

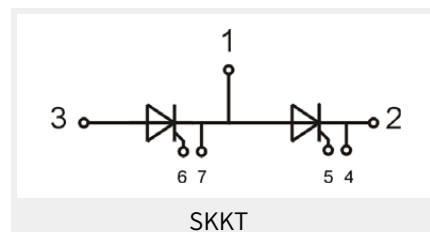
Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- Thyristor with amplifying gate



Typical Applications

- AC motor softstarters
- Input converters for AC inverter drives
- DC motor control (e.g. for machine tools)
- Temperature control (e.g. for ovens, chemical, processes)
- Professionals light dimming (studios, theaters)



Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Chip				
I _{T(AV)}	sinus 180°	T _c = 85 °C	570	A
		T _c = 100 °C	435	A
I _{TRMS}	continuous operation		1000	A
I _{TSM}	10 ms	T _j = 25 °C	19000	A
		T _j = 135 °C	15500	A
i ² t	10 ms	T _j = 25 °C	1805000	A ² s
		T _j = 135 °C	1201250	A ² s
V _{RSM}			1300-1900	V
V _{RRM}			1200-1800	V
V _{DRM}			1200-1800	V
(di/dt) _{cr}	T _j = 135 °C		250	A/μs
(dv/dt) _{cr}	T _j = 135 °C		1000	V/μs
T _j			-40 ... 135	°C
Module				
T _{stg}			-40 ... 125	°C
V _{isol}	a.c.; 50 Hz; r.m.s.	1 min	3000	V
		1 s	3600	V

Characteristics

Symbol	Conditions		min.	typ.	max.	Unit
Chip						
V _T	T _j = 25 °C, I _T = 1700 A				1.44	V
V _{T(TO)}	T _j = 135 °C				0.78	V
r _T	T _j = 135 °C				0.32	mΩ
I _{DD} , I _{RD}	T _j = 135 °C, V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}				225	mA
t _{gd}	T _j = 25 °C, I _G = 1 A, di _G /dt = 1 A/μs			1		μs
t _{gr}	V _D = 0.67 * V _{DRM}			2		μs
t _q	T _j = 135 °C			200		μs
I _H	T _j = 25 °C			150	500	mA
I _L	T _j = 25 °C, R _G = 33 Ω			300	2000	mA
V _{GT}	T _j = 25 °C, d.c.		3			V
I _{GT}	T _j = 25 °C, d.c.		200			mA
V _{GD}	T _j = 135 °C, d.c.				0.25	V
I _{GD}	T _j = 135 °C, d.c.				10	mA
R _{th(j-c)}	continuous DC	per chip			0.069	K/W
		per module			0.034	K/W
R _{th(j-c)}	sin. 180°	per chip			0.072	K/W
		per module			0.036	K/W
R _{th(j-c)}	rec. 120°	per chip			0.077	K/W
		per module			0.038	K/W
Module						
R _{th(c-s)}	chip				0.02	K/W
	module				0.01	K/W
M _s	to heatsink M6		4.25		5.75	Nm
M _t	to heatsink M10		10.2		13.8	Nm
a					5 * 9,81	m/s ²
w				1400		g

