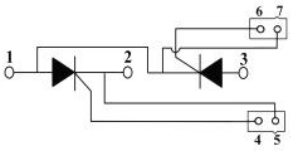
DACO

DATTD200-16SB-DATTD200-22SB

Thyristor Module

V_{RRM} / V_{DRM} 1600 to 2200V
I_{TAV} 200 Amp



HW-9434

Features

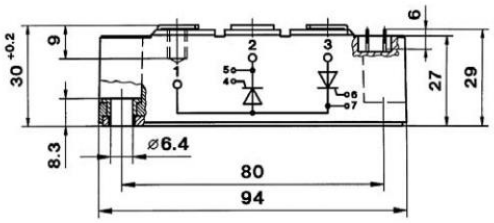
- Heat transfer through aluminum oxide DBC Ceramic isolated metal baseplate
- Industrial standard package
- Thick copper baseplate
- 2500 V_{RMS} isolating voltage

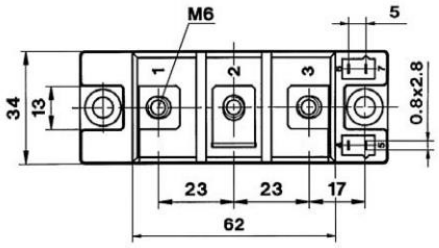
Applications

- Power converters
- Lighting control
- DC motor control and drives
- Temperature control

Module Type

Type	V_{RRM} / V_{DRM}	V_{RSM}
DATTD200-16SB	1600V	1700V
DATTD200-18SB	1800V	1900V
DATTD200-20SB	2000V	2100V
DATTD200-22SB	2200V	2300V





Dimensions in mm

■ Maximum Ratings

Symbol	Item	Conditions	Values	Unit
I_{TAV}	Average On-state Current	180° Conduction Sin Half Wave, T_c = 85℃	200	A
I_{TSM}	Surge Forward Current	T_j = 45℃, t = 10ms T_j = 125℃, t = 10ms	6000 4800	A
I^2t	Maximum I^2t for fusing	T_j = 45℃, t = 10ms T_j = 125℃, t = 10ms	180000 115200	A^2s
V_{ISO}	Isolation Breakdown Voltage	AC 50Hz ; R.M.S; 1min AC 50Hz ; R.M.S; 1sec	2500 3500	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)		160	g
di/dt	Maximum non-repetitive rate of rise of turned on current	T_j =25℃ from 0.67V_{DRM} , I_{TM}= π × $I_{T(AV)}$,Ig=500mA tr<0.5us tp>6us	150	A/μs

■ Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Thyristor)	0.15	℃/W
$R_{th(c-s)}$	Thermal Impedance, Max	Case to Heat Sink	0.075	℃/W

■ Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{TM}	Peak On-State Voltage, Max	T_j = 25℃, I_{TM}= π × $I_{T(AV)}$	-	-	1.65	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}	-	-	20	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_{GD}	Gate Current that will not trigger, Max	T_j = 125℃, V_D = 2/3V_{DRM}	-	-	6	mA
I_L	Latching Current	T_j = 25℃, I_G = 1.2I_{GT}	-	250	600	mA
I_H	Holding Current	T_j = 25℃, I_T = 1A	-	200	300	mA
t_{gd}	Gate Controlled Delay Time	T_j = 25℃,I_G=1A ,di$_G$/dt=1A/us	1			μs
dv/dt	Maximum critical rate of rise of	T_j = 125℃, V_D = 2/3V_{DRM}	1000			V/μs
V_{TO}	Threshold Voltage, for power loss calculation only	T_j = 125℃	-	-	0.9	V
r_T	Slope Resistance, for power loss calculation only	T_j = 125℃	-	-	2.0	mΩ

