



SCOMES

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SCT4050

Power Rectifier Thyristor



Key Parameters

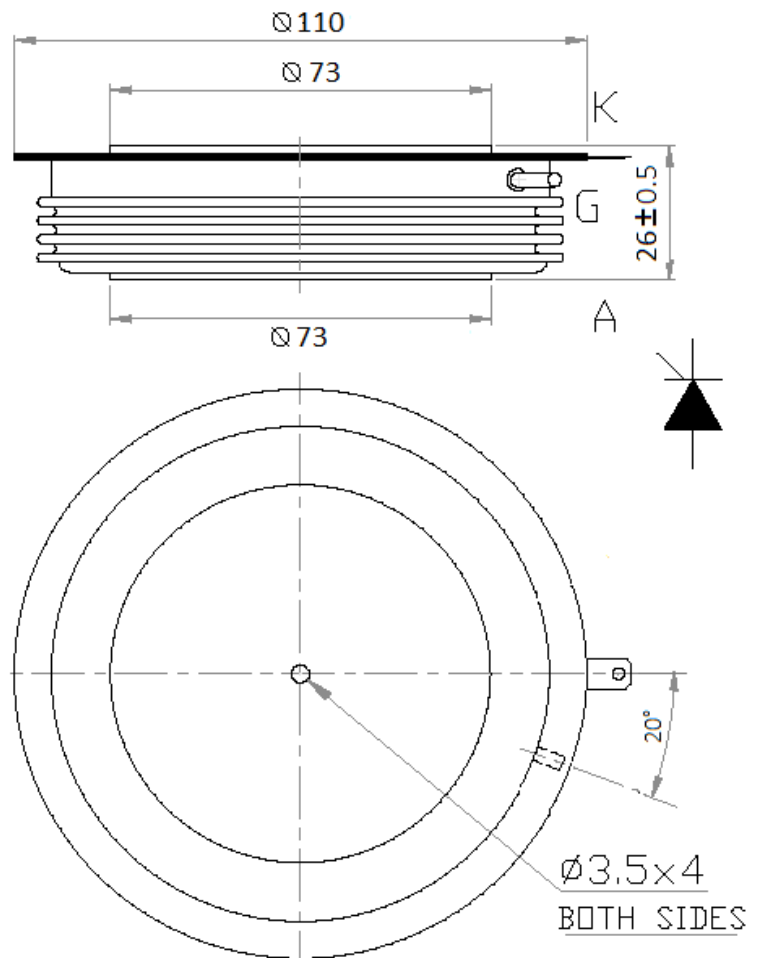
V_{DRM} / V_{RRM}	= 2200V
$I_{T(AV)}$	= 4050A
I_{TSM}	= 62kA
$V_{T(TO)}$	= 0.92V
r_T	= 0.090m Ω

Features

- Full blocking capability over wide temperature range
- High Surge current capability
- Hermetic metal case with ceramic insulator

