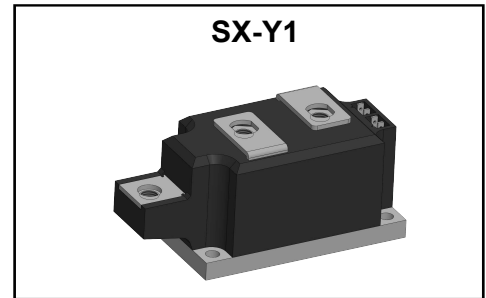
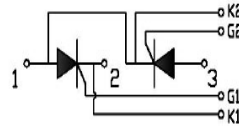


Thyristor Module

V_{RRM} / V_{DRM} 800 to 1800V

I_{TAV} 330 Amp

I_{TRMS} 520 Amp



Features

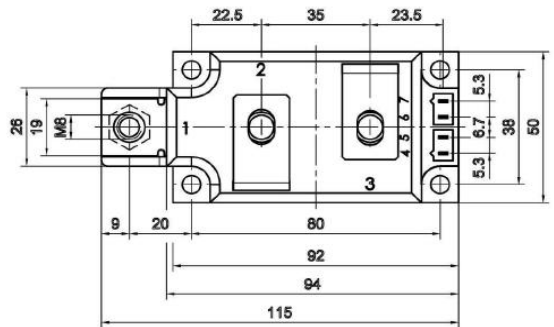
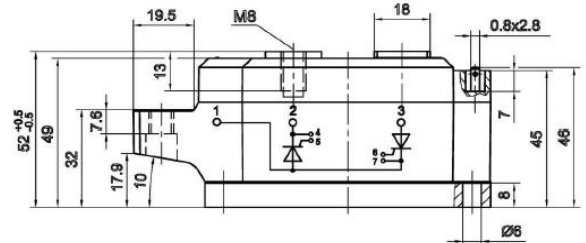
- Aluminum nitride(AIN) ceramic
- Precious metal pressure contacts for high reliability
- Long-term stability

Applications

- Input converters for AC inverter drives
- AC motor softstarters
- DC motor control and drives
- Applied in temperature control instruments

Module Type

Type	V_{RRM}	V_{RSM}
DATTD330-08SX	800V	900V
DATTD330-12SX	1200V	1300V
DATTD330-16SX	1600V	1700V
DATTD330-18SX	1800V	1900V



Dimensions in mm
Unspecified dimension tolerance $\pm 0.5\text{mm}$

Maximum Ratings

Symbol	Item	Conditions	Values	Unit
I_{TAV}	Average On-state Current	180° Conduction Sin Half Wave, $T_c = 80^\circ\text{C}$	330	A
I_{TRMS}	RMS On-state Current		520	A
I_{TSM}	Surge On-state Current	$T_j = 25^\circ\text{C}$, $t = 50\text{Hz}(10\text{ms})$, $V_R = 0\text{V}$	9200	A
I^2t	Circuit Fusing Consideration	$t = 10\text{ms}$ $T_j = 25^\circ\text{C}$	423000	A^2s
V_{ISO}	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	2500	V
T_j	Operating Junction Temperature		-40 to + 125	$^\circ\text{C}$
T_{stg}	Storage Temperature		-40 to + 125	$^\circ\text{C}$
M_t	Mounting Torque	To Terminals(M8)	$9 \pm 15\%$	N·m
M_s		To Heatsink(M6)	$5 \pm 15\%$	
Weight	Module (Approximately)		700	g
di/dt	Critical Rate of Rise of On-state Current, Max	$T_j = 125^\circ\text{C}$, $V_D = 1/2V_{DRM}$, $I_G = 180\text{mA}$, $di_G/dt = 0.1\text{A}/\mu\text{s}$	150	$\text{A}/\mu\text{s}$

Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Thyristor)	0.09	$^\circ\text{C}/\text{W}$
$R_{th(c-s)}$	Thermal Impedance, Max	Case to Heat Sink	0.04	$^\circ\text{C}/\text{W}$

Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{TM}	Peak On-State Voltage, Max	$T_j = 25^\circ\text{C}$, $I_T = 1000\text{A}$	-	-	1.75	V
I_{DRM} $/I_{RRM}$	Repetitive Peak Reverse Current, Max /Repetitive Peak Off-state Current, Max	$T_j = 125^\circ\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$	-	-	50	mA
V_{GT}	Gate Trigger Voltage, Max	$T_j = 25^\circ\text{C}$, $V_D = 6\text{V}$	-	-	2.5	V
I_{GT}	Gate Trigger Current, Max	$T_j = 25^\circ\text{C}$, $V_D = 6\text{V}$	-	-	180	mA
V_{GD}	Gate Non-Trigger Voltage, Max	$T_j = 125^\circ\text{C}$, $V_D = 2/3V_{DRM}$	-	-	0.25	V
I_L	Latching Current	$T_j = 25^\circ\text{C}$	-	400	-	mA
I_H	Holding Current	$T_j = 25^\circ\text{C}$	-	180	-	mA
t_{gt}	Turn On Time	$T_j = 25^\circ\text{C}$	-	3	-	μs
dv/dt	Critical Rate of Rise of Off-state Voltage, Min	$T_j = 125^\circ\text{C}$, $V_D = 2/3V_{DRM}$ Linear Voltage Rise	1000			V/ μs
V_{T0}	Threshold Voltage, for power loss calculation only	$T_j = 125^\circ\text{C}$	0.85			V
r_T	Slope Resistance, for power loss calculation only	$T_j = 125^\circ\text{C}$	0.66			m Ω

