

Thyristors

SKT 240 SKT 340



V _{RSM}	V _{RRM} V _{DRM}	$\left(\frac{dv}{dt}\right)_{cr}$	I _{T(RMS)} (maximum values for continuous operation)	
			600 A	700 A
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = . . . ; DSC) 380 A (60 °C) 450 A (57 °C)	
500	400	500	SKT 240/04 D	SKT 340/04 D
900	800	1000	SKT 240/08 E	SKT 340/08 E
1300	1200	500	SKT 240/12 D	SKT 340/12 D
		1000	SKT 240/12 E	SKT 340/12 E
1500	1400	1000	SKT 240/14 E	SKT 340/14 E
1700	1600	1000	SKT 240/16 E	SKT 340/16 E
1900	1800	1000	SKT 240/18 E	SKT 340/18 E
2100	2000	1000	SKT 240/20 E	–
2300	2200	1000	SKT 240/22 E	–

Symbol	Conditions	SKT 240	SKT 340	Units
I _{TAV}	sin. 180; (T _{case} = . . .), DSC	240 (92)	340 (82)	A °C
I _{TSM}	T _{vj} = 25 °C; 10 ms	5 000	5 700	A
i ² t	T _{vj} = 125 °C; 10 ms	4 500	5 200	A
	T _{vj} = 25 °C; 8,3 ... 10 ms	125 000	162 000	A ² s
	T _{vj} = 125 °C; 8,3 ... 10 ms	101 000	135 000	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	125		A/μs
I _H	T _{vj} = 25 °C	typ. 150; max. 400		mA
I _L	T _{vj} = 25 °C	typ. 0,3; max. 1		A
t _q	T _{vj} = 125 °C; typ.	50 ... 150		μs
V _T	T _{vj} = 25 °C; I _T = 1000 A; max.	2,3	1,9	V
V _{T(TO)}	T _{vj} = 125 °C	1,0	1,0	V
r _T	T _{vj} = 125 °C	1,4	0,9	mΩ
I _{DD} , I _{RD}	T _{vj} = 125 °C; V _{DD} = V _{DRM} V _{RD} = V _{RRM}	40	40	mA
V _{GT}	T _{vj} = 25 °C	2		V
I _{GT}	T _{vj} = 25 °C	150		mA
V _{GD}	T _{vj} = 125 °C	0,25		V
I _{GD}	T _{vj} = 125 °C	10		mA
R _{thjc}	cont.; DSC	0,070		°C/W
R _{thch}	sin. 180; DSC/SSC	0,072/0,151		°C/W
	rec. 120; DSC/SSC	0,080/0,168		°C/W
R _{thch}	DSC/SSC	0,020/0,040		°C/W
T _{vj}		– 40 ... + 125		°C
T _{stg}		– 40 ... + 130		°C
F	SI units	4 ... 5		kN
w	US units	900 ... 1100		lbs.
		61		g
Case	→ page B 3–32		B 8	

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 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)

