

Thyristors

SKT 1400 SKT 2000



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 3600 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

V _{RRM} V	V _{RRM} V _{DRM}	$\left(\frac{dv}{dt}\right)_{cr}$ V/μs	I _{TRMS} (maximum values for continuous operation)	
			3000 A	5000 A
			I _{TAV} (sin. 180; T _{case} = . . . ; DSC)	
			1500 A (55 °C)	2450 A (55 °C)
2300	2200	1000	–	SKT 2000/22 E
2700	2600	1000	SKT 1400/26 E	SKT 2000/26 E
2900	2800	1000	SKT 1400/28 E	SKT 2000/28 E
3300	3200	1000	SKT 1400/32 E	–
3700	3600	1000	SKT 1400/36 E	–

Symbol	Conditions	SKT 1400	SKT 2000
I _{TAV}	sin. 180; (T _{case} = ...); DSC	1400 A (62 °C)	2000 A (72 °C)
I _{TSM}	T _{vj} = 25 °C T _{vj} = 125 °C	29 000 A 25 000 A	45 000 A 39 000 A
i ² t	T _{vj} = 25 °C T _{vj} = 125 °C	4 200 000 A ² s 3 125 000 A ² s	10 125 000 A ² s 7 600 000 A ² s
t _{gd}	T _{vj} = 25 °C; I _G = 1 A; di _G /dt = 1 A/μs	typ. 1 μs	
t _{gr}	V _D = 0,67 · V _{DRM}	typ. 2 μs	
(di/dt) _{cr}	f = 50 . . . 60 Hz	150 A/μs	
I _H	T _{vj} = 25 °C; typ./max.	500 mA/1 A	
I _L	T _{vj} = 25 °C; typ./max.	2 A/5 A	
t _q	T _{vj} = 125 °C; typ.	200 ... 300 μs	
V _T	T _{vj} = 25 °C; I _T = 3000 A; max.	2,1 V	1,8 V
V _{T(TO)}	T _{vj} = 125 °C	1,04 V	1,09 V
r _T	T _{vj} = 125 °C	0,35 mΩ	0,236 mΩ
I _{DD} , I _{RD}	T _{vj} = 125 °C; V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}	100 mA	100 mA
V _{GT}	T _{vj} = 25 °C	3 V	
I _{GT}	T _{vj} = 25 °C	300 mA	
V _{GD}	T _{vj} = 125 °C	0,25 V	
I _{GD}	T _{vj} = 125 °C	10 mA	
R _{thjc}	cont. DSC	0,018	0,0105
R _{thch} T _{vj} T _{stg}	sin. 180; DSC/SSC	0,0185/0,039	0,0110/0,0240
	rec. 120; DSC/SSC	0,020/0,041	0,0118/0,0250
	DCS/SSC	0,003/0,006	0,002/0,004
	°C/W	– 40 ... +125 °C – 40 ... +130 °C	
F	SI units	27 ... 34 kN	37 ... 47 kN
w	US units	6000 ... 7600 lbs.	8000 ... 10000 lbs
		1 kg	1,7 kg
Case		B 19	B 20