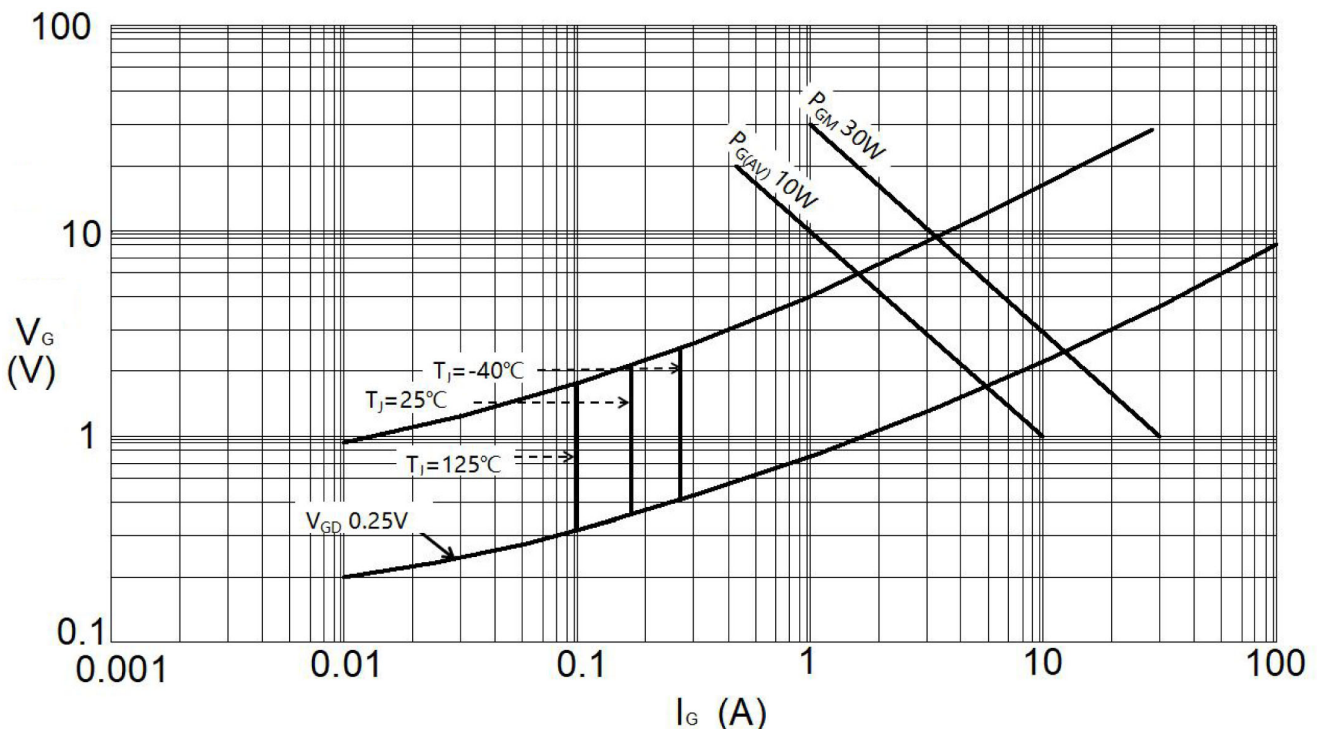
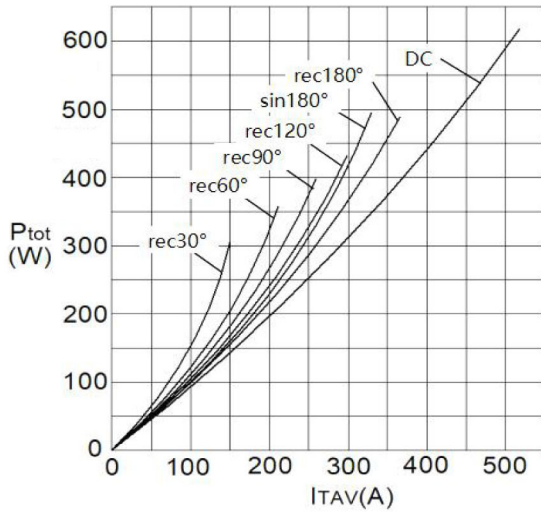
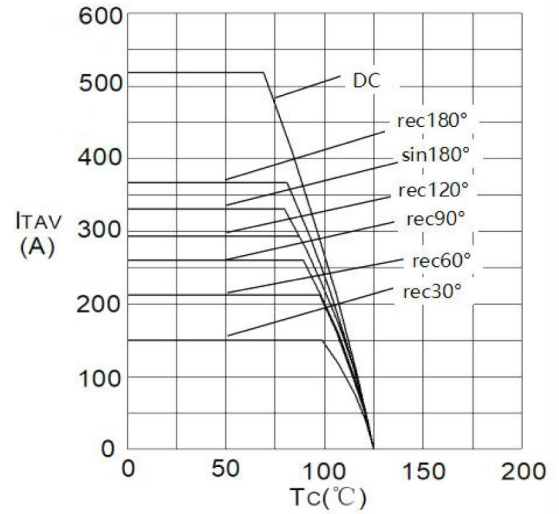
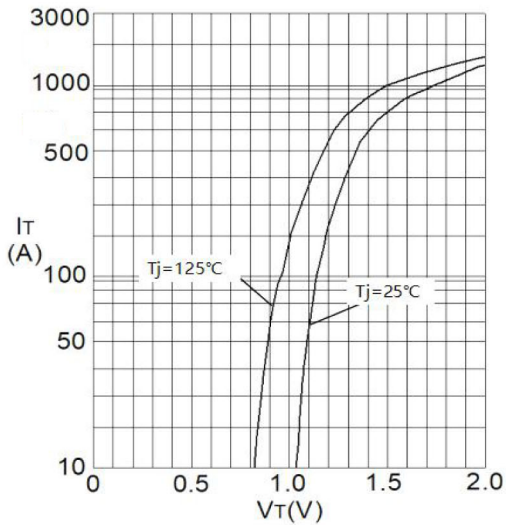
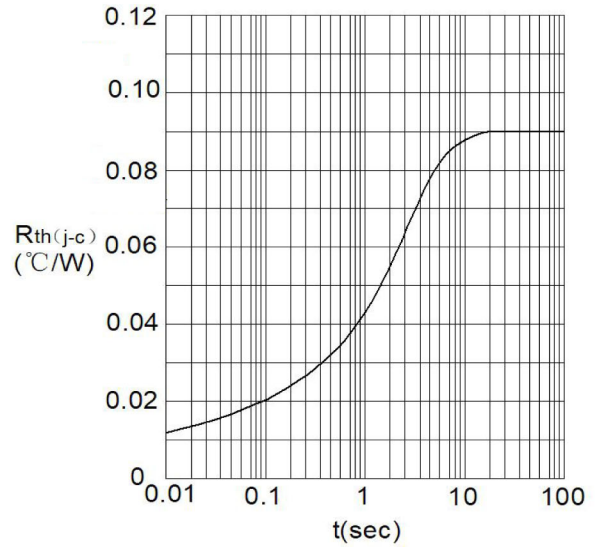
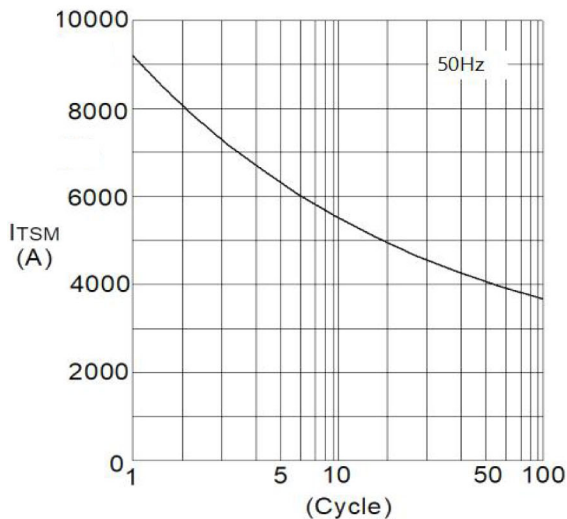
Performance Curves
Fig1. Gate Trigger Characteristics


Fig2. Power Dissipation

Fig3. Forward Current Derating Curve

Fig4. Forward Characteristics

Fig5. Transient Thermal Impedance

Fig6. Max Non-Repetitive Forward Surge Current


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