

Thyristors

SKT 1800 SKT 2400



V_{RSM}	V_{RRM} V_{DRM}	$\left(\frac{dv}{dt}\right)_{cr}$	I_{TRMS} (maximum values for continuous operation)	
			4500 A	5700 A
V	V	V/ μs	I_{TAV} (sin. 180; $T_{case} = \dots$; DSC)	
			2500 A (60 °C)	3000 A (56 °C)
1300	1200	1000	SKT 1800/12 E	SKT 2400/12 E
1500	1400	1000	SKT 1800/14 E	SKT 2400/14 E
1700	1600	1000	SKT 1800/16 E	SKT 2400/16 E
1900	1800	1000	–	SKT 2400/18 E

Symbol	Conditions	SKT 1800	SKT 2400
I_{TAV}	sin. 180; ($T_{case} = \dots$); DSC	1800 A (85 °C)	2400 A (75 °C)
I_{TSM}	$T_{vj} = 25\text{ °C}$	53 000 A	55 000 A
	$T_{vj} = 125\text{ °C}$	45 000 A	47 000 A
i^2t	$T_{vj} = 25\text{ °C}$	14 000 000 A ² s	15 125 000 A ² s
	$T_{vj} = 125\text{ °C}$	10 000 000 A ² s	11 000 000 A ² s
t_{gd}	$T_{vj} = 25\text{ °C}$; $I_G = 1\text{ A}$; $di_G/dt = 1\text{ A}/\mu s$	typ. 1 μs	
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	typ. 2 μs	
$(di/dt)_{cr}$	$f = 50 \dots 60\text{ Hz}$	150 A/ μs	
I_H	$T_{vj} = 25\text{ °C}$; typ./max.	500 mA/1 A	
I_L	$T_{vj} = 25\text{ °C}$; typ./max.	2 A/5 A	
t_q	$T_{vj} = 125\text{ °C}$; typ.	200 ... 300 μs	
V_T	$T_{vj} = 25\text{ °C}$; $I_T = 3000\text{ A}$; max.	1,25 V	1,37 V
$V_{T(TO)}$	$T_{vj} = 125\text{ °C}$	0,88 V	0,88 V
r_T	$T_{vj} = 125\text{ °C}$	0,124 m Ω	0,164 m Ω
I_{DD}, I_{RD}	$T_{vj} = 125\text{ °C}$; $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$	100 mA	100 mA
V_{GT}	$T_{vj} = 25\text{ °C}$	3 V	
I_{GT}	$T_{vj} = 25\text{ °C}$	300 mA	
V_{GD}	$T_{vj} = 125\text{ °C}$	0,25 V	
I_{GD}	$T_{vj} = 125\text{ °C}$	10 mA	
R_{thjc}	cont. DSC	0,015	0,0105
	sin. 180; DSC/SSC	0,0155/0,0330	0,0110/0,0240
	rec. 120; DSC/SSC	0,0165/0,0345	0,0118/0,0250
R_{thch}	DCS/SSC	0,003/0,006	0,002/0,004
T_{vj}		– 40 ... +125 °C	
T_{stg}		– 40 ... +130 °C	
F	SI units	27 ... 34 kN	37 ... 47 kN
	US units	6000 ... 7600 lbs.	8000 ... 10000 lbs
w		1 kg	1,7 kg
Case		B 19	B 20

Features

- Hermetic metal cases with ceramic insulators
- Amplifying gates
- Capsule packages for double sided cooling
- Shallow design with single sided cooling
- Off-state and reverse voltages up to 1800 V

Typical Applications

- DC motor control (e. g. for machine tools)
- Controlled rectifiers (e. g. for battery charging)
- AC controllers (e. g. for temperature control)
- Soft starters for AC motors

