02	Updated Electrical Characteristic Parameter Values

Announcement

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