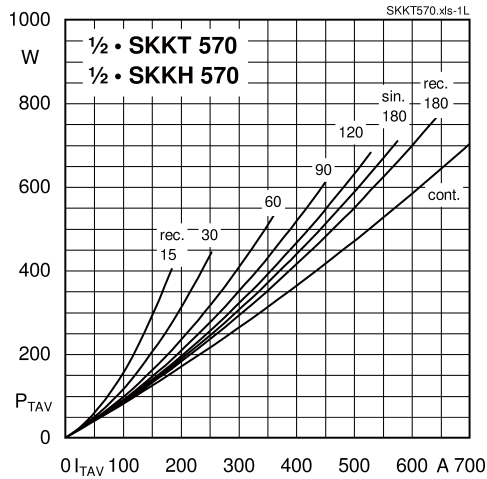


Fig. 1L: Power dissipation per thyristor vs. on-state current

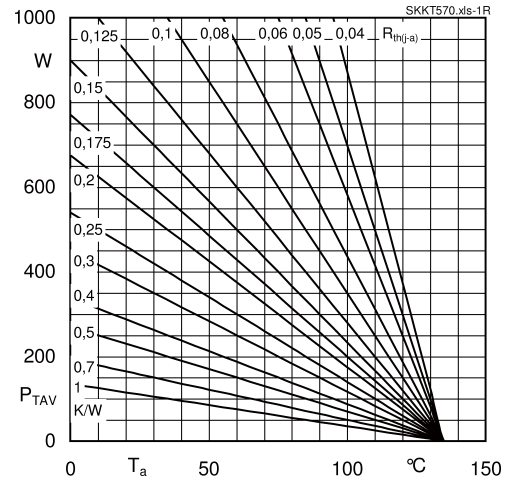


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

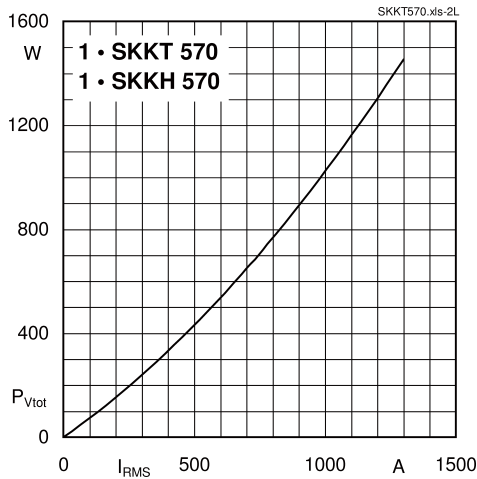


Fig. 2L: Power dissipation of one module vs. rms current

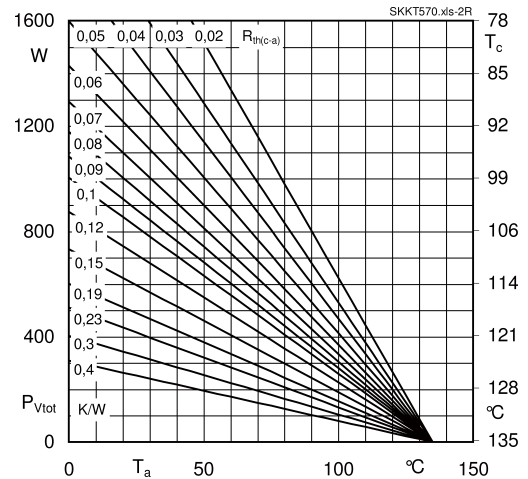


Fig. 2R: Max. power dissipation of one module vs. case temperature

