

## Thyristors

### SKT 520



#### Features

- Hermetic metal cases with ceramic insulators
- Capsule packages for double sided cooling
- Shallow design with single sided cooling
- International standard cases
- Off-state and reverse voltages up to 2800 V
- Amplifying gate

#### Typical Applications

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

$V_{RSM}$	$V_{RRM}$ $V_{DRM}$	$(dv/dt)_{cr}$	$I_{TRMS}$ (maximum values for continuous operation) 1400 A
			$I_{TAV}$ (sin. 180; $T_{case} = 55\text{ °C}$ ; DSC) 780 A
V	V	V/ $\mu$ s	
1900	1800	1000	<b>SKT 520/18 E</b>
2100	2000	1000	<b>SKT 520/20 E</b>
2300	2200	1000	<b>SKT 520/22 E</b>
2500	2400	1000	<b>SKT 520/24 E</b>
2900	2800	1000	<b>SKT 520/28 E</b>

Symbol	Conditions	SKT 520	Units
$I_{TAV}$	sin. 180; $T_{case} = 85\text{ °C}$ ; DSC	520	A
$I_{TSM}$	$T_{vj} = 25\text{ °C}$	9 000	A
$i^2t$	$T_{vj} = 125\text{ °C}$	8 000	A
	$T_{vj} = 25\text{ °C}$	405 000	$A^2s$
$t_{gd}$	$T_{vj} = 25\text{ °C}$ $I_G = 1\text{ A}$ $di_G/dt = 1\text{ A}/\mu$ s	typ. 1	$\mu$ s
		typ. 2	$\mu$ s
$t_{gr}$	$V_D = 0,67 \cdot V_{DRM}$		
$(di/dt)_{cr}$	$f = 50 \dots 60\text{ Hz}$	125	A/ $\mu$ s
$I_H$	$T_{vj} = 25\text{ °C}$ ; typ./max.	150 / 500	mA
$I_L$	$T_{vj} = 25\text{ °C}$ ; typ./max.	0,5 / 2	A
$t_q$	$T_{vj} = 125\text{ °C}$ ; typ.	100 ... 200	$\mu$ s
$V_T$	$T_{vj} = 25\text{ °C}$ ; $I_T = 1500\text{ A}$ ; max.	2,0	V
$V_{T(TO)}$	$T_{vj} = 125\text{ °C}$	1,2	V
$r_T$	$T_{vj} = 125\text{ °C}$	0,55	$m\Omega$
$I_{DD}$ ; $I_{RD}$	$T_{vj} = 125\text{ °C}$ ; $V_{RD} = V_{RRM}$ $V_{DD} = V_{DRM}$	120	mA
$V_{GT}$	$T_{vj} = 25\text{ °C}$	3	V
$I_{GT}$	$T_{vj} = 25\text{ °C}$	200	mA
$V_{GD}$	$T_{vj} = 125\text{ °C}$	0,25	V
$I_{GD}$	$T_{vj} = 125\text{ °C}$	10	mA
$R_{thjc}$	cont. DSC	0,038	$^{\circ}C/W$
	sin. 180; DSC/SSC	0,040 / 0,082	$^{\circ}C/W$
	rec. 120; DSC/SSC	0,045 / 0,093	$^{\circ}C/W$
$R_{thch}$	DSC/SSC	0,007 / 0,014	$^{\circ}C/W$
$T_{vj}$		- 40 ... + 125	$^{\circ}C$
$T_{stg}$		- 40 ... + 130	$^{\circ}C$
F	SI units	10 ... 13	kN
	US units	2200 ... 2850	lbs.
w		240	g
Case		B 10	