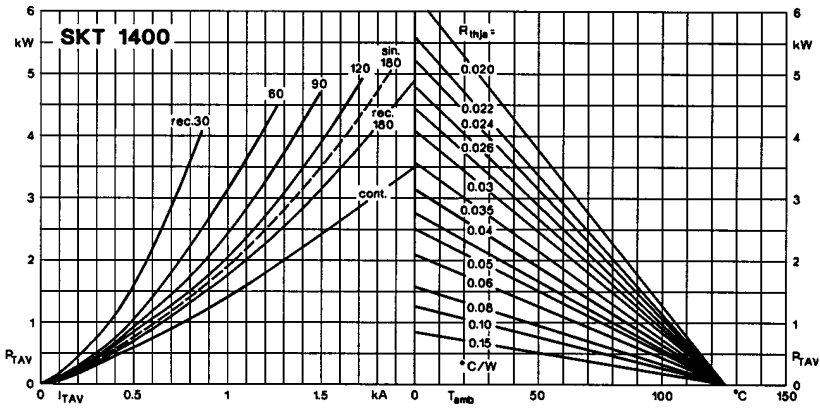


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

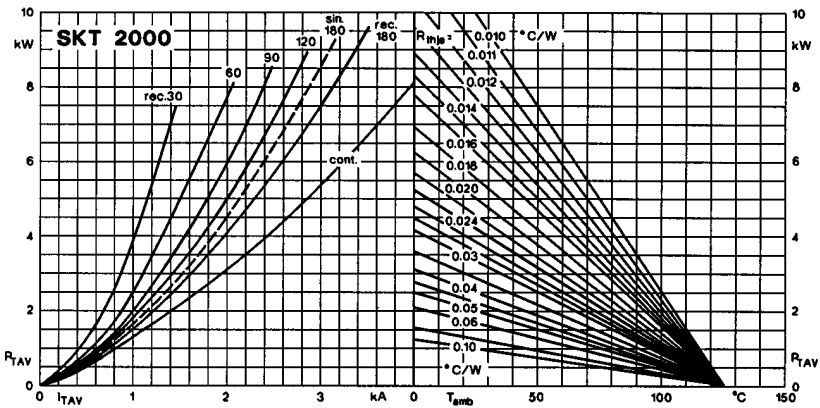


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

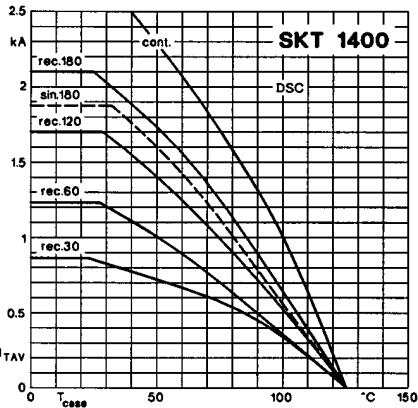


Fig. 2 a Rated on-state current vs. case temperature

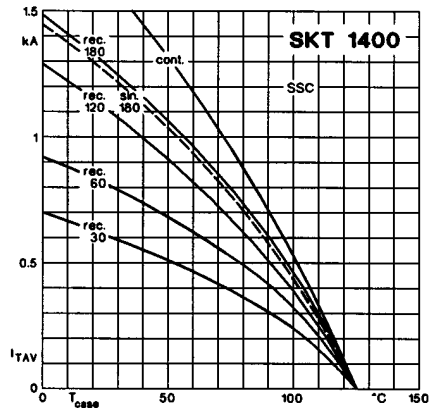


Fig. 2 b Rated on-state current vs. case temperature

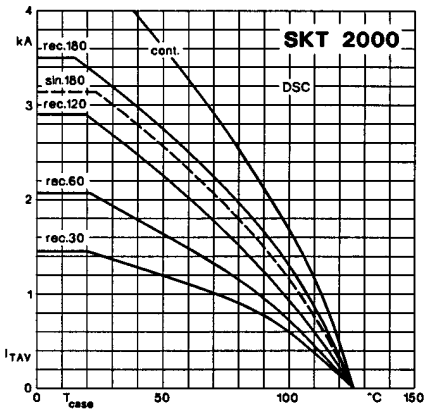


Fig. 2 c Rated on-state current vs. case temperature