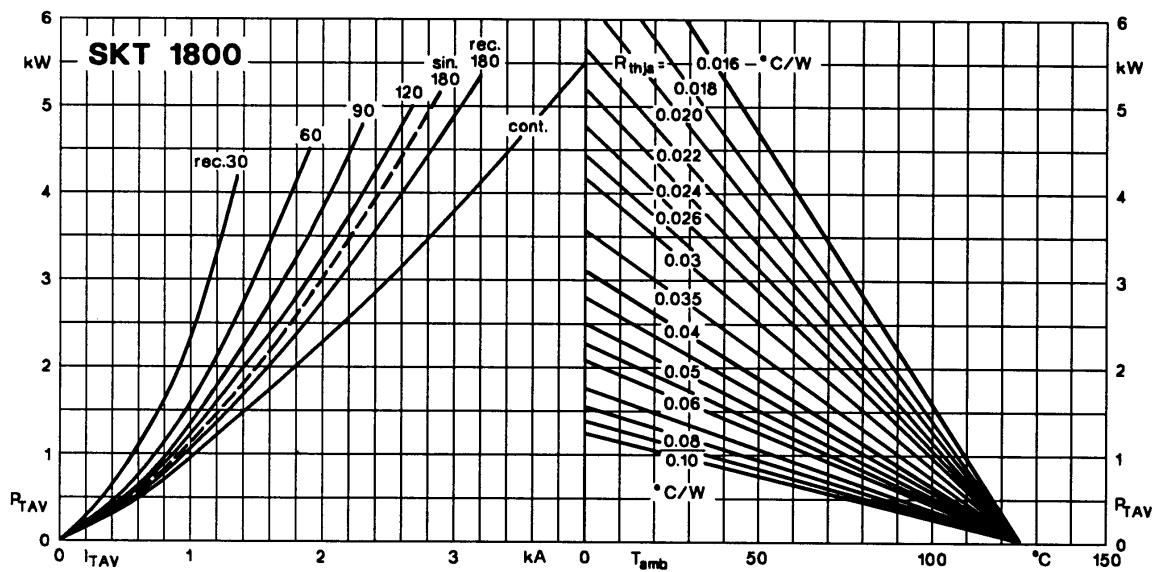


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

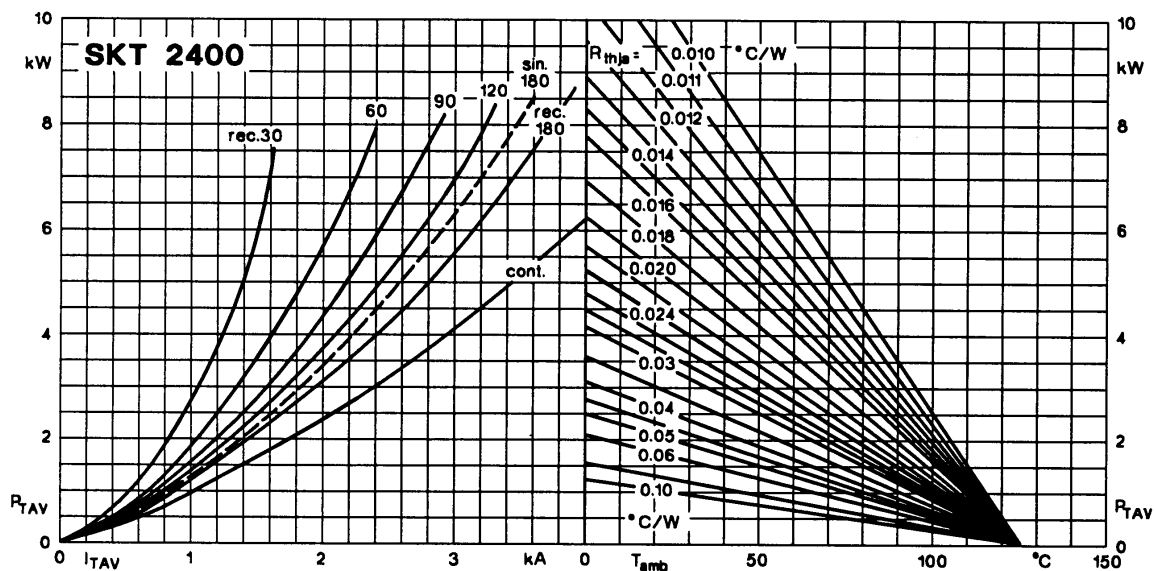


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

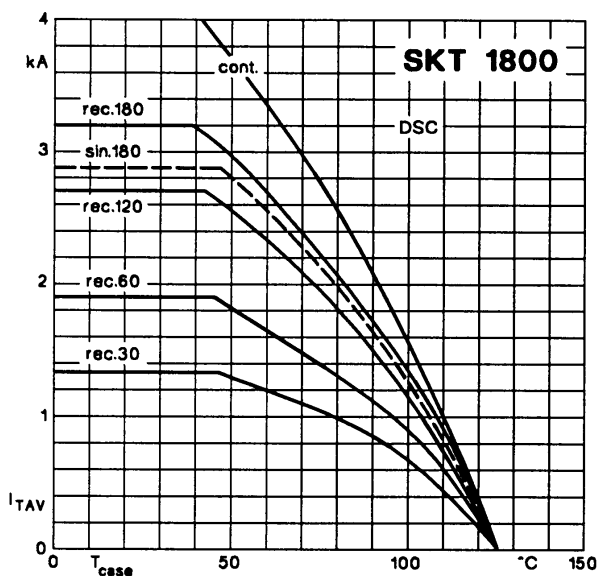