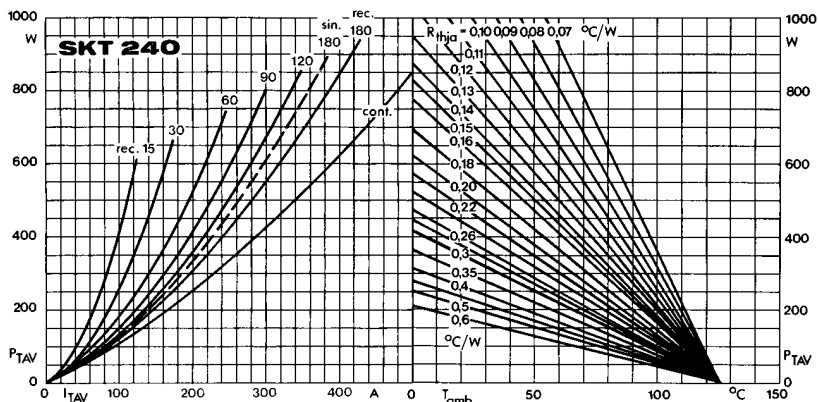


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

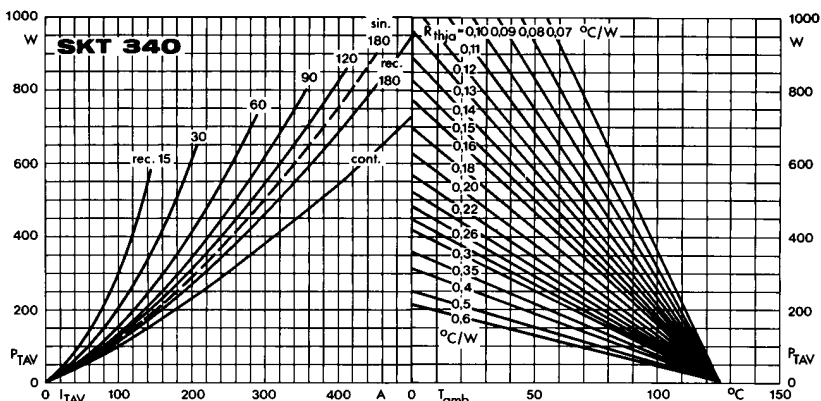


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

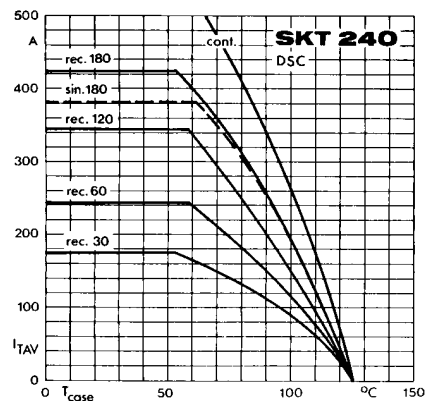


Fig. 2 a Rated on-state current vs. case temperature

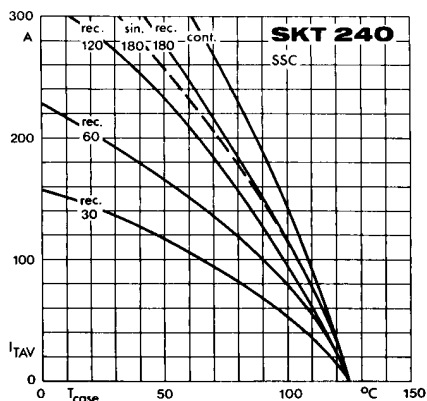


Fig. 2 b Rated on-state current vs. case temperature

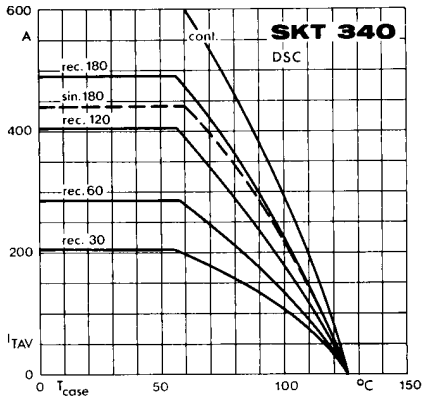


Fig. 2 c Rated on-state current vs. case temperature

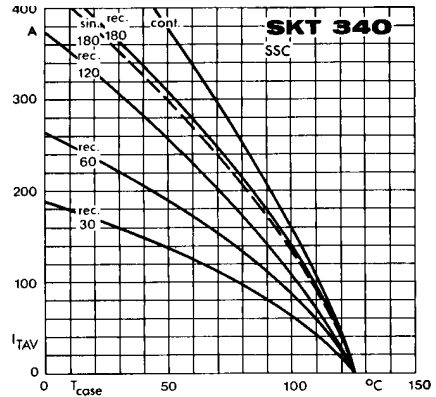


Fig. 2 d Rated on-state current vs. case temperature

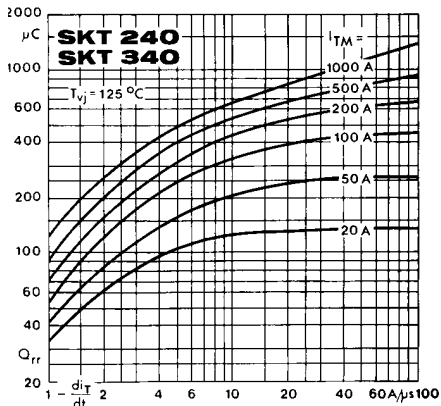


Fig. 3 Recovered charge vs. current decrease