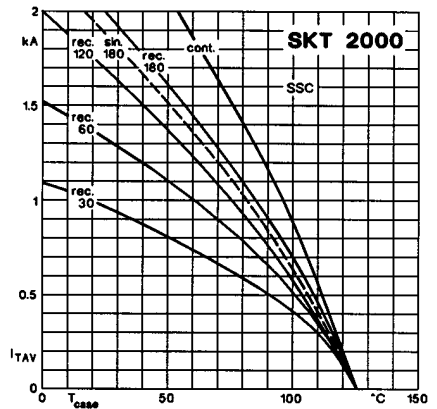


Fig. 2 d Rated on-state current vs. case temperature

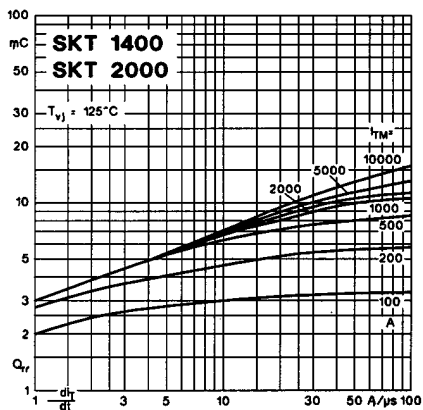


Fig. 3 Recovered charge vs. current decrease

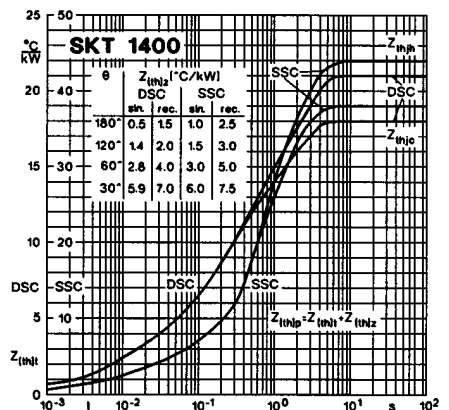


Fig. 4 a Transient thermal impedance vs. time

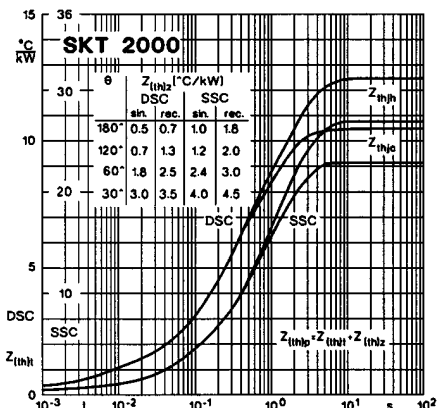


Fig. 4 b Transient thermal impedance vs. time

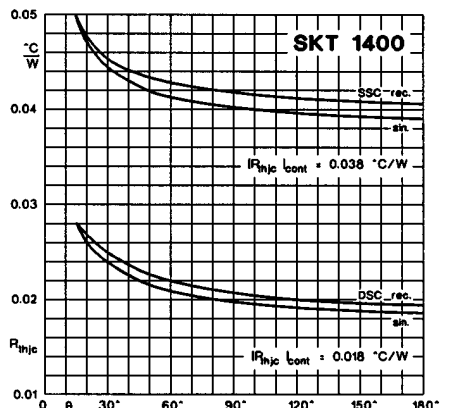


Fig. 5 a Thermal resistance vs. conduction angle