Fig. 2 a Rated on-state current vs. case temperature

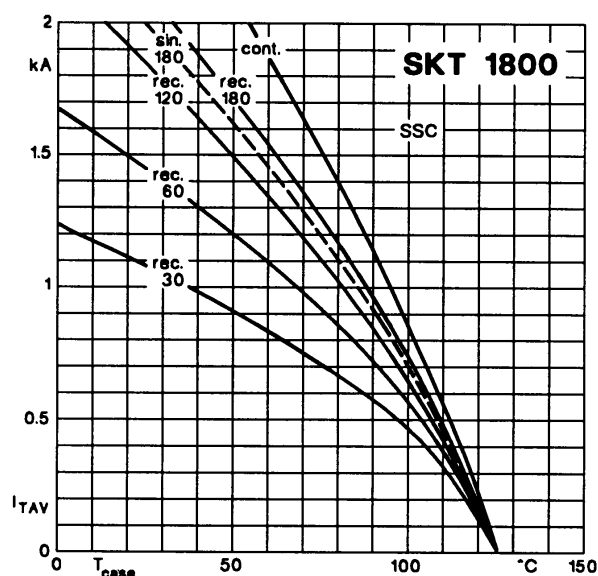


Fig. 2 b Rated on-state current vs. case temperature

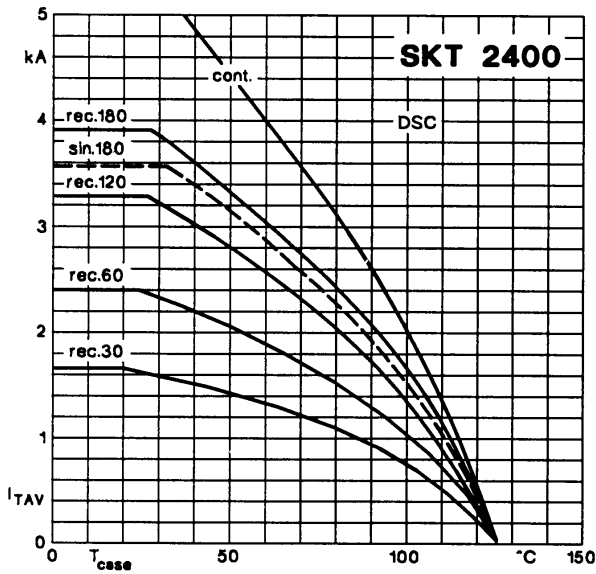


Fig. 2 c Rated on-state current vs. case temperature

