

SEMIPACK® 5 Thyristor Modules

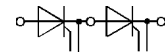
SKKT 500

Preliminary Data

V_{RS}	V_{RRM}	$(dv/dt)_{cr}$	I_{TRMS} (maximum values for continuous operation)
	V_{DRM}		920 A
V	V	V/ μ s	I_{TAV} (sin. 180; $T_{case} = 80\text{ }^{\circ}\text{C}$) 585 A
900	800	500	SKKT 500/08 D
1300	1200	1000	SKKT 500/12 E
1500	1400	1000	SKKT 500/14 E
1700	1600	1000	SKKT 500/16 E
1900	1800	1000	SKKT 500/18 E



Symbol	Conditions	SKKT 500	Units
I_{TAV}	sin. 180; $T_{case} = 85\text{ }^{\circ}\text{C}$	540	A
I_D	$T_{case} = 89\text{ }^{\circ}\text{C}$	500	A
I_{RMS}	B2/B6 W1/W3	$T_{amb} = 35\text{ }^{\circ}\text{C}$	P 16/200 F P 16/300 F
		665 / 845 850 / 3 x 670	A A
I_{TSM}	$T_{vj} = 25\text{ }^{\circ}\text{C}; 10\text{ ms}$	17 000	A
	$T_{vj} = 130\text{ }^{\circ}\text{C}; 10\text{ ms}$	15 000	A
i^2t	$T_{vj} = 25\text{ }^{\circ}\text{C}; 8,3 \dots 10\text{ ms}$	1 445 000	A^2s
	$T_{vj} = 130\text{ }^{\circ}\text{C}; 8,3 \dots 10\text{ ms}$	1 125 000	A^2s
t_{gd}	$T_{vj} = 25\text{ }^{\circ}\text{C}$	$I_G = 1\text{ A}$	
		$di_G/dt = 1\text{ A}/\mu\text{s}$	1 μs
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	2	μs
$(di/dt)_{cr}$	$T_{vj} = 130\text{ }^{\circ}\text{C}$	200	$\text{A}/\mu\text{s}$
t_q	$T_{vj} = 130\text{ }^{\circ}\text{C}$	typ. 100 ... 200	μs
I_H	$T_{vj} = 25\text{ }^{\circ}\text{C}; \text{typ./max.}$	150 / 500	mA
I_L	$T_{vj} = 25\text{ }^{\circ}\text{C}; R_G = 33\ \Omega; \text{typ./max.}$	0,3 / 2	A
V_T	$T_{vj} = 25\text{ }^{\circ}\text{C}; I_T = 1700\text{ A}$	max. 1,5	V
$V_{T(TO)}$	$T_{vj} = 130\text{ }^{\circ}\text{C}$	0,925	V
r_T	$T_{vj} = 130\text{ }^{\circ}\text{C}$	0,27	$\text{m}\Omega$
$I_{DD}; I_{RD}$	$T_{vj} = 130\text{ }^{\circ}\text{C}; V_{RD} = V_{RRM}$ $V_{DD} = V_{DRM}$	100	mA
V_{GT}	$T_{vj} = 25\text{ }^{\circ}\text{C}; \text{d.c.}$	3	V
I_{GT}	$T_{vj} = 25\text{ }^{\circ}\text{C}; \text{d.c.}$	200	mA
V_{GD}	$T_{vj} = 130\text{ }^{\circ}\text{C}; \text{d.c.}$	0,25	V
I_{GD}	$T_{vj} = 130\text{ }^{\circ}\text{C}; \text{d.c.}$	10	mA
R_{thjc}	cont.	0,062 / 0,031	$^{\circ}\text{C}/\text{W}$
	sin. 180	0,065 / 0,0325	$^{\circ}\text{C}/\text{W}$
	rec. 120	0,070 / 0,035	$^{\circ}\text{C}/\text{W}$
R_{thch}	} per thyristor / per module	0,02 / 0,01	$^{\circ}\text{C}/\text{W}$
T_{vj}		- 40 ... + 130	$^{\circ}\text{C}$
T_{stg}		- 40 ... + 130	$^{\circ}\text{C}$
V_{isol}		a. c. 50 Hz; r.m.s.; 1 s/1 min	3600/3000
M_1	to heatsink (M6)	SI units 5 \pm 15 % ¹⁾	Nm
		US units 44 \pm 15 % ¹⁾	lb.in.
M_2	to terminals (M10)	SI units 12 \pm 15 % ²⁾	Nm
		US units 106 \pm 15 % ²⁾	lb.in.
a		5 · 9,81	m/s^2
w	approx.	1420	g
Case		A 60	