Performance Curves

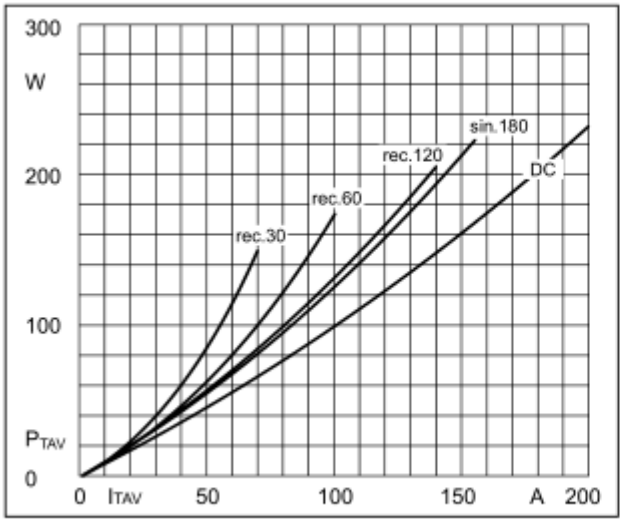


Fig1. Power dissipation

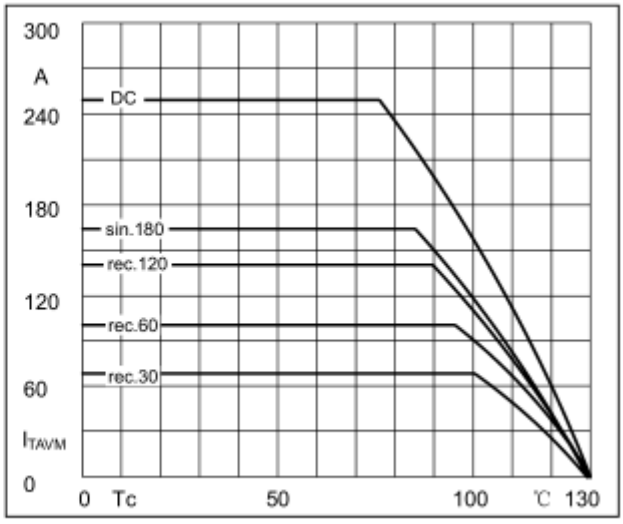


Fig2.Forward Current Derating Curve

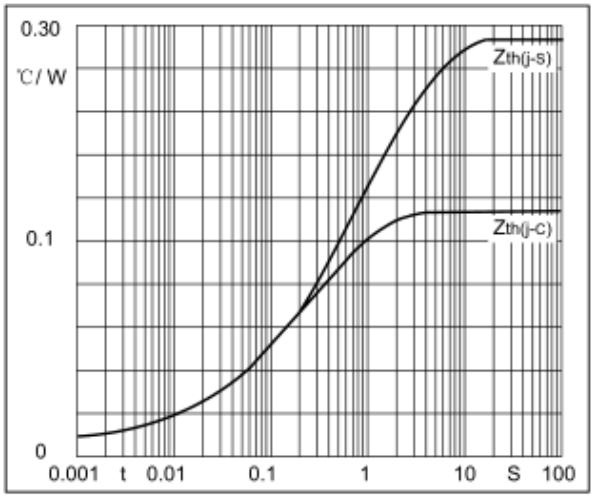


Fig3. Transient thermal impedance

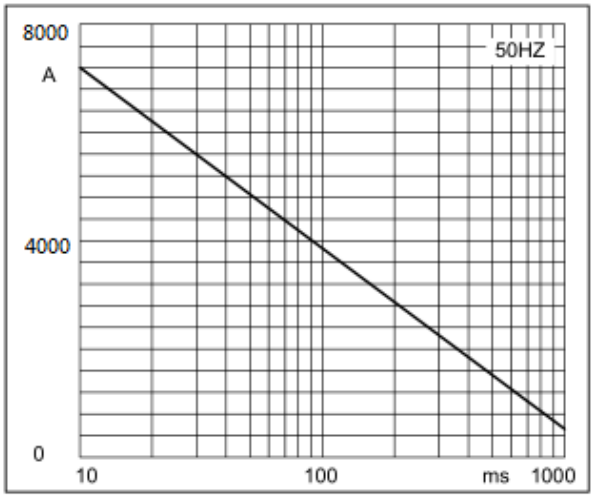


Fig4. Max Non-Repetitive Forward Surge Current

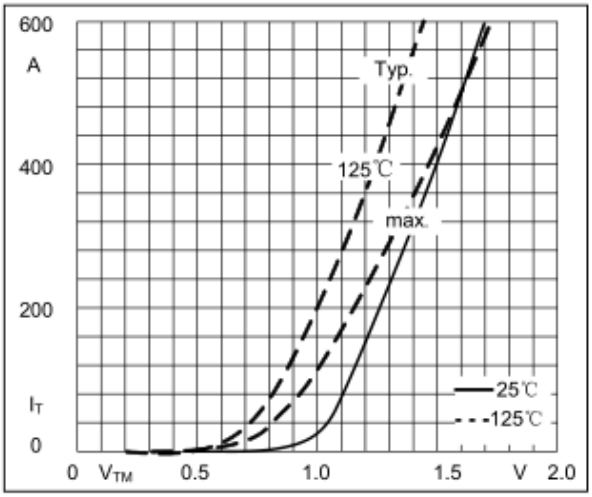


Fig5. Forward Characteristics

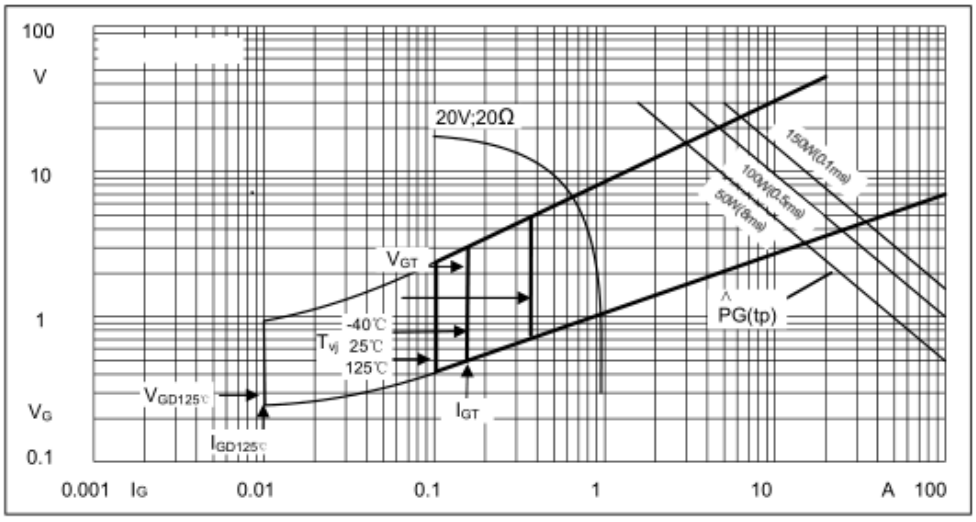


Fig6. Gate trigger Characteristics

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.