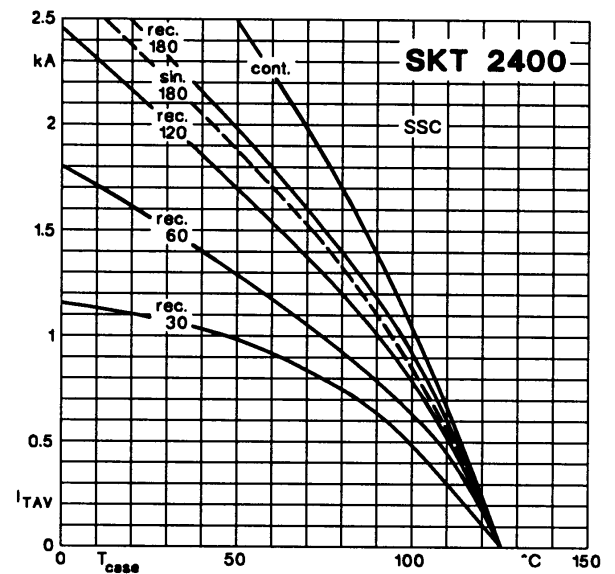


Fig. 2 d Rated on-state current vs. case temperature

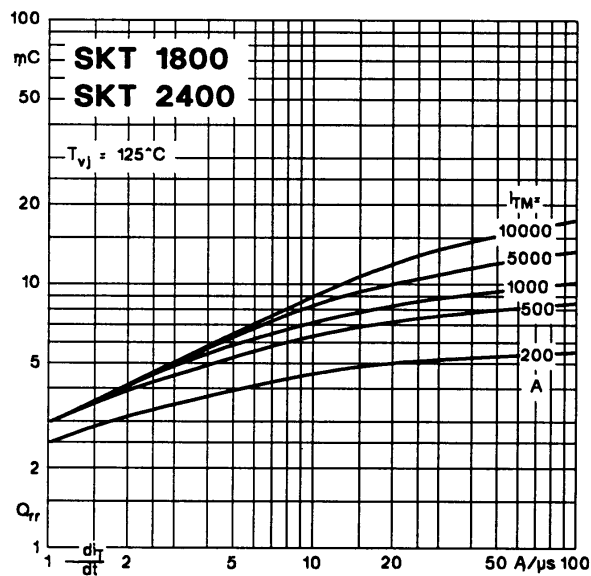


Fig. 3 Recovered charge vs. current decrease

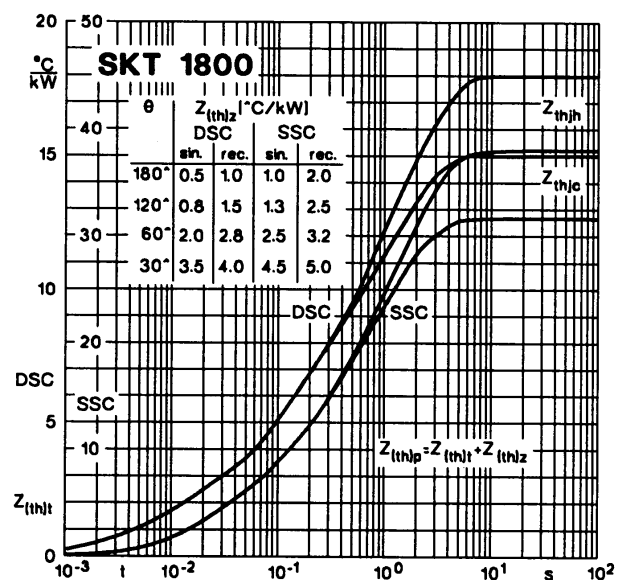