SKKT

Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precise metal pressure contacts for high reliability
- UL recognition applied for: file no. E 63 632

Typical Applications

- AC motor starters
- Input converters for AC inverter drives
- DC motor control (e.g. for machine tools)
- Temperature control (e.g. for ovens, chemical processes)

¹⁾ See the assembly instructions
²⁾ The screws must be lubricated

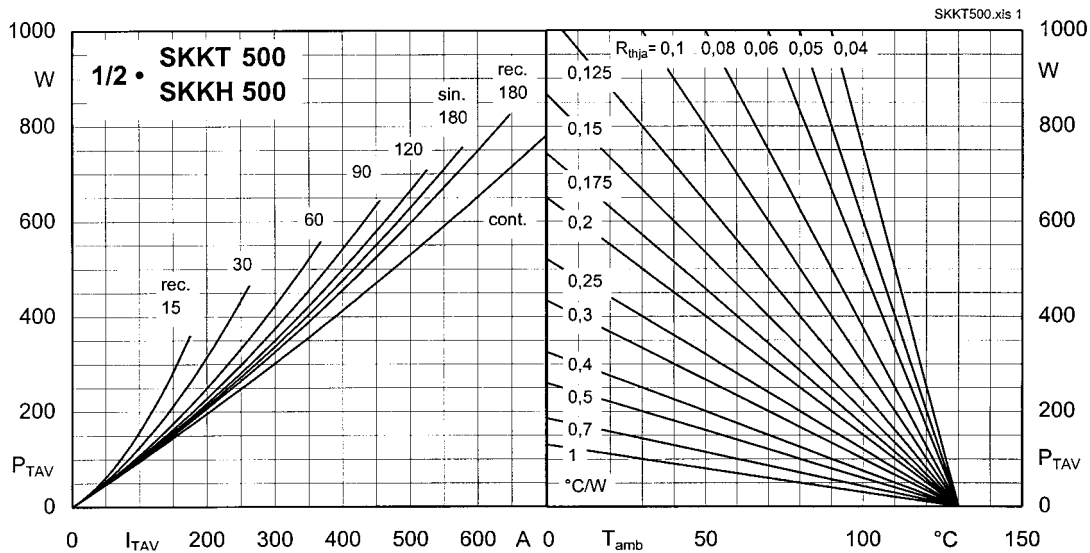


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

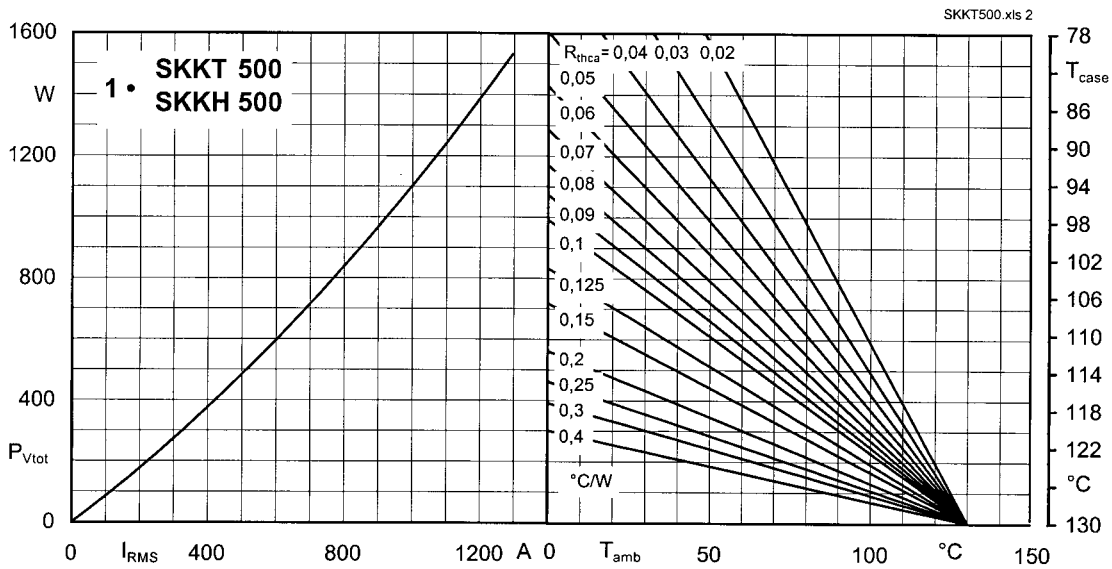


Fig. 2 Power dissipation per module vs. rms current and case temperature

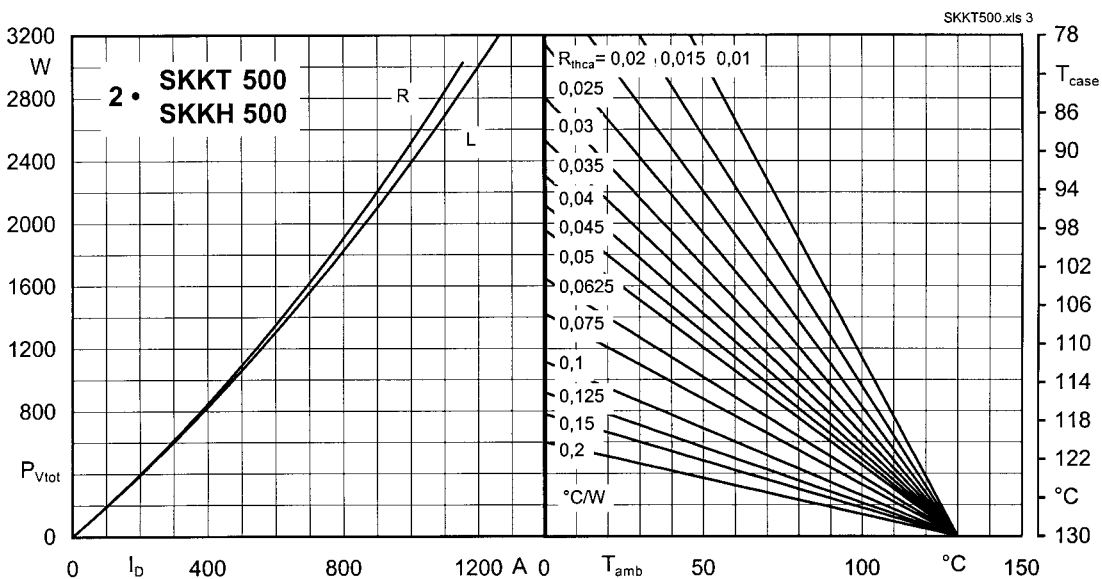