Applications

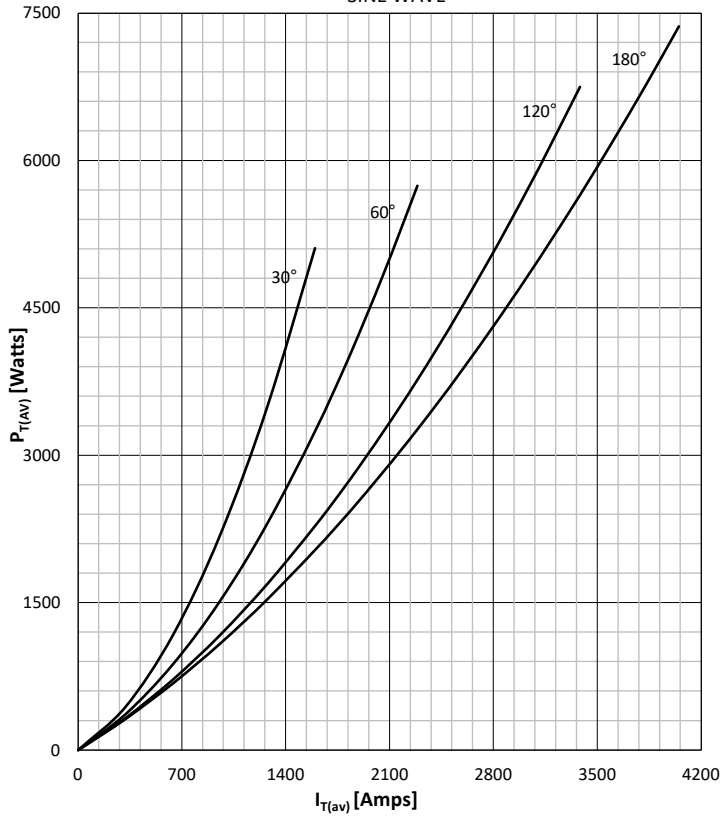
- Battery Chargers
- Medical Equipment
- UPS
- Power Supplies
- Motor control
- Controlled Rectifiers
- Transportation
- Induction Heating
- Welding



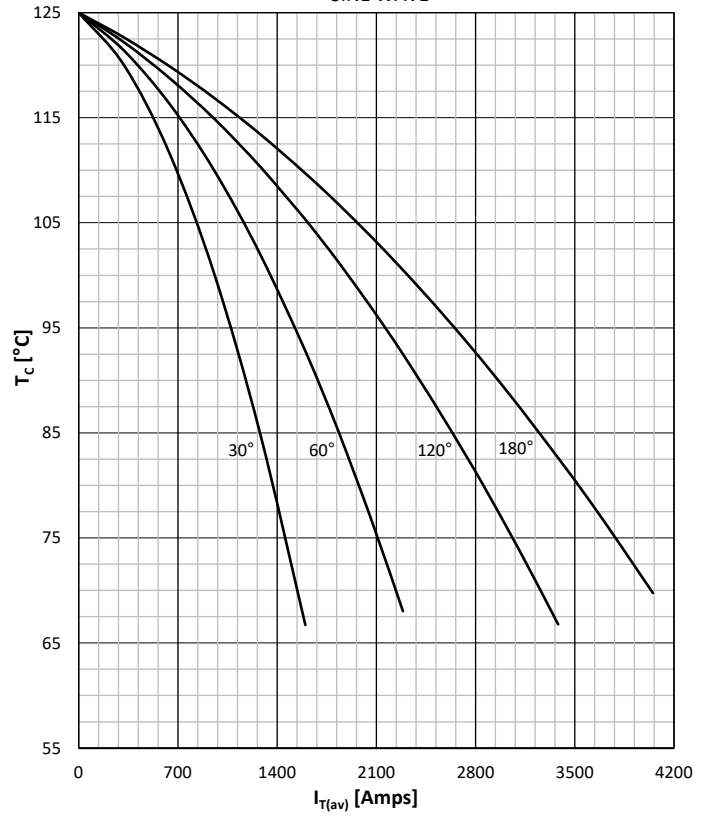
Symbol	Characteristic	Conditions	T _j [°C]	Value	Unit
BLOCKING					
V _{RRM}	Repetitive peak reverse voltage		125	1200 - 2200	V
V _{RSM}	Non-repetitive peak reverse voltage		125	1300 - 2300	V
V _{DRM}	Repetitive peak off-state voltage		125	1200 - 2200	V
I _{RRM}	Repetitive peak reverse current	V = V _{RRM}	125	200	mA
I _{DRM}	Repetitive peak off-state current	V = V _{DRM}	125	200	mA
CONDUCTING					
I _{T(AV)}	Mean on state current	180° sin ,50 Hz, T _c =70°C, Double side cooled		4050	A
I _{RMS}	RMS on-state current	T _c =70°C, Double side cooled		6358	A
I _{TSM}	Surge on-state current	Sine wave, 10 ms Without reverse voltage	25	62000	A
			125	60000	A
I ² t	I ² t	Sine wave, 10 ms Without reverse voltage	25	19220 x 10 ³	A ² s
			125	18000 x 10 ³	A ² s