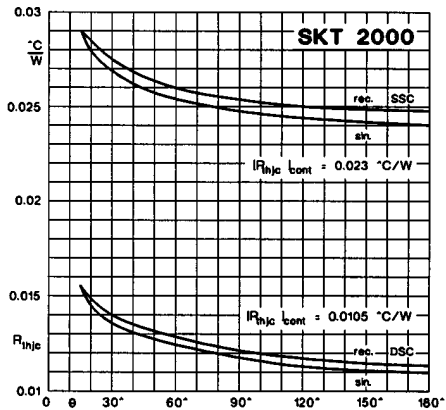


Fig. 5 b Thermal resistance vs. conduction angle

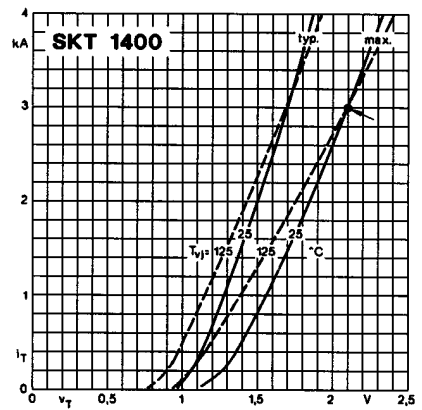


Fig. 6 a On-state characteristics

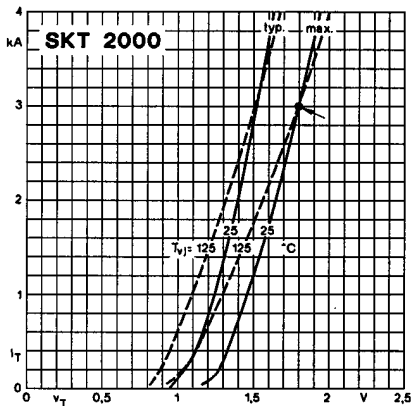


Fig. 6 b On-state characteristics

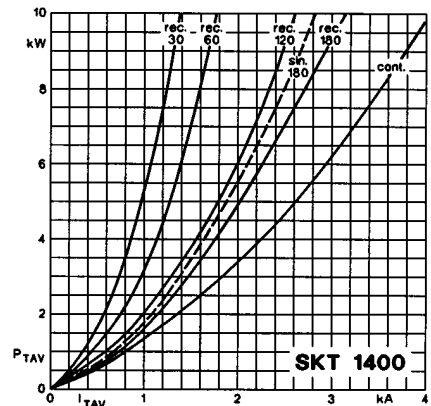


Fig. 7 a Power dissipation vs. on-state current

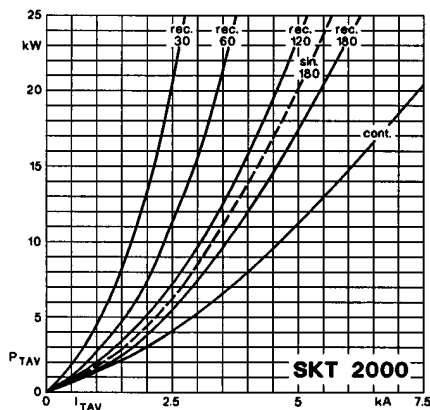


Fig. 7 b Power dissipation vs. on-state current

