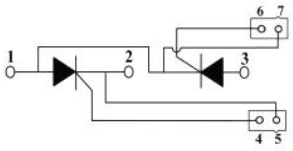
Thyristor Module

V_{RRM} / V_{DRM}	800 to1200V
I_{TAV}	200 Amp
I_{TRMS}	314 Amp



HW-9434

Features

- Aluminum oxide DBC
- Glass passivated chip
- Thyristor for line frequency
- Long-term stability

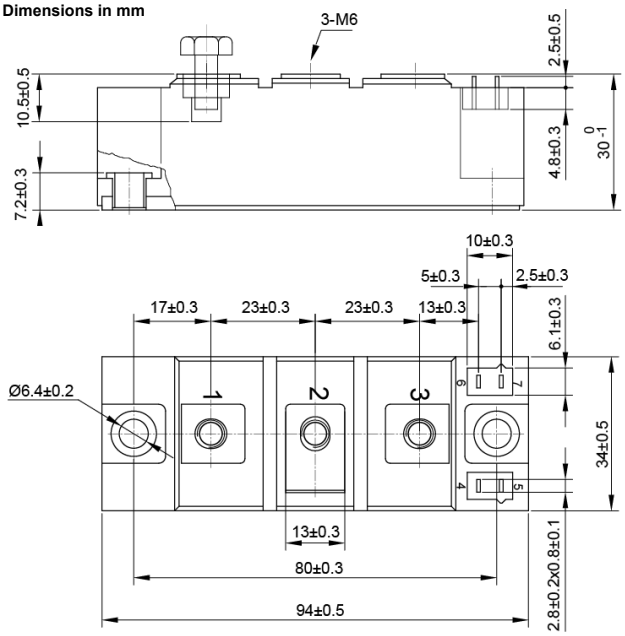
Applications

- Power converters
- Lighting control
- DC motor control and drives
- Heat and temperature control

Module Type

Type	V_{RRM} / V_{DRM}	V_{RSM}
DATTD200-08SB	800V	900V
DATTD200-12SB	1200V	1300V

Dimensions in mm



■ Maximum Ratings

Symbol	Item	Conditions	Values	Unit
I_{TAV}	Average On-state Current	180° Conduction Sin Half Wave, T_c = 82℃	200	A
I_{TRMS}	RMS On-state Current		314	A
I_{TSM}	Surge On-state Current	T_j = 25℃, t = 50Hz(10ms), V_R = 0V	6300	A
I^2t	Circuit Fusing Consideration	t = 10ms T_j =25℃	198450	A^2s
V_{ISO}	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	3000	V
T_j	Operating Junction Temperature		-40 to + 125	℃
T_{stg}	Storage Temperature		-40 to + 125	℃
M_t	Mounting Torque	To Terminals(M6)	5±15%	N·m
M_s		To Heatsink(M6)	5±15%	
Weight	Module (Approximately)		180	g
di/dt	Critical Rate of Rise of On-state Current, Max	T_j= 125℃, V_D = 1/2V_{DRM}, I_G = 150mA, di_G/dt = 0.1A/μs	150	A/μs

■ Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Thyristor)	0.13	℃/W
$R_{th(c-s)}$	Thermal Impedance, Max	Case to Heat Sink	0.05	℃/W

■ Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{TM}	Peak On-State Voltage, Max	T_j = 25℃, I_T = 600A	-	-	1.60	V
I_{DRM} /I_{RRM}	Repetitive Peak Reverse Current, Max /Repetitive Peak Off-state Current, Max	T_j = 125℃, $V_R = V_{RRM}$, $V_D = V_{DRM}$	-	-	35	mA
V_{GT}	Gate Trigger Voltage, Max	T_j = 25℃, V_D = 6V	-	-	3.0	V
I_{GT}	Gate Trigger Current, Max	T_j = 25℃, V_D = 6V	-	-	150	mA
V_{GD}	Gate Non-Trigger Voltage, Max	T_j = 125℃, $V_D = 2/3V_{DRM}$	-	-	0.25	V
I_L	Latching Current	T_j = 25℃	-	200	-	mA
I_H	Holding Current	T_j = 25℃	-	150	-	mA
t_{gt}	Turn On Time	T_j = 25℃	-	3	-	μs
dv/dt	Critical Rate of Rise of Off-state Voltage, Min	T_j = 125℃, $V_D = 2/3V_{DRM}$ Linear Voltage Rise	1000			V/μs
V_{TO}	Threshold Voltage, for power loss calculation only	T_j = 125℃	0.86			V
r_T	Slope Resistance, for power loss calculation only	T_j = 125℃	1.3			mΩ

