



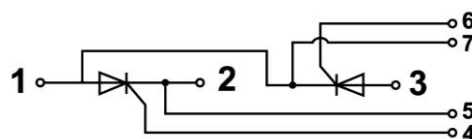
RS200HF180T1WH

Thyristor Module

Features:

- Blocking Voltage:1800V
- Heat Transfer Through Aluminum Oxide DBC Ceramic
Isolated Copper Baseplate
- High Surge Capability
- Simple Mounting

Circuit Diagram



Applications:

- DC Motor Control and Drives
- Lighting and Temperature Control
- Battery Charges
- Welders
- Power Converters

Maximum Rated

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
V_{RSM}/V_{DSM}	Non-Repetitive Reverse / Forward Blocking Voltage	$T_{VJ}=25^{\circ}\text{C}$	1900			V
V_{RRM}/V_{DRM}	Repetitive Reverse / Forward Blocking Voltage	$T_{VJ}=25^{\circ}\text{C}$	1800			V
I_{TAV}	Average Forward Current	$T_C=100^{\circ}\text{C}$, 180° Sine	200			A
$I_{T(RMS)}$	RMS Forward Current	180° sine	314			A
I_{TSM}	Surge Current	$T_{VJ}=25^{\circ}\text{C}$, $t_p=10\text{ms}$	7200			A
I^2t	I^2t - value	$T_{VJ}=25^{\circ}\text{C}$, $t_p=10\text{ms}$	259200			A^2s
di/dt	$V_D=2/3V_{DRM}$, $I_G=0.3\text{A}$, $t_p=200\mu\text{s}$, $di_G/dt=0.3\text{A}/\mu\text{s}$, $T_{VJ}=125^{\circ}\text{C}$				150	$\text{A}/\mu\text{s}$
dv/dt	$V_D=2/3V_{DRM}$, Gate Open, $T_{VJ}=125^{\circ}\text{C}$				1000	$\text{V}/\mu\text{s}$



Electrical Characteristics

Symbol	Description	Conditions		Min.	Typ.	Max.	Units
V _{TM}	Forward Voltage Drop	I _T =200A	T _{VJ} =25°C		1.20		V
		I _T =400A	T _{VJ} =25°C			1.55	V
I _{RRM} /I _{DRM}	Reverse Current / Drain Current	V _{R/D} =V _{RRM}	T _{VJ} =125°C			30	mA
P _{GM}	Maximum Peak Gate Power	t _p ≤5ms, T _{VJ} =T _{VJmax}				10	W
P _{G(AV)}	Maximum Average Gate Power	T _{VJ} =T _{VJmax}				3	W
V _{TO}	Threshold Voltage	T _{VJ} =T _{VJmax}				0.9	V
r _T	Slope Resistance	T _{VJ} =T _{VJmax}				1.0	mΩ
V _{GT}	Gate Trigger Voltage	V _D =12V, T _{VJ} =25°C				1.8	V
I _{GT}	Gate Trigger Current	V _D =12V, T _{VJ} =25°C		30		150	mA
V _{GD}	Gate Non-trigger Voltage	V _D =2/3V _{DRM} , T _{VJ} =125°C				0.25	V
I _{GD}	Gate Non-trigger Current	V _D =2/3V _{DRM} , T _{VJ} =125°C				10	mA
I _L	Latching Current	V _D =12V, I _G =1.2 I _{GT}				400	mA
I _H	Holding Current	V _D =12V, I _T =1A				250	mA
t _{gd}	Gate Controlled Delay Time	I _G =1A, di _G /dt=1A/μs, T _{VJ} =25°C				2	μs
t _q	Turn-off Time	T _{VJ} =125°C			150		μs

Thermal Characteristics

Symbol	Description	Min.	Typ.	Max.	Units
R _{th(j-c)}	Thyristor Thermal Resistance: Junction-to-Case (per Thyristor)			0.11	°C/W
R _{th(c-s)}	Case-to-Sink Thermally (Conductive Grease Applied)			0.07	°C/W



