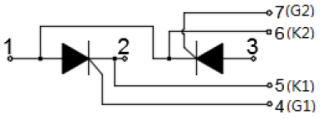
DACO®

DATTN060-12ST - DATTN060-22ST

Thyristor Module

V_{RRM} / V_{DRM} 1200 to 2200V
I_{TAV} 60 Amp



TO-240AA

Features

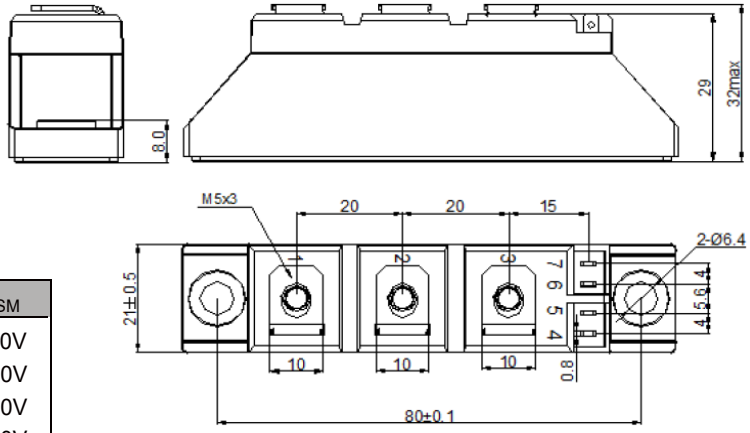
- Heat transfer through aluminum oxide DBC Ceramic isolated metal baseplate
- Industrial standard package
- Thick copper baseplate
- 2500 V_{RMS} isolating voltage

Applications

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

Module Type

Type	V_{RRM} / V_{DRM}	V_{RSM}
DATTN060-12ST	1200V	1300V
DATTN060-16ST	1600V	1800V
DATTN060-18ST	1800V	1900V
DATTN060-22ST	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℃	60	A
I_{TSM}	Surge Forward Current	T_j = 45℃, t = 10ms T_j = 125℃, t = 10ms	1500 1250	A
I^2t	Maximum I^2t for fusing	T_j = 45℃, t = 10ms T_j = 125℃, t = 10ms	11000 8000	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(M5)	3±15%	N·m
M_s		To Heatsink(M6)	5±15%	
Weight	Module (Approximately)		100	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)	0.57	℃/W
$R_{th(c-s)}$	Thermal Impedance, Max	Case to Heat Sink	0.15	℃/W

■ Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{TM}	Peak On-State Voltage, Max	T_j = 25℃, I_T = 60A	-	-	1.25	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}	-	-	15	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}	-	150	350	mA
I_H	Holding Current	T_j = 25℃, I_T = 1A	-	150	200	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℃	-	-	0.86	V
r_T	Slope Resistance, for power loss calculation only	T_j = 125℃	-	-	2.0	mΩ