Fig. 4 a Transient thermal impedance vs. time

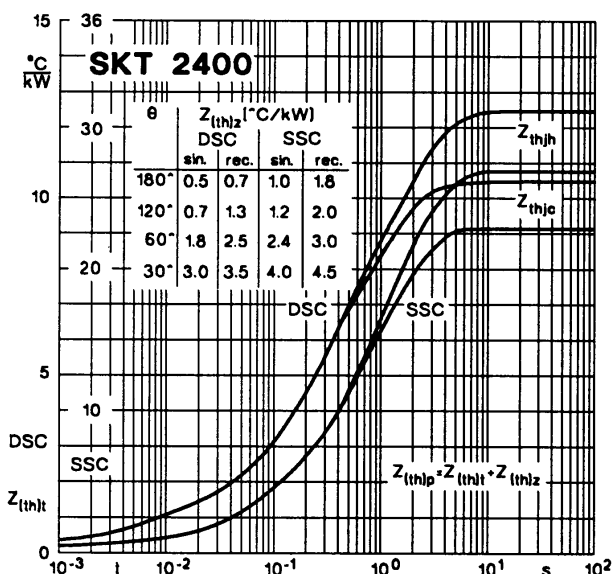


Fig. 4 b Transient thermal impedance vs. time

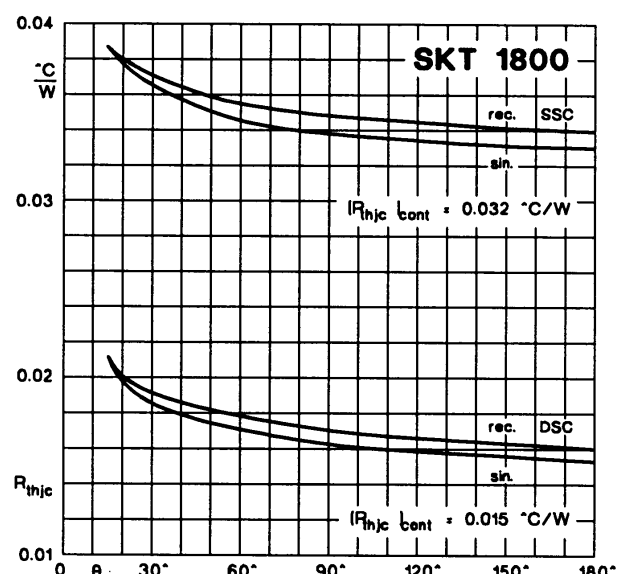


Fig. 5 a Thermal resistance vs. conduction angle

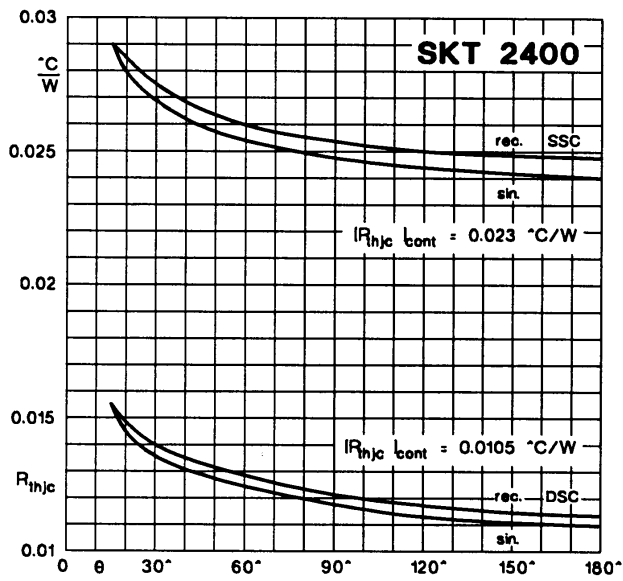