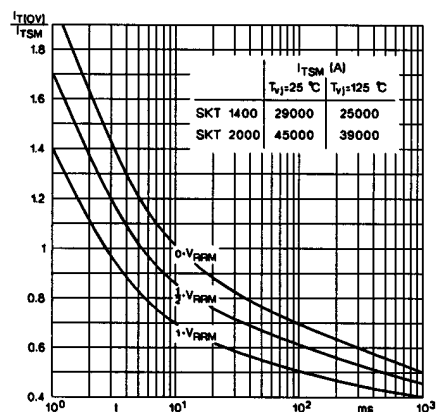


Fig. 8 Surge overload current vs. time

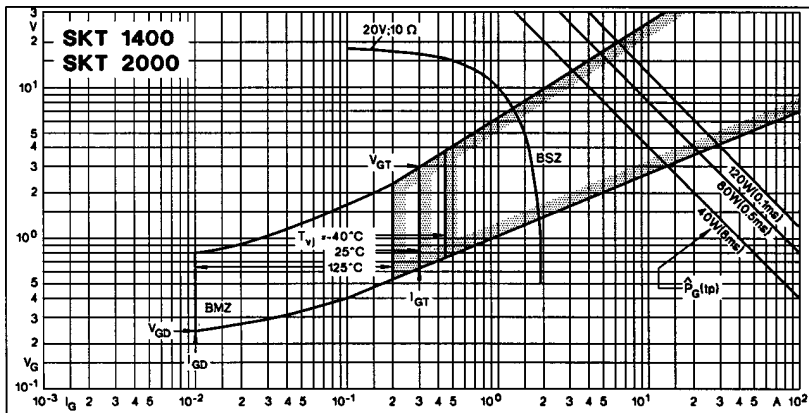
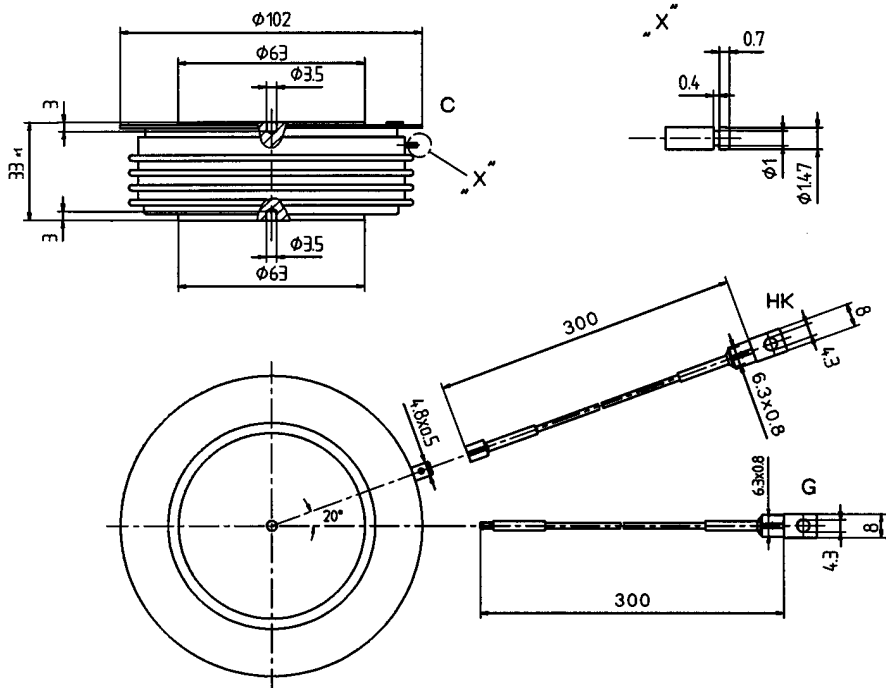


Fig. 9 Gate trigger characteristics

SKT 1400

Case B 19



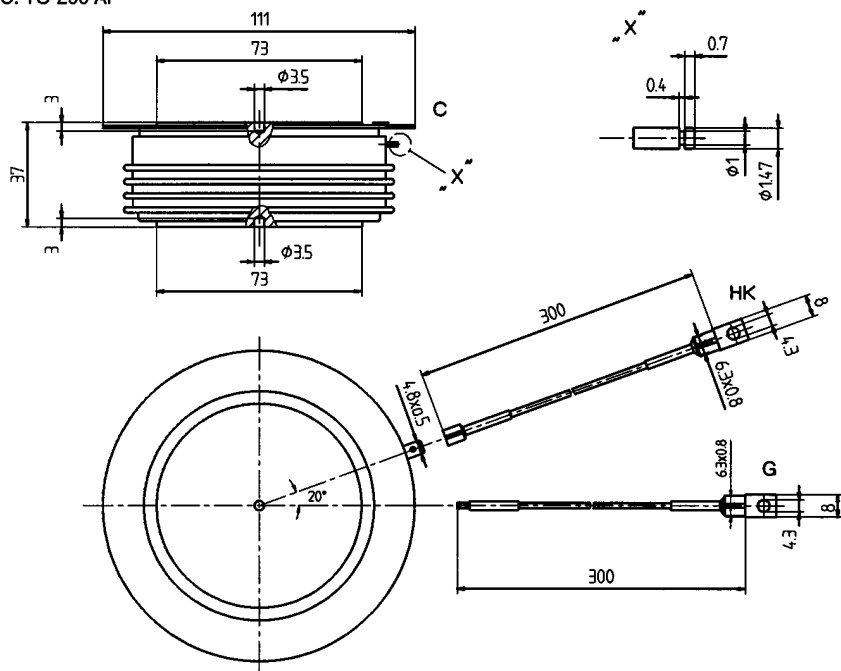
- C: Cathode terminal
- A: Anode terminal
- G: Gate terminal (yellow sleeve)
- HK: Auxiliary cathode terminal (red sleeve)

Dimensions in mm

SKT 2000

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