Performance Curves

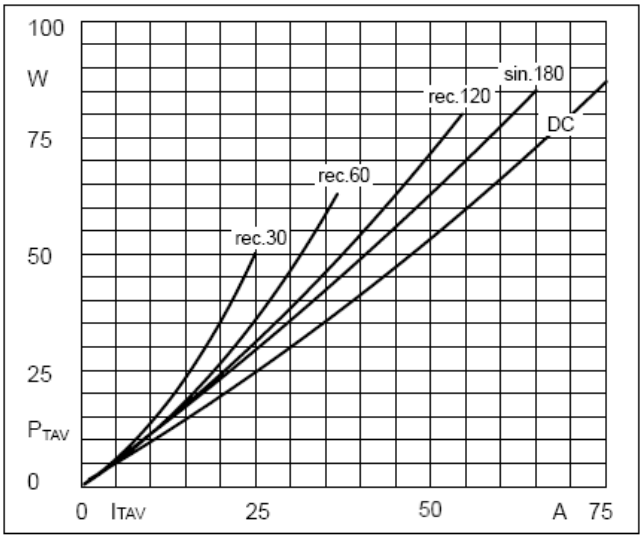


Fig1. Power dissipation

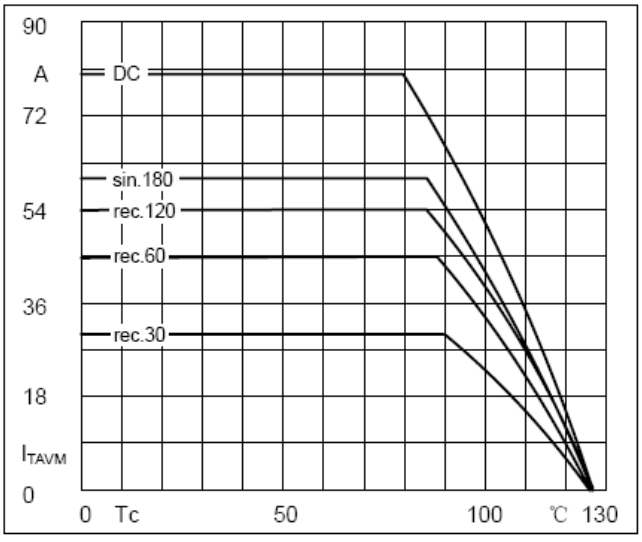


Fig2.Forward Current Derating Curve

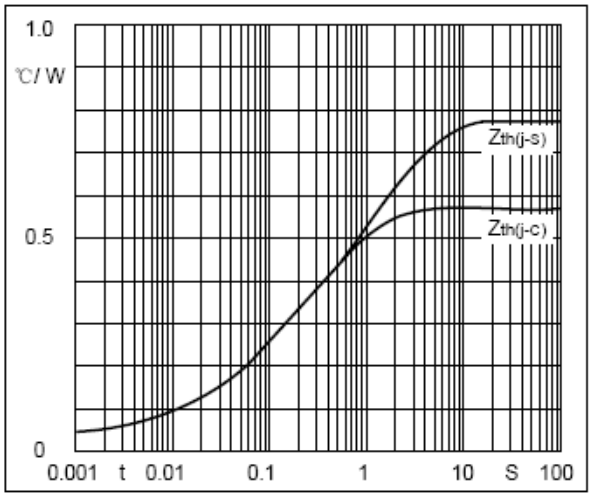


Fig3. Transient thermal impedance

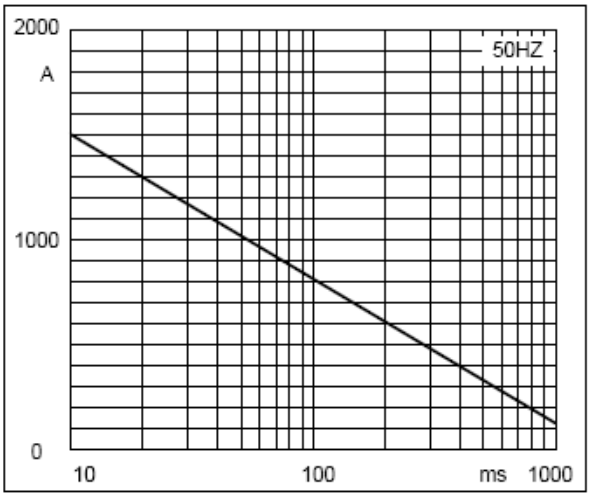


Fig4. Max Non-Repetitive Forward Surge Current

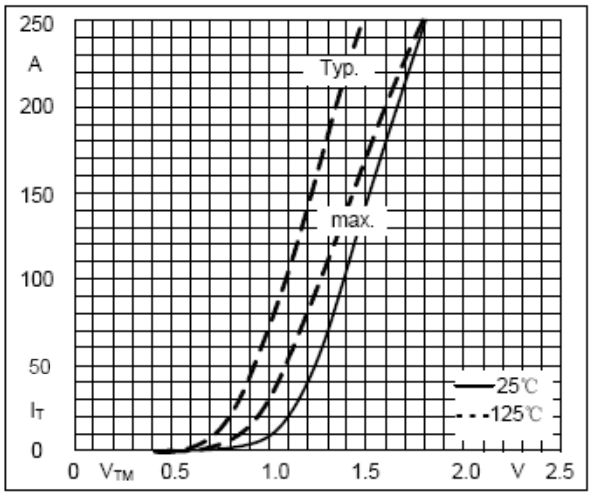


Fig5. Forward Characteristics

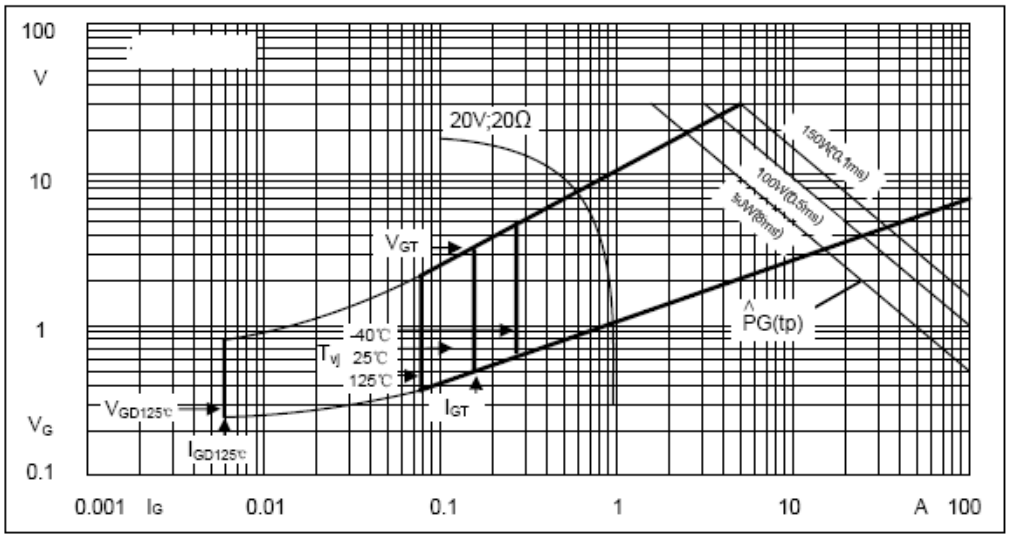


Fig6. Gate trigger Characteristics

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