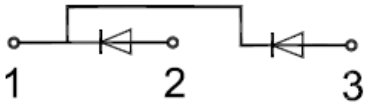
RD300CK180T1WHJ

Rectifier Diode Module

Features：

- Blocking voltage:1800V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip



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	Tj =25℃	1800			V
I_{FAV}	Average Forward Current	Tj=25℃，Ts=80℃			300	A
$I_{F(RMS)}$	RMS Forward Current	Single phase,half wave 180° conduction Tc=97℃			345	A
I_{FSM}	Surge Current @t_p=10 ms	tp=10ms，sin180°，Tj=25℃			3600	A
i^2t	I^2t - value	tp=10ms, sin180°Tj=25℃			64800	A^2s
V_{iso}	Isolation Voltage(All Terminals Shorted)	AC 50HZ; r.m.s.; 1min	3000			V
T_{vj}	Maximum Operating Junction Temperature Range		-40		150	℃
T_{stg}	Storage Temperature		-40		125	℃
T	Power Terminals Screw:M6		4.0		6.0	Nm
T	Mounting Screw:M6		4.0		6.0	Nm
G	Weight			155		g

Thermal Characteristics

Symbol	Description	Min.	Typ.	Max.	Unit
$R_{th(j-c)}$	Diode Thermal Resistance: Junction-To-Case			0.085	℃/.W
$R_{th(c-s)}$	Case-To-Sink Thermally (Conductive Grease Applied)			0.05	℃/.W

Electrical Characteristics

Symbol	Description	Conditions	Values			Unit
			Min	Typ	Max	
V_F	Forward Voltage	IF=300A, T=25℃		1.13	1.16	V
		IF=300A ,T=125℃		1.10		V
		IF=300A ,T=150℃		1.09		V
I_R	Reverse current	V_{RD}=1800V，Tj=25℃			100	uA
		V_{RD}=1800V，Tj=125℃			2	mA
		V_{RD}=1800V，Tj=150℃			9	mA