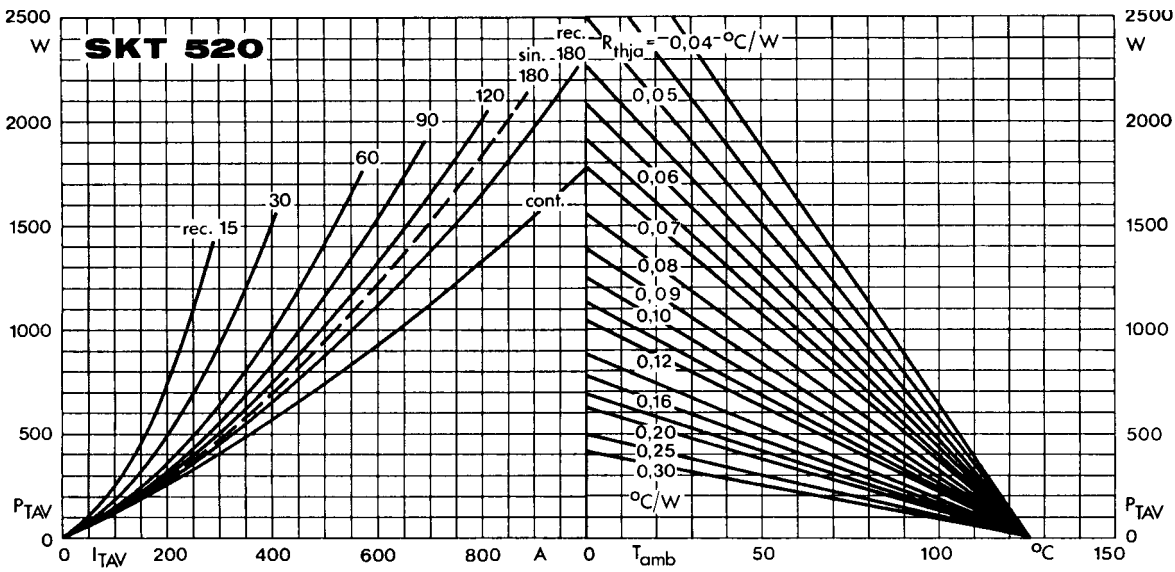


Fig. 1 Power dissipation vs. on-state current and ambient temperature

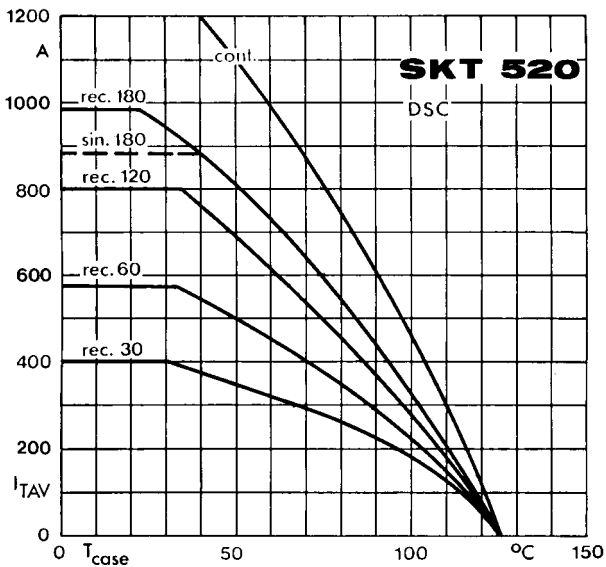


Fig. 2 a Rated on-state current vs. case temperature

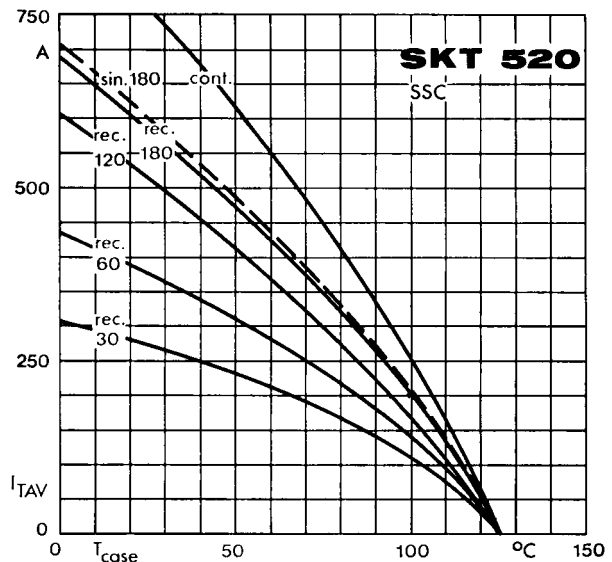


Fig. 2 b Rated on-state current vs. case temperature