V _T	On-state voltage	On-state current = 2000A	25	1.10	V
V _{T(TO)}	Threshold voltage		125	0.92	V
r _T	On-state slope resistance		125	0.090	mΩ
SWITCHING					
di/dt	Critical rate of rise of on-state current Non-repetitive (f=1Hz)	From 75%V _{DRM} , Gate 10V 5Ω, di _G /dt≥1A/ μs	125	200	A/μs
dv/dt	Critical rate of rise of off-state voltage	V _{DR} = 67%V _{DRM}	125	500	V/μs
GATE					
I _{gt}	Gate trigger current	V _D =6V	25	300	mA
V _{gt}	Gate trigger voltage	V _D =6V	25	3.0	V
I _H	Holding current	V _D =6V, gate open circuit	25	300	mA
I _L	Latching current	V _D =6V	25	1500	mA
MOUNTING					
R _{th(j-c)}	Thermal impedance, DC	Junction to case, Double side cooled		0.0075	°C/W
R _{th(j-c)}	Thermal impedance, rec120°	Junction to case, Double side cooled		0.0086	°C/W
R _{th(c-h)}	Thermal impedance	Case to heatsink, Double side cooled		0.002	°C/W
T _j	Max. junction temperature			125	°C
T _{stg}	Storage temperature			-40 125	°C
M	Clamping Force			40 - 50	kN
W	Weight (Approx.)			1150	gm