Module

Symbol	Description	Min.	Typ.	Max.	Units
V_{ISOL}	Isolation Voltage (All Terminals Shorted)	AC 50Hz, RMS, 1minute, $I_{ISOL} \leq 1mA$		2500	V
Internal Isolation		Al_2O_3			
L_{sCE}	Stray Inductance Module		20		nH
T_{VJ}	Maximum Junction Temperature			125	°C
T_{VJOP}	Operating Junction Temperature Range	-40		125	°C
T_{stg}	Storage Temperature	-40		125	°C
CTI	Comparative Tracking Index	200			
M	Power Terminals Screw:M6	3.0		5.0	N·m
M	Mounting Screw:M6	4.0		6.0	N·m
G	Weight		155		g

Ordering Information Table

Device code	RS	200	HF	180	T1W	H
	①	②	③	④	⑤	⑥

- ① - SCR Module
- ② - Rated Current (200=200A)
- ③ - Circuit Configuration (Half Bridge)
- ④ - Rated Voltage (180=1800V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)

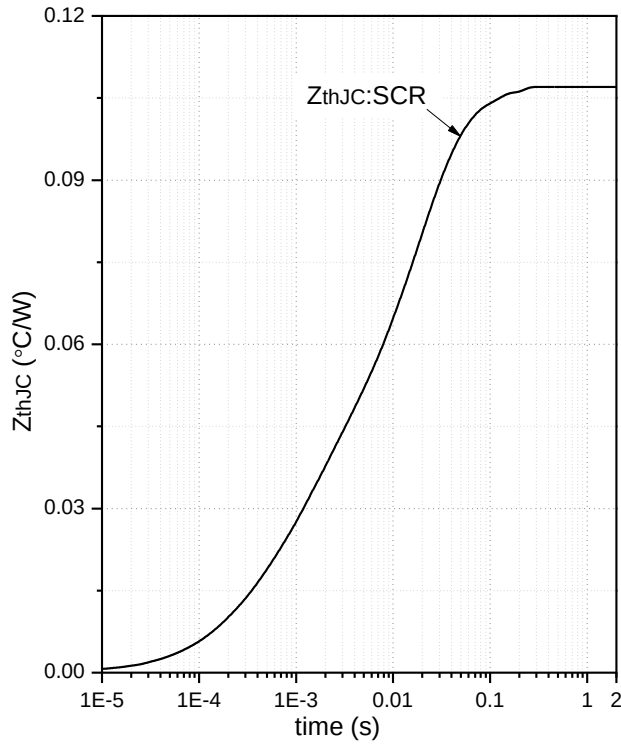


Fig.1 Transient Thermal Impedance

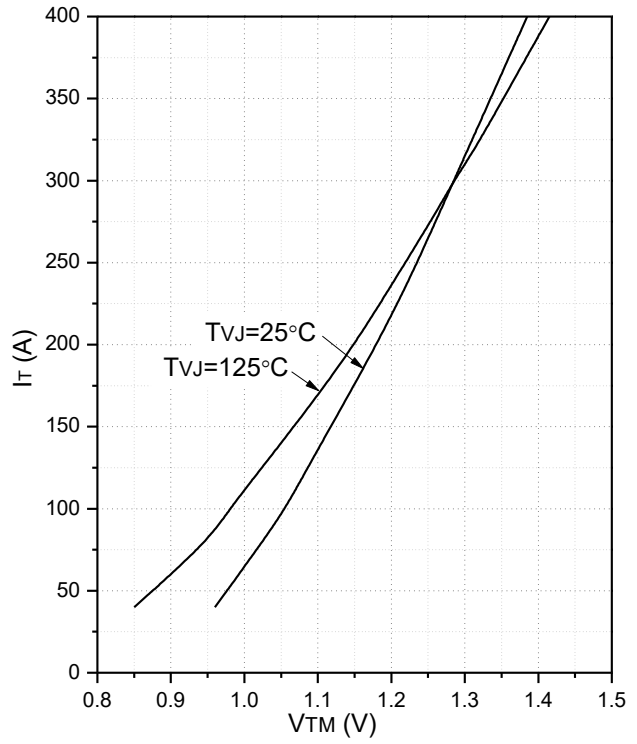


Fig.2 Forward Characteristics

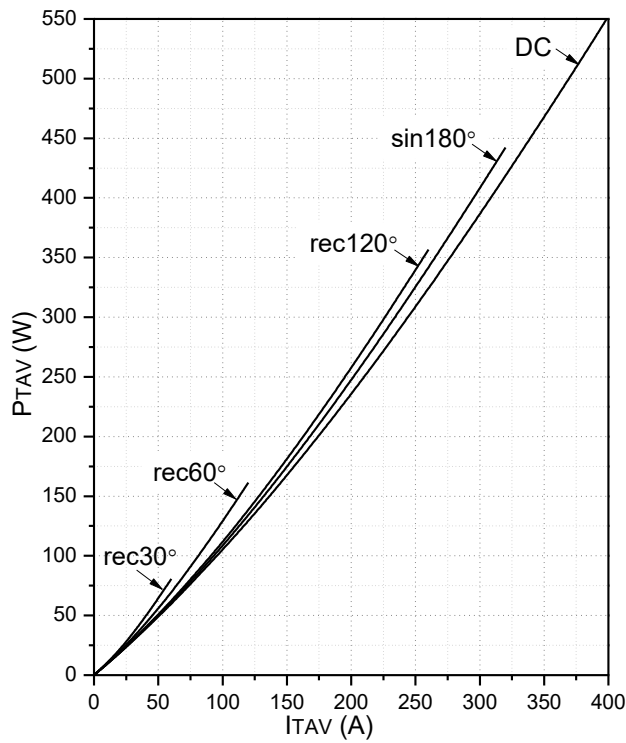


Fig.3 Power Dissipation

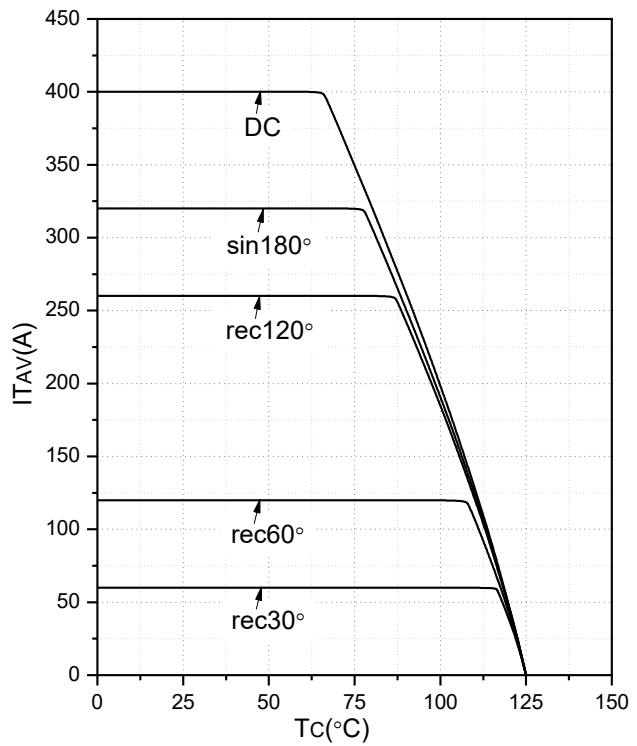
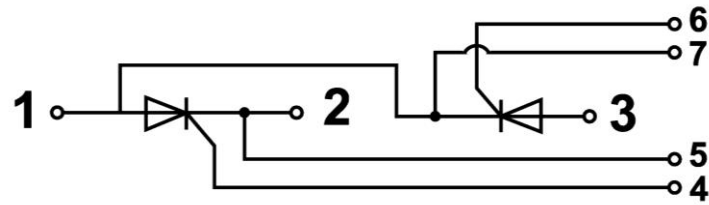