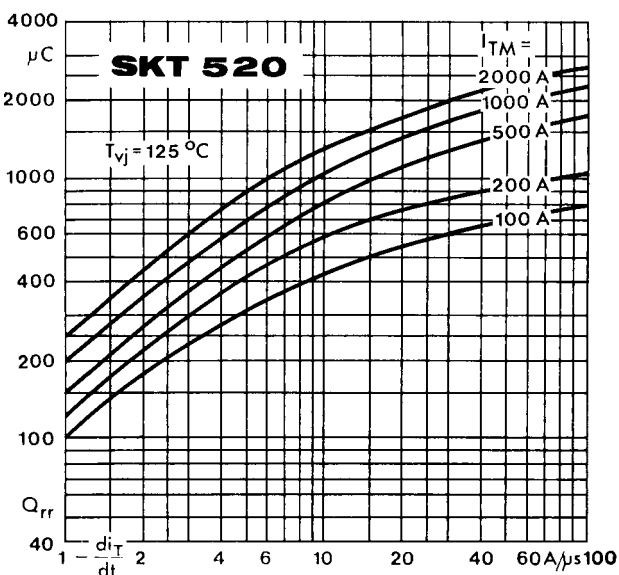


Fig. 3 Recovered charge vs. current decrease

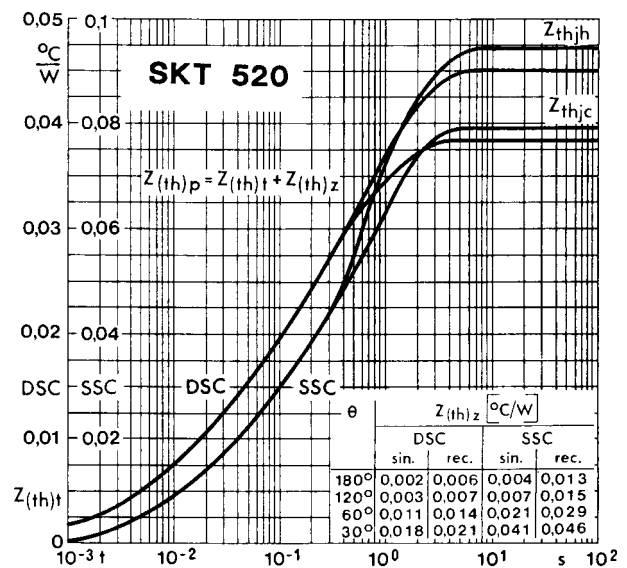


Fig. 4 Transient thermal impedance vs. time

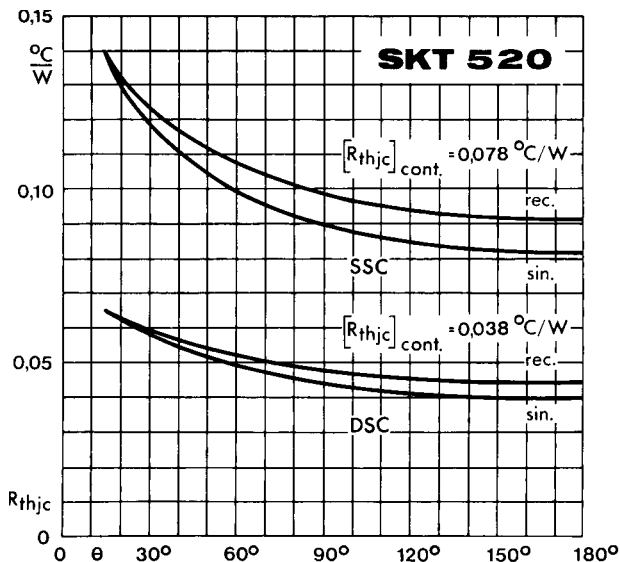


Fig. 5 Thermal resistance vs. conduction angle