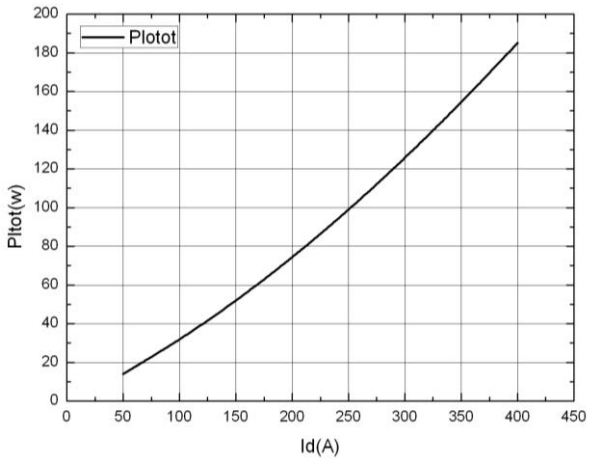


Fig.1 Power dissipation

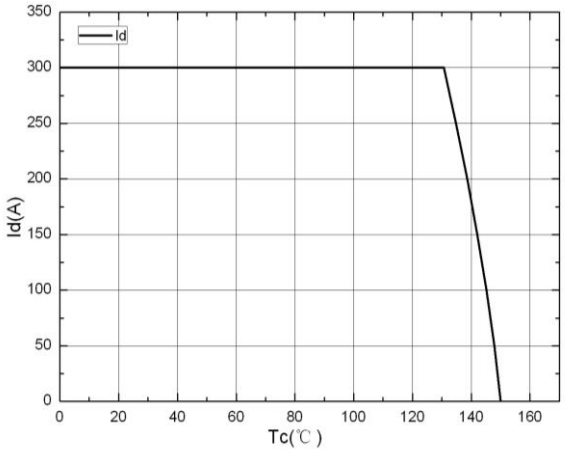


Fig.2 Forward Current Derating Curve

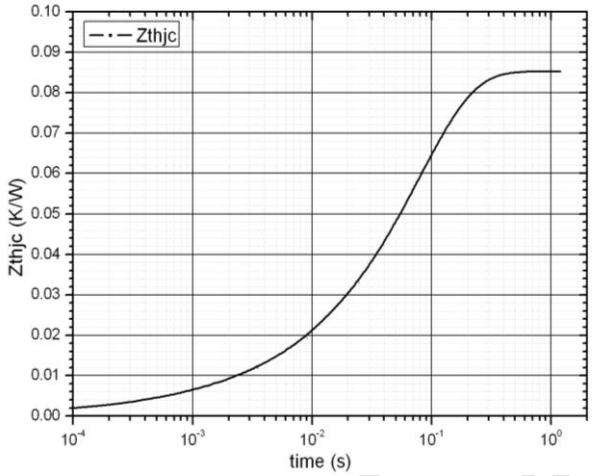


Fig.3 Transient thermal impedance

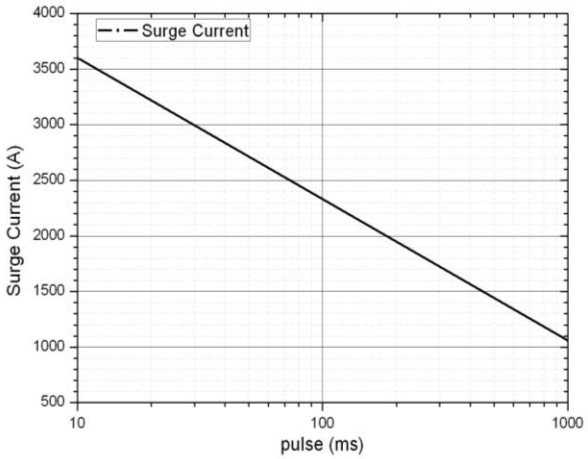


Fig.4 Max Non-Repetitive Forward Surge Current

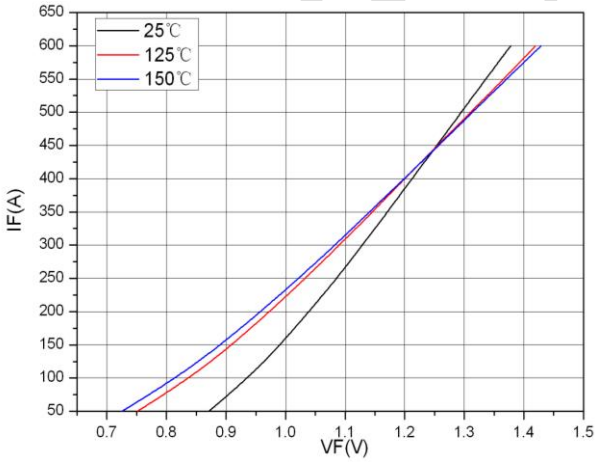
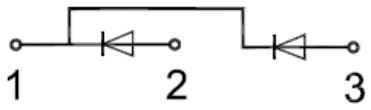
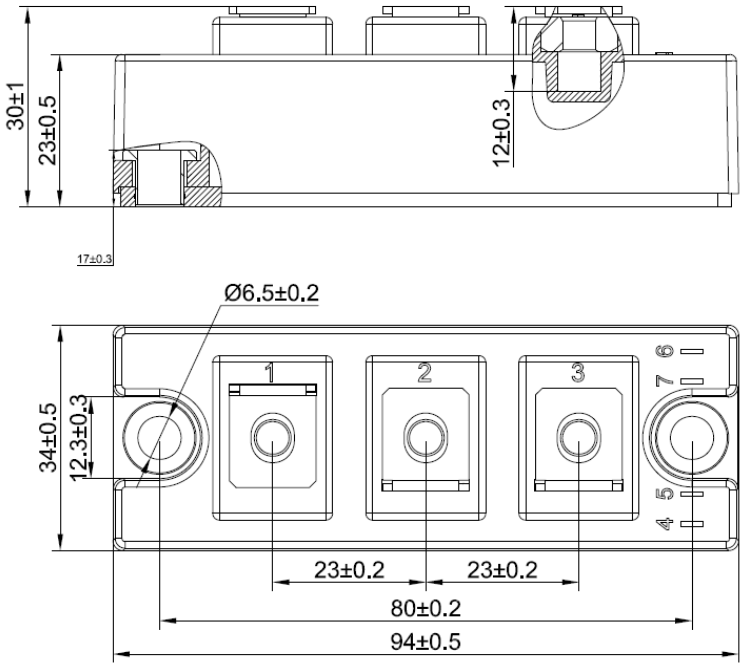


Fig.5 Forward Characteristics

Internal Circuit



Package Outline Information (Unit: mm):



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