DISSIPATION CHARACTERISTICS

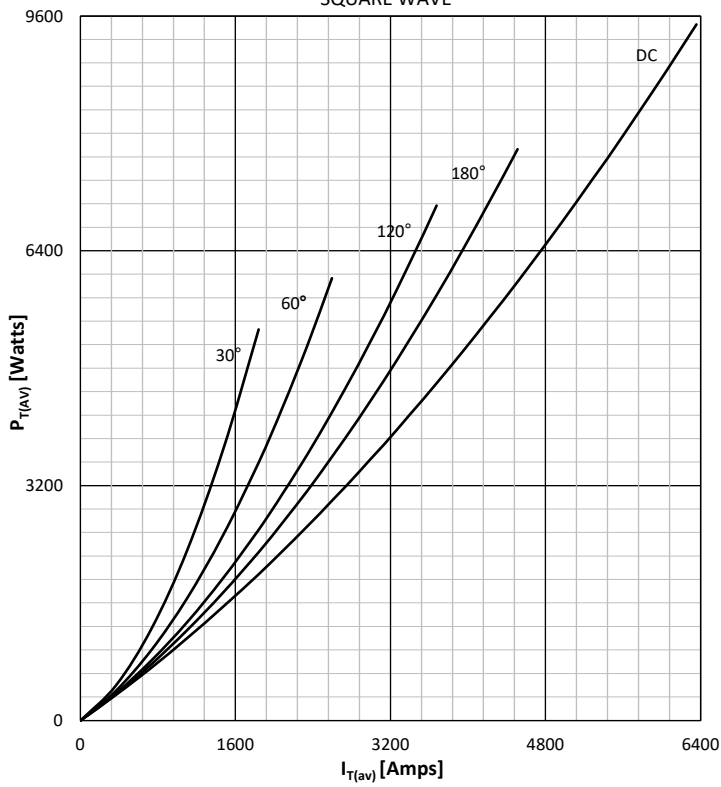
SINE WAVE


ON STATE CURRENT DERATING CURVE

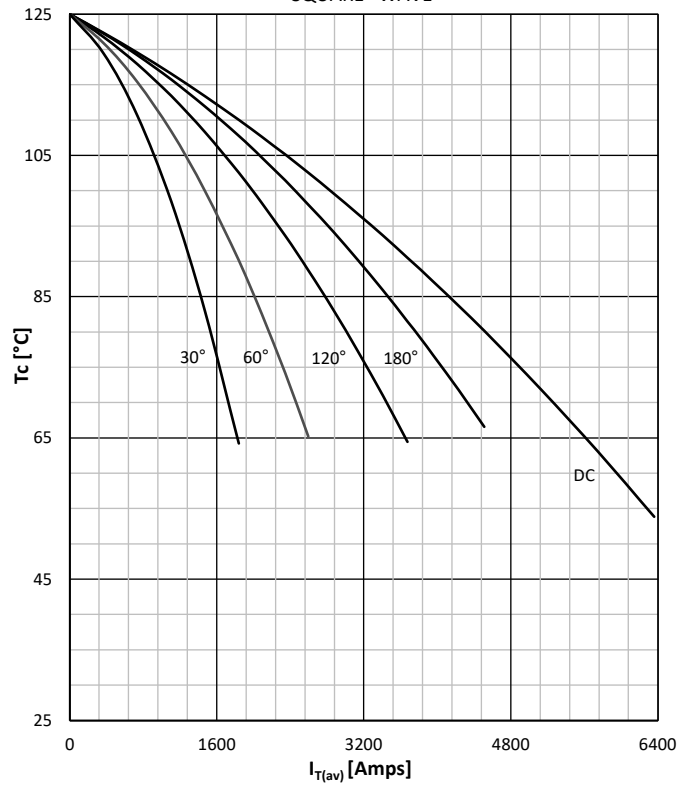
SINE WAVE

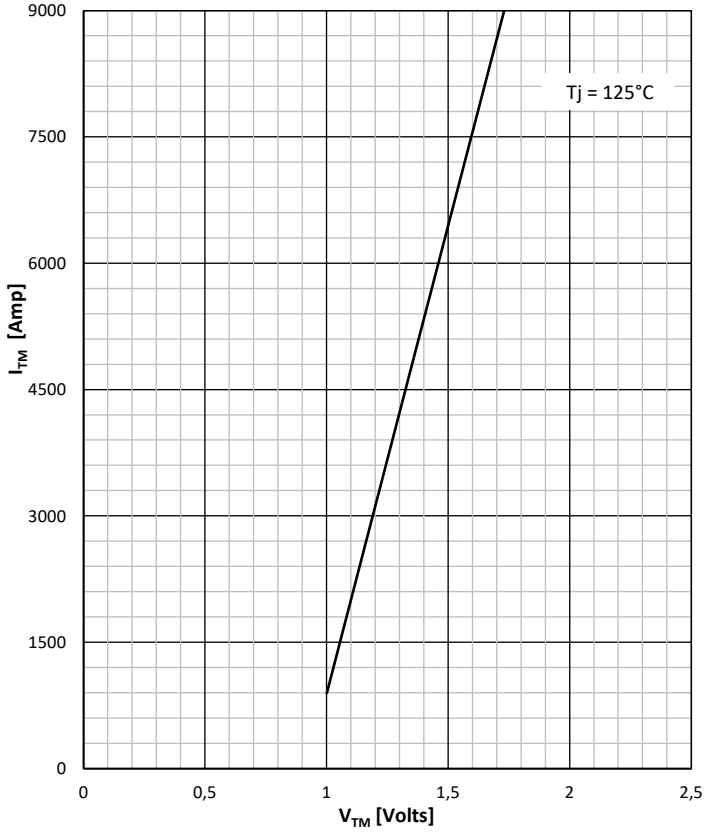
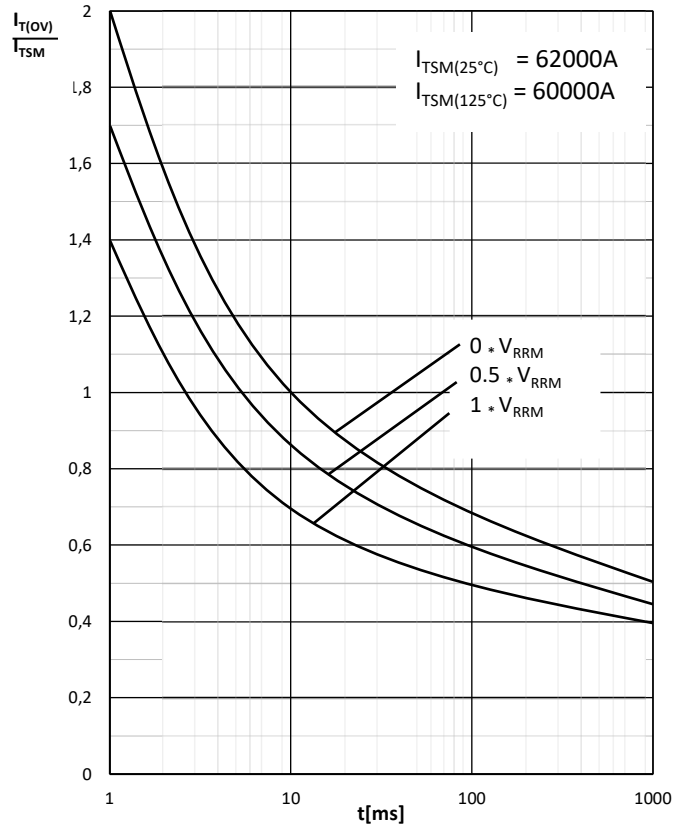