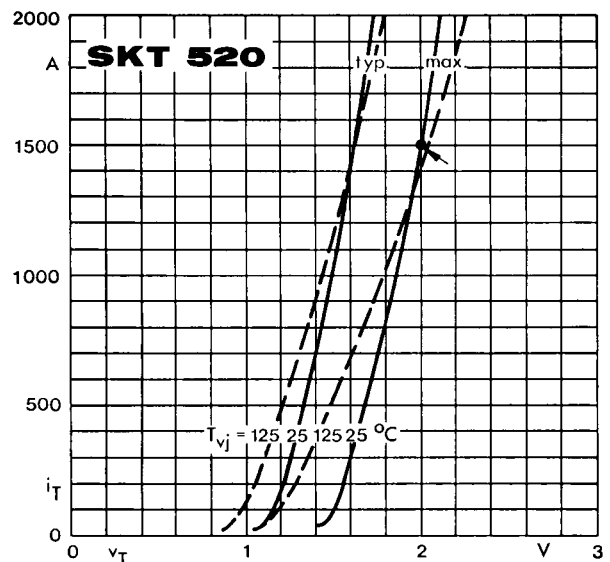


Fig. 6 On-state characteristics

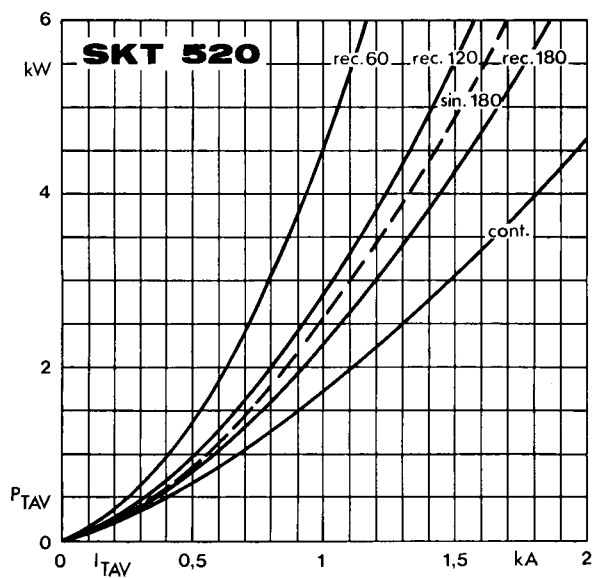


Fig. 7 Power dissipation vs. on-state current

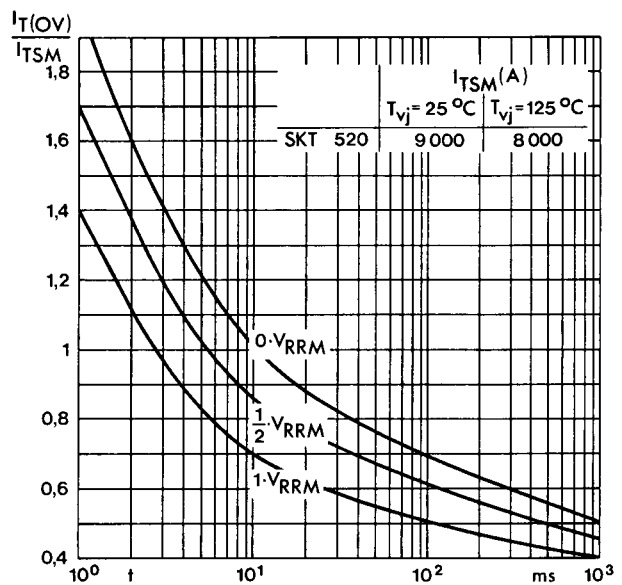


Fig. 8 Surge overload current vs. time

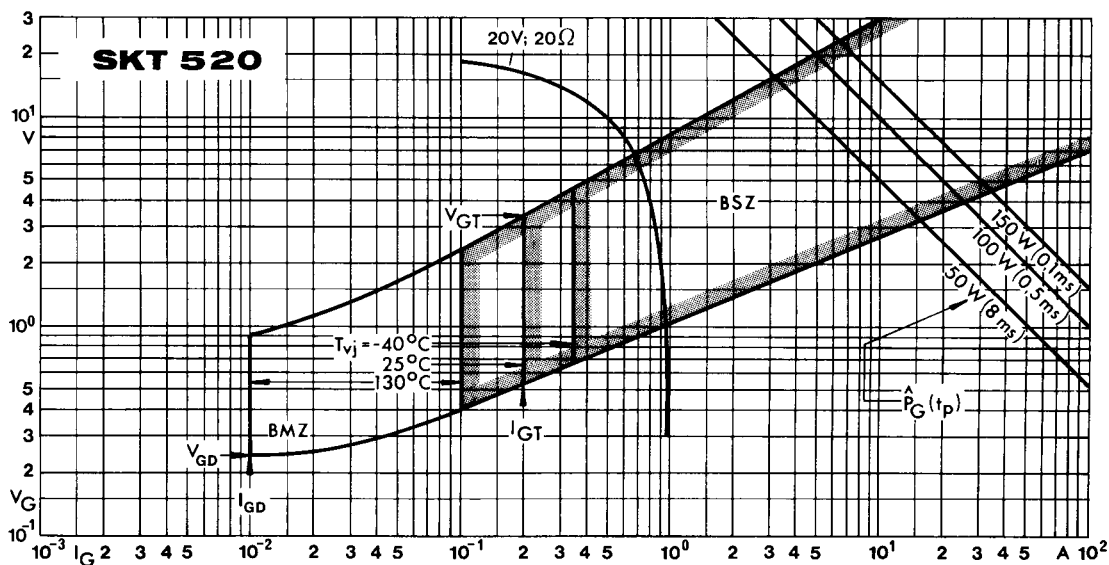