Fig. 3 Power dissipation of two module vs. direct current and case temperature

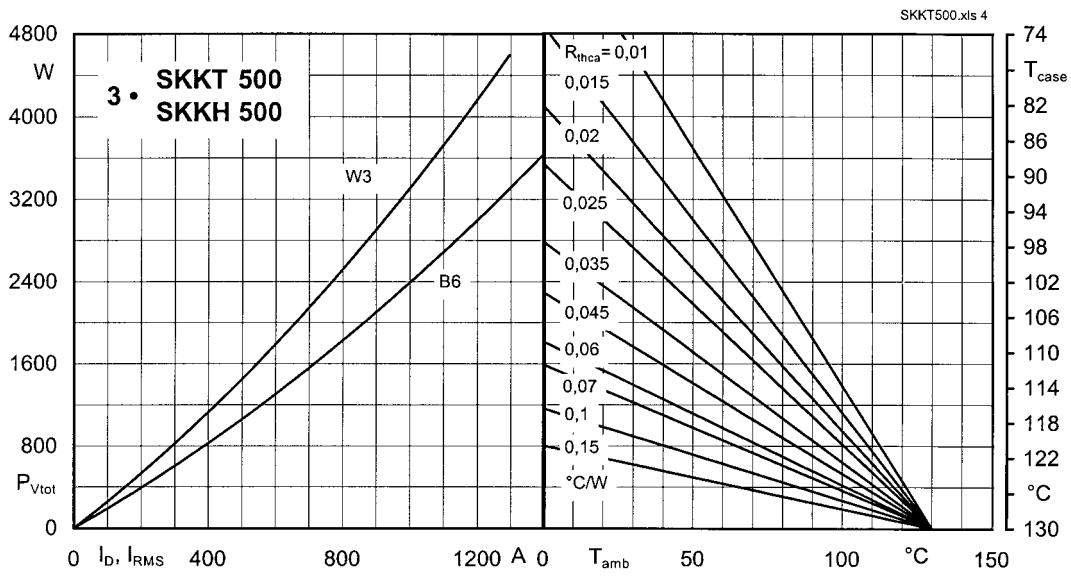
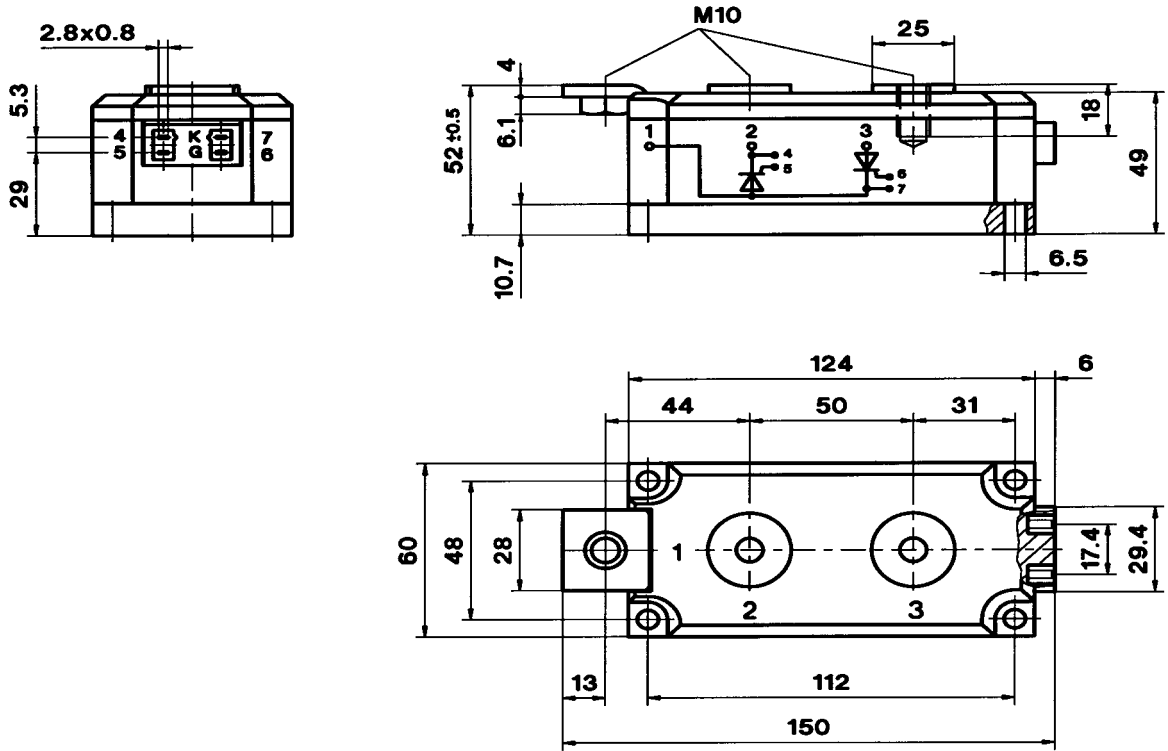


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

SKKT 500

Case A 60
SEMIPACK® 5

UL recognition, file E63532
applied for



Dimensions in mm