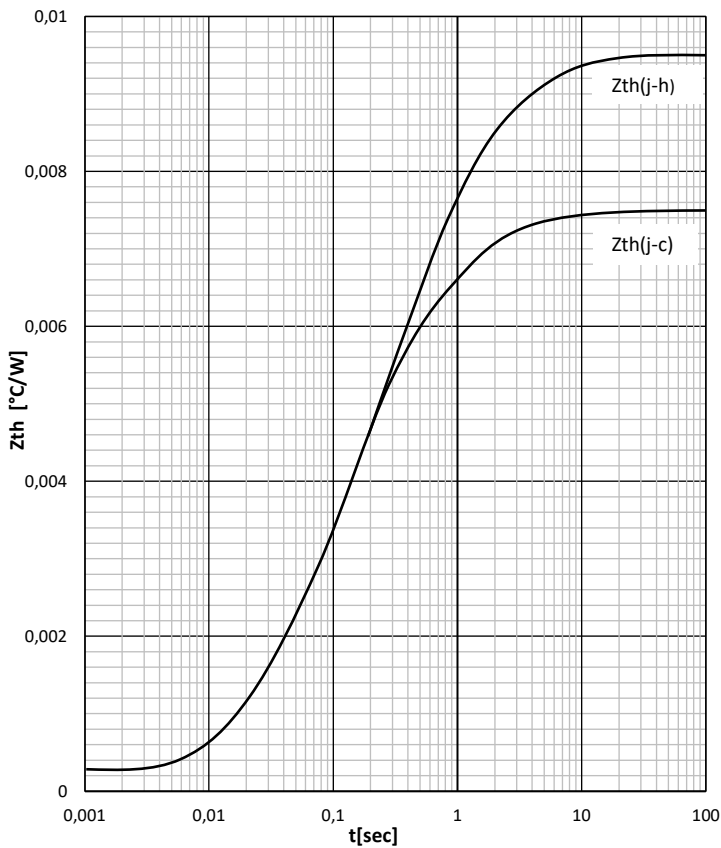

DISSIPATION CHARACTERISTICS

SQUARE WAVE


ON STATE CURRENT DERATING CURVE

SQUARE WAVE



ON STATE CHARACTERISTIC

SURGE CHARACTERISTICS

TRANSIENT THERMAL IMPEDANCE

GATE TRIGGER CHARACTERISTICS