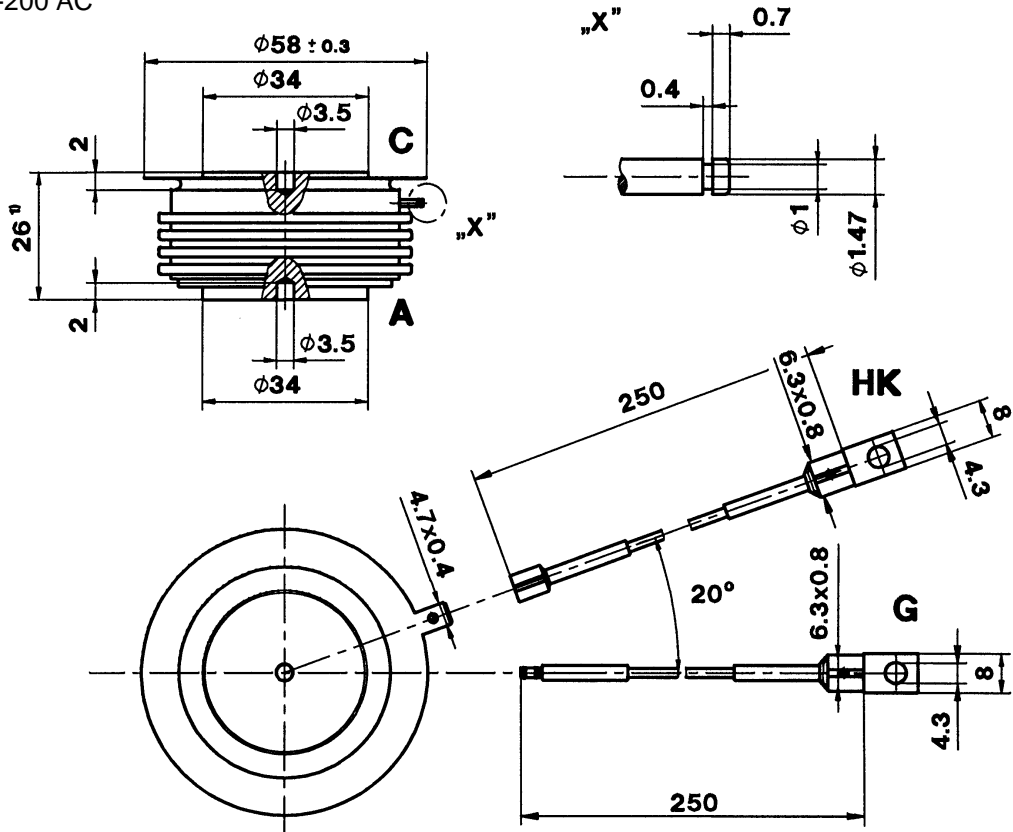
Fig. 9 Gate trigger characteristics

SKT 520  
SKT 600  
SKT 760

Case B 10

DIN 41814: 153 C 4

JEDEC: TO-200 AC



<sup>1)</sup> SKT 520/24 E } 27 mm  
SKT 520/28 E }

Dimensions in mm

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