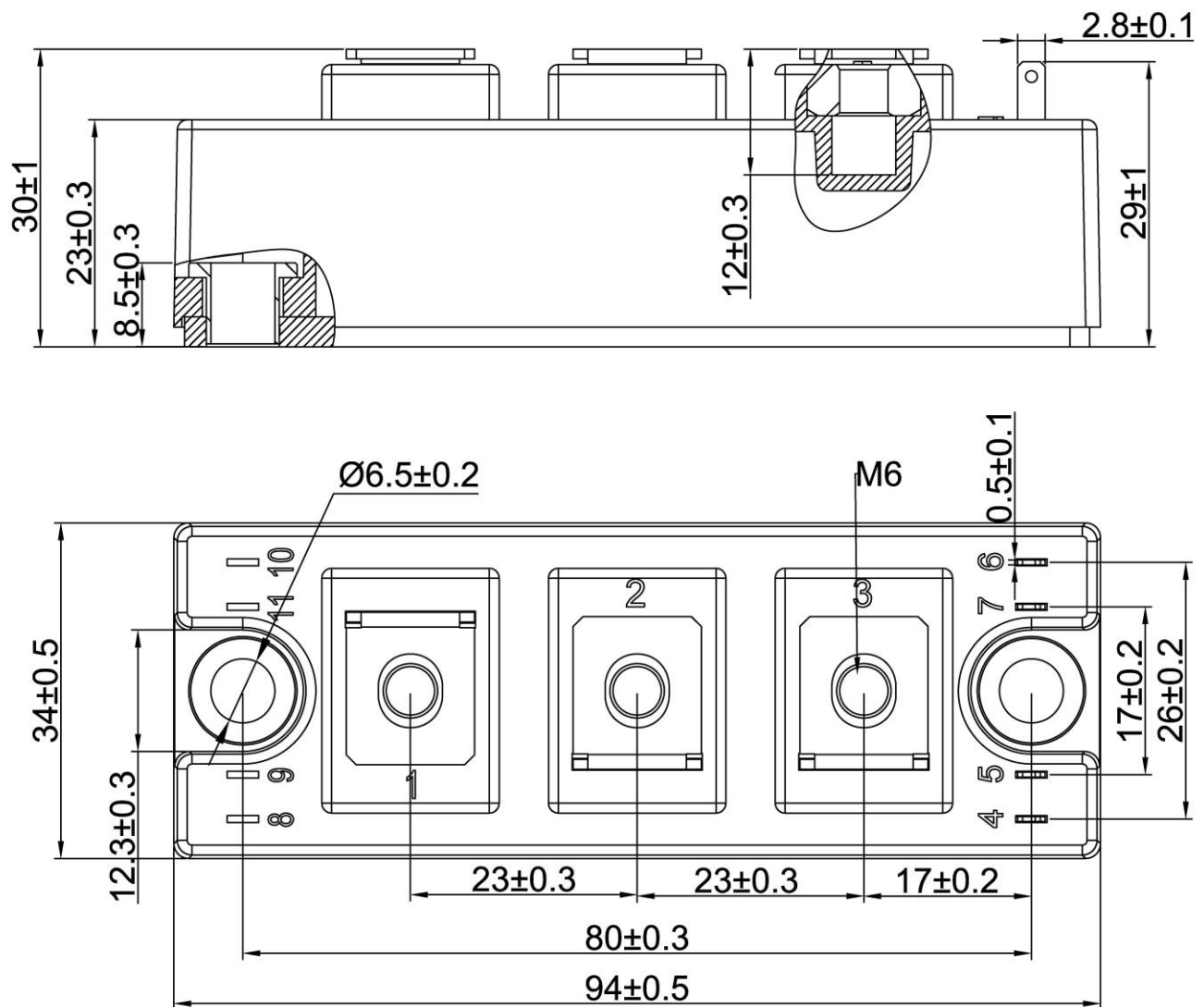
Fig.4 Forward Current Derating Curve



Internal Circuit:



Package Outline (Unit: mm):





Revision	Notes
A	Final Version
B	Update Package Outline

Announcement

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