Performance Curves

Fig1. Gate Trigger Characteristics

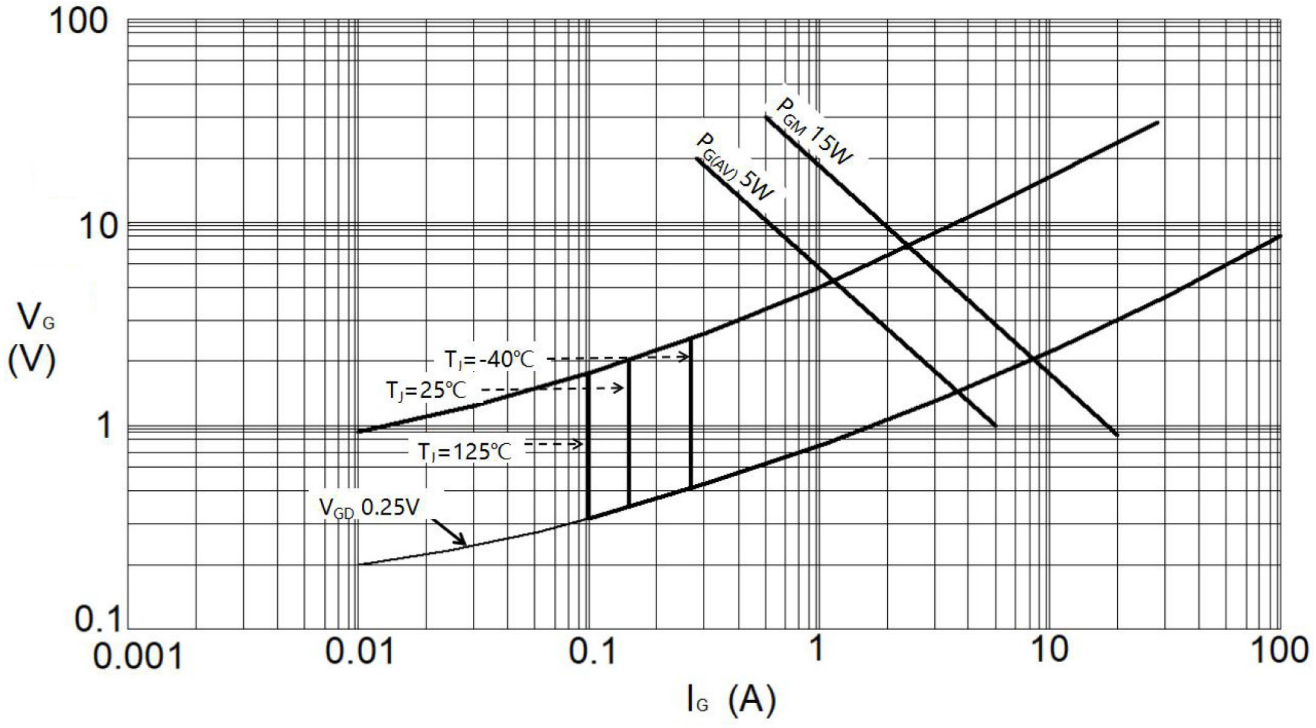


Fig2. Power Dissipation

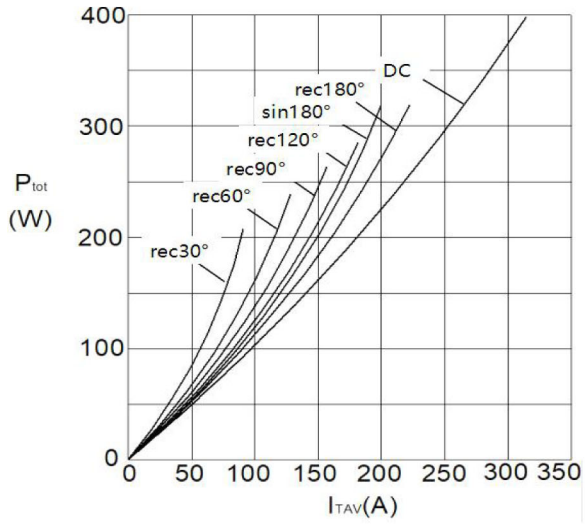


Fig3. Forward Current Derating Curve

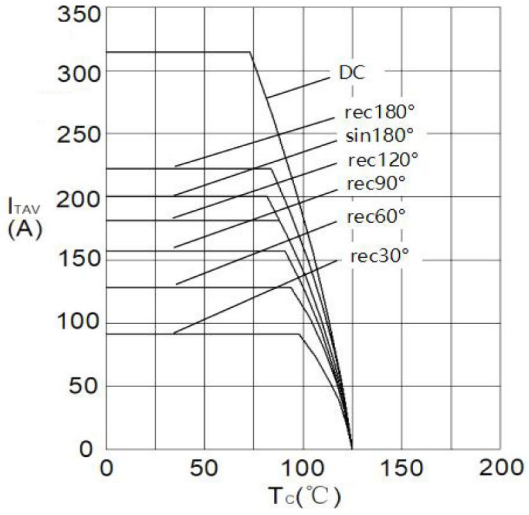


Fig4. Forward Characteristics

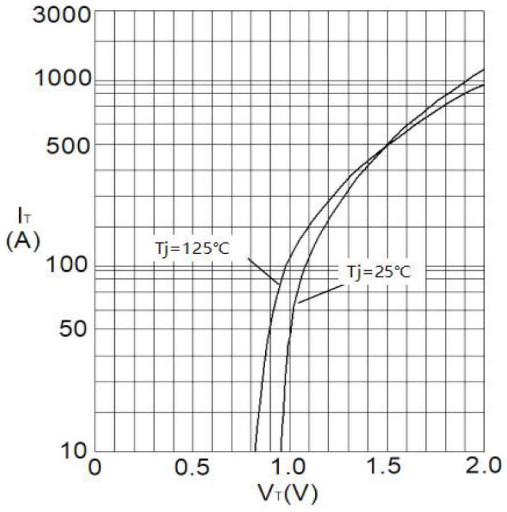


Fig5. Transient Thermal impedance

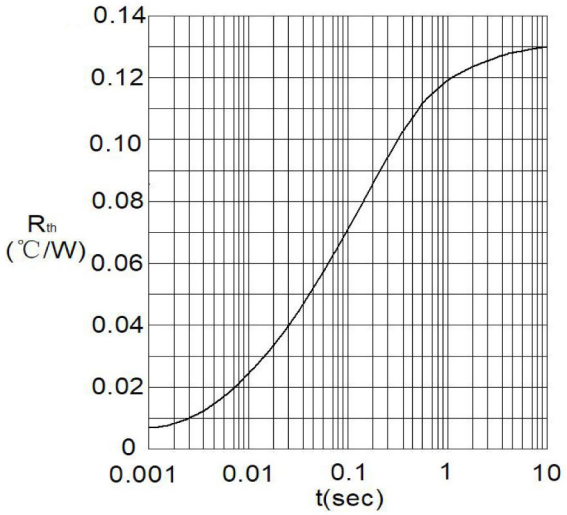
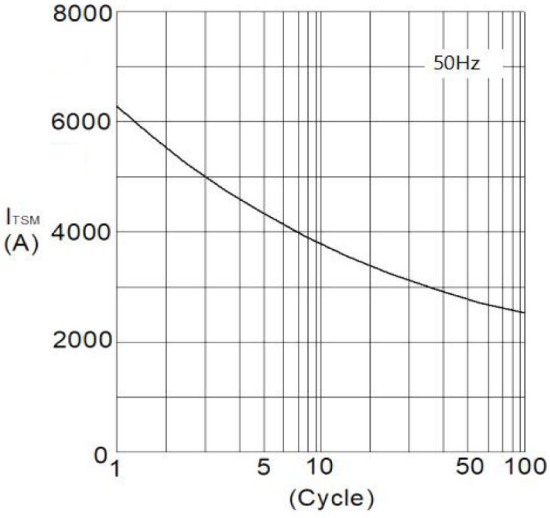


Fig6. Max Non-Repetitive Forward Surge Current



Disclaimer

DACO Semiconductor reserves the right to make modifications, enhancements, improvements, corrections, or other changes to this document and any product described herein without prior notice.For the most up-to-date version, please visit our website.

DACO Semiconductor makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does DACO Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any liability, including without limitation special, consequential or incidental damages.

Purchasers are responsible for its products and applications using DACO Semiconductor products, including compliance with all laws, regulations, and safety requirements or standards, regardless of any support or application information provided by DACO Semiconductor. “Typical” parameters that may be provided in DACO Semiconductor datasheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including “Typical” must be validated for each customer application by the customer’s technical experts.

DACO Semiconductor products are not designed, authorized, or warranted to be suitable for use in life support, life-critical or safety-critical systems, or equipment, nor in applications where failure or malfunction of DACO Semiconductor’s product can reasonably be expected to result in personal injury, death or severe property or environmental damage. DACO Semiconductor accepts no liability for the inclusion and/or use of DACO Semiconductor’s products in such equipment or applications and therefore such inclusion and/or use is at the customer’s own risk.

Purchasers who buy or use DACO Semiconductor products for any unintended or unauthorized applications are required to indemnify and absolve DACO Semiconductor, its suppliers, and distributors from any claims, costs, damages, expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that DACO Semiconductor was negligent regarding the design or manufacture of the part.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage and retrieval system, or otherwise, without the prior written permission of DACO Semiconductor Co., Ltd.