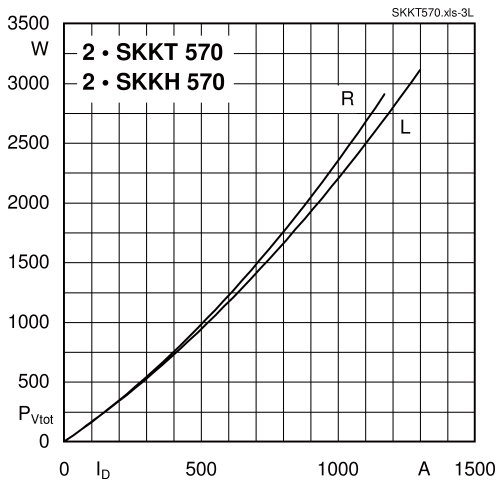


Fig. 3L: Power dissipation of two modules vs. direct current

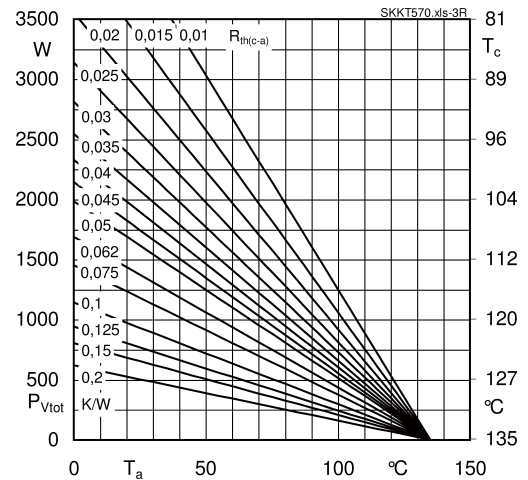


Fig. 3R: Power dissipation of two modules vs. case temperature

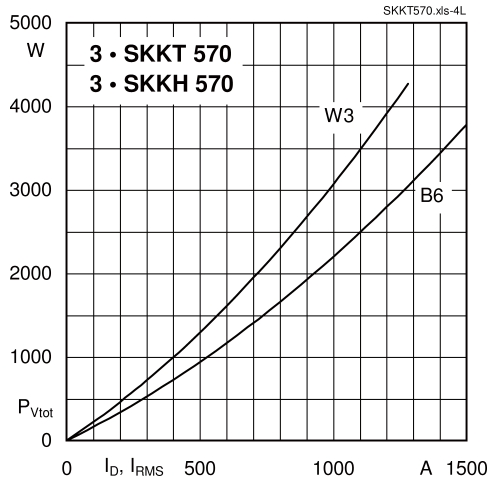


Fig. 4L: Power dissipation of three modules vs. direct and rms current

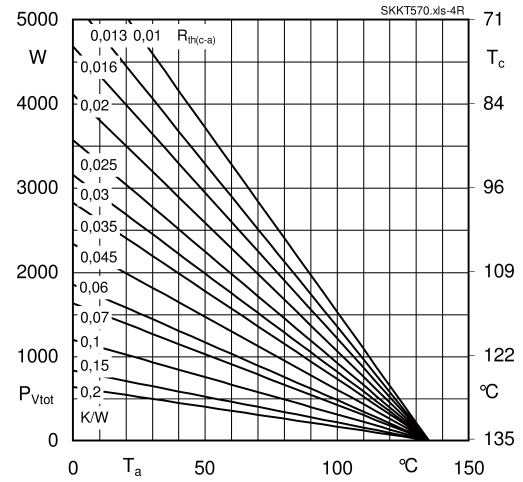


Fig. 4R: Power dissipation of three modules vs. case temperature