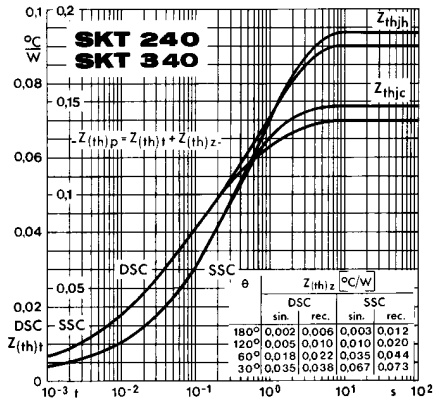


Fig. 4 Transient thermal impedance vs. time

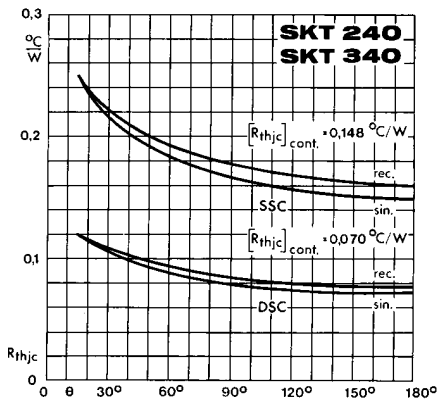


Fig. 5 Thermal resistance vs. conduction angle

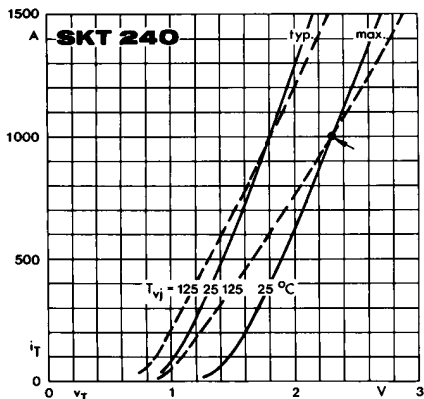


Fig. 6 a On-state characteristics

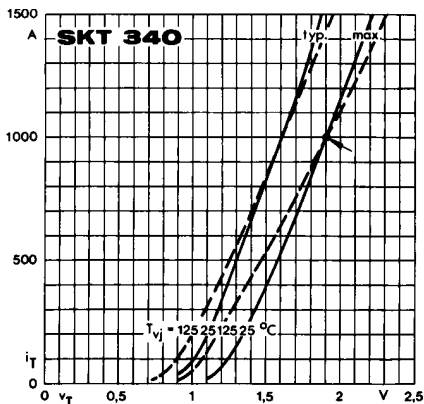


Fig. 6 b On-state characteristics

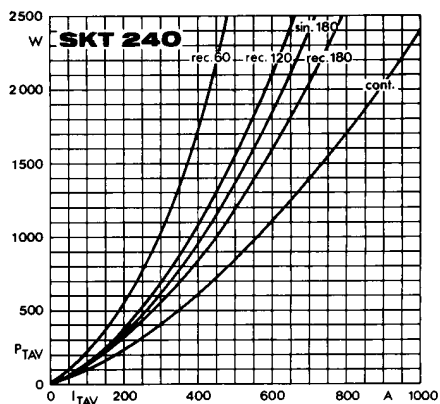


Fig. 7 a Power dissipation vs. on-state current

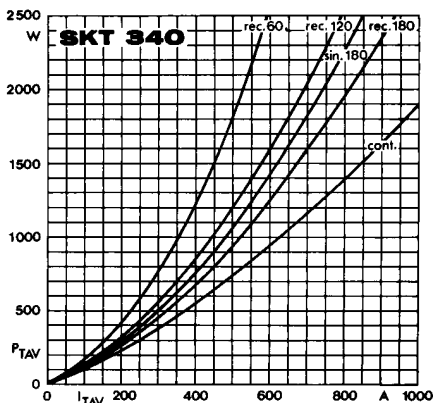


Fig. 7 b Power dissipation vs. on-state current

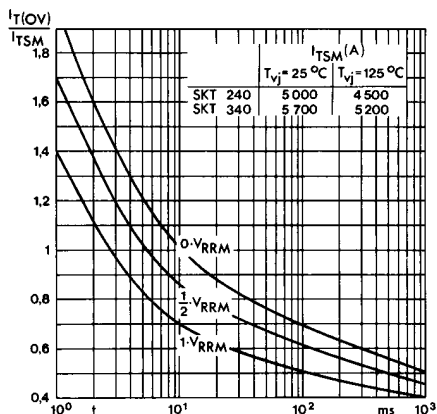


Fig. 8 Surge overload current vs. time

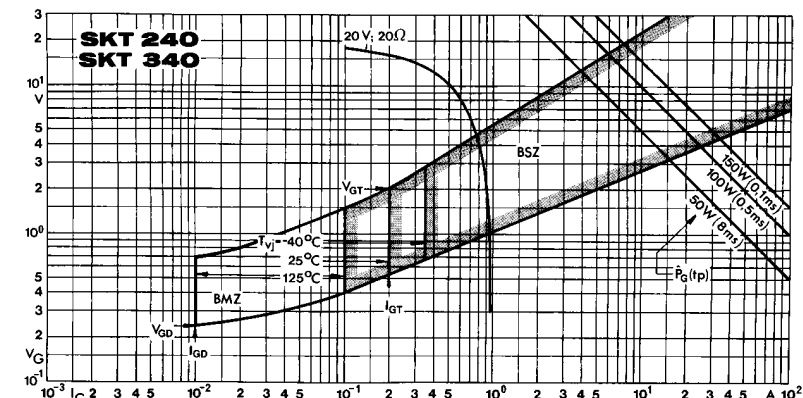


Fig. 9 Gate trigger characteristics