Fig. 5 b Thermal resistance vs. conduction angle

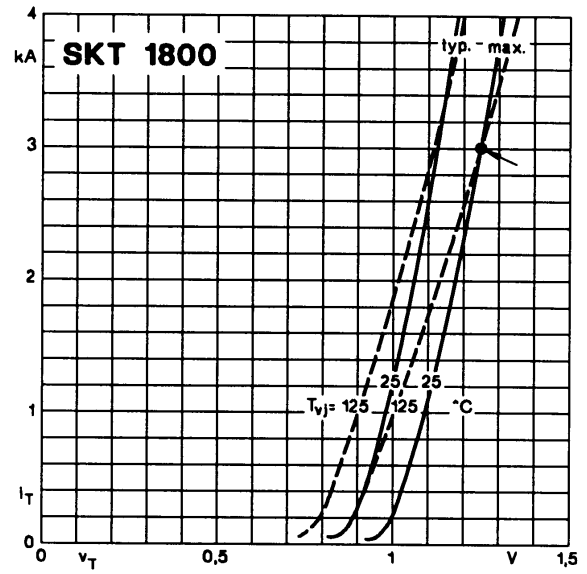


Fig. 6 a On-state characteristics

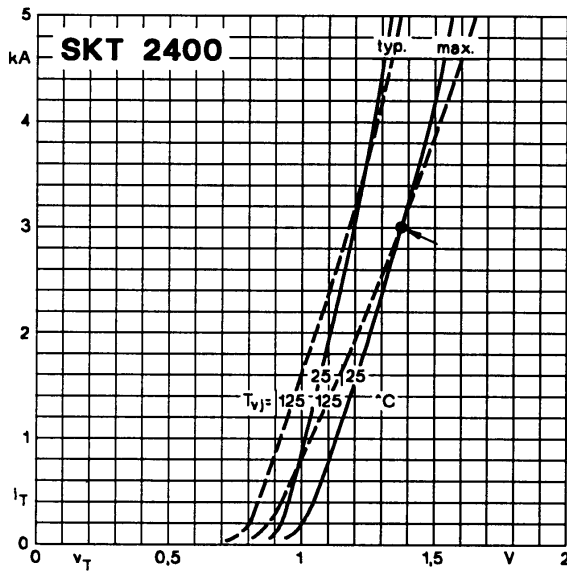


Fig. 6 b On-state characteristics

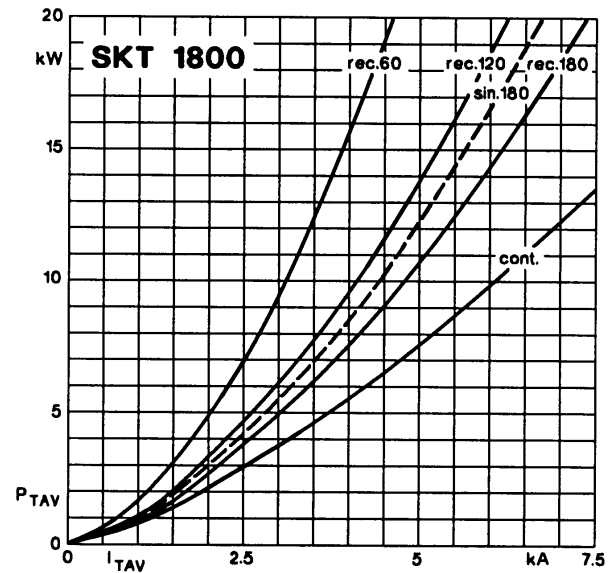