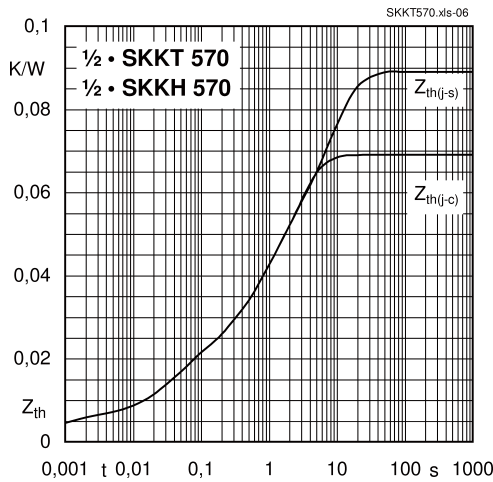


Fig. 6: Transient thermal impedance vs. time

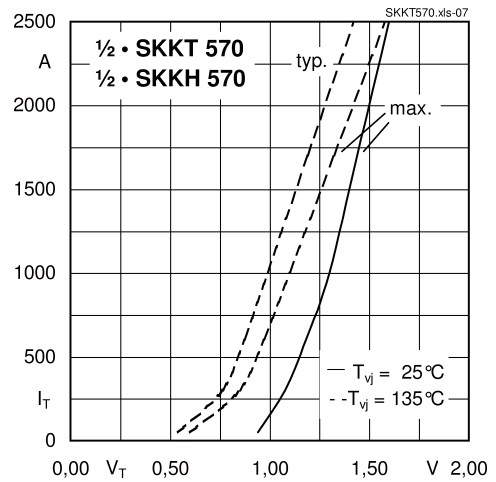


Fig. 7: On-state characteristics

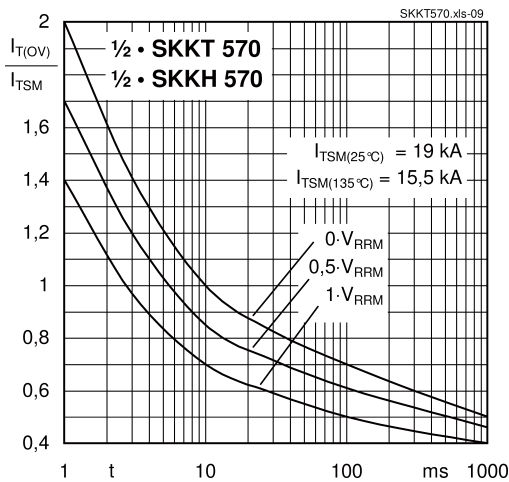


Fig. 8: Surge overload current vs. time

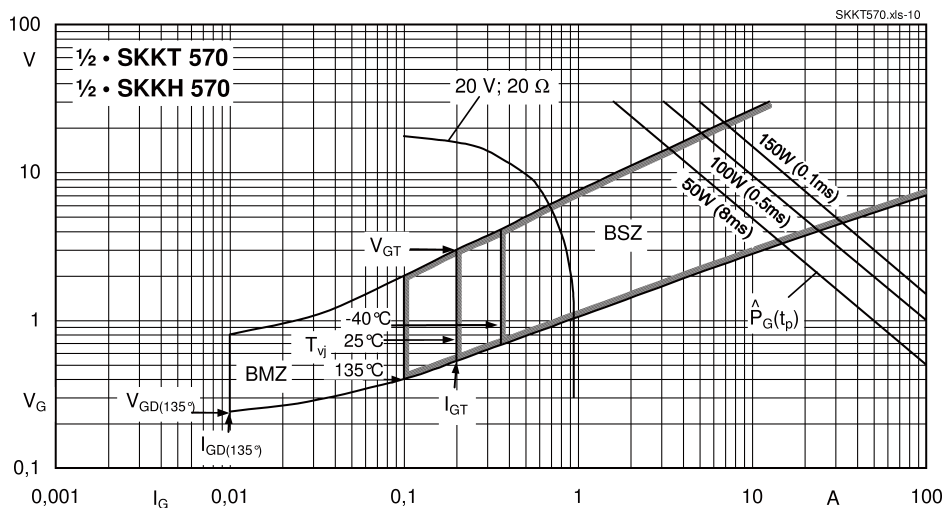
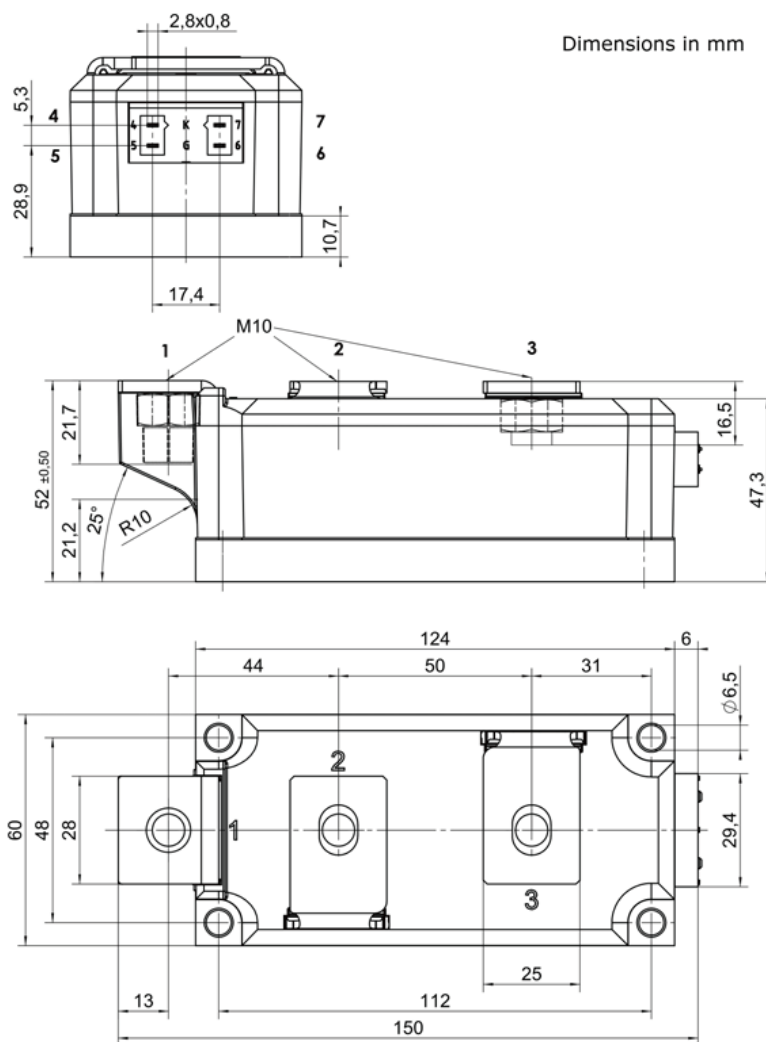


Fig. 9: Gate trigger characteristics



General tolerance ± 0.5 mm