Fig. 7 a Power dissipation vs. on-state current

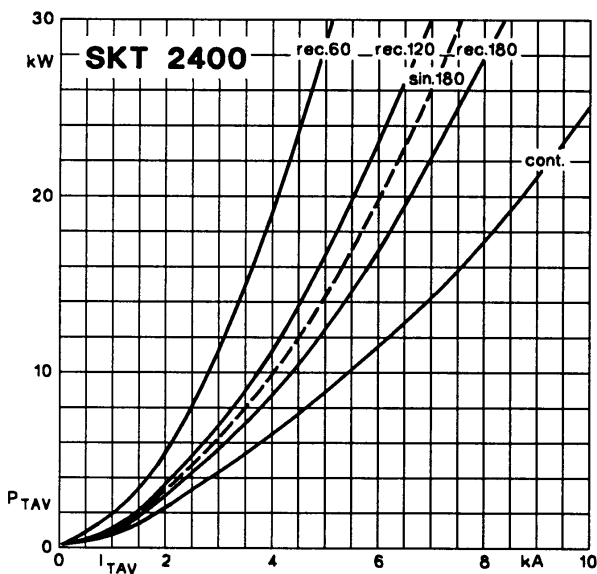


Fig. 7 b Power dissipation vs. on-state current

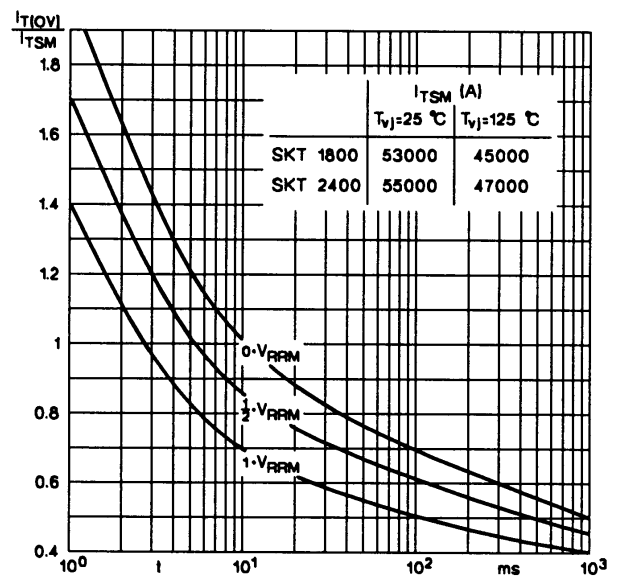
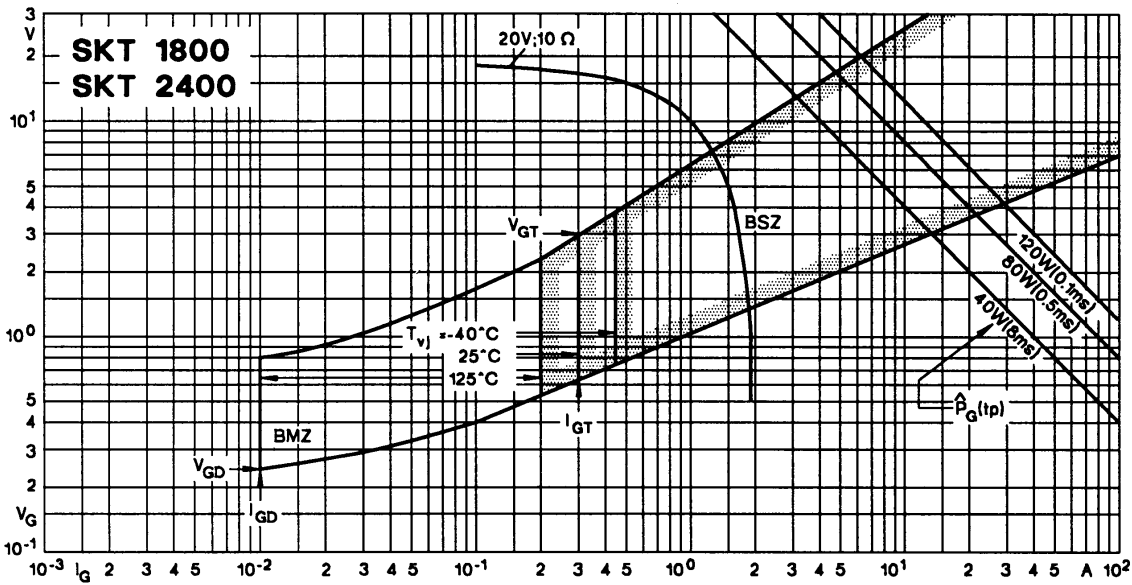


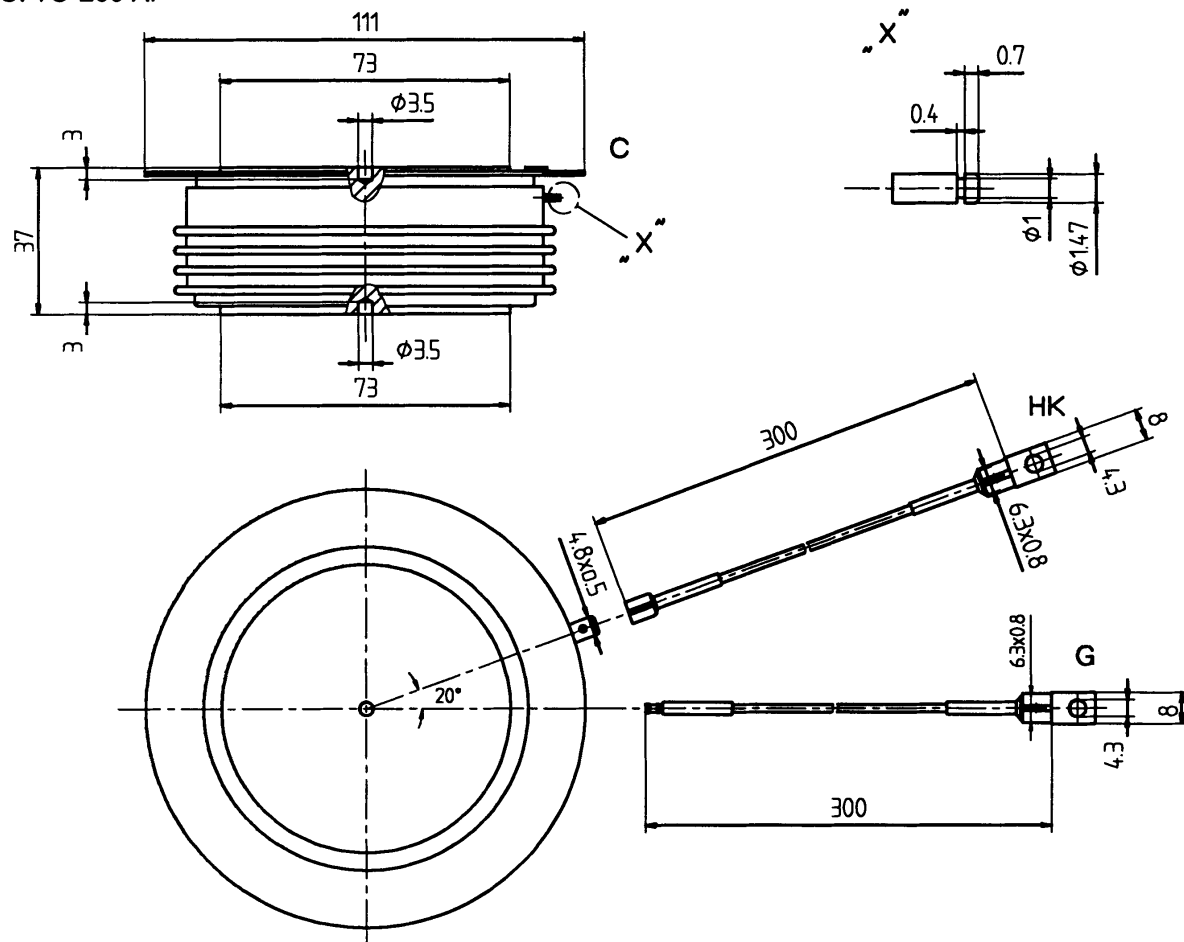
Fig. 8 Surge overload current vs. time



SKT 2400

Case B 20

JEDEC: TO-200 AF



- C: Cathode terminal
A: Anode terminal
G: Gate terminal (yellow sleeve)
HK: Auxiliary cathode terminal (red sleeve)

Dimensions in mm