



SEMIPACK® 3

Thyristor / Diode Modules

SKKH 330

SKKT 330

Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

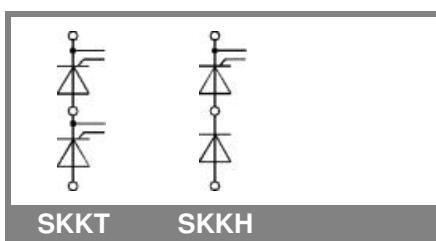
Typical Applications*

- DC motor control (e. g. for machine tools)
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

¹⁾ See the assembly instruction

V_{RSM}	V_{RRM}, V_{DRM}	$I_{TRMS} = 510 \text{ A}$ (maximum value for continuous operation)		
V	V	$I_{TAV} = 330 \text{ A}$ (sin. 180; $T_c = 80 \text{ °C}$)		
900	800	SKKT 330/08E	SKKH 330/08E	
1300	1200	SKKT 330/12E	SKKH 330/12E	
1700	1600	SKKT 330/16E	SKKH 330/16E	
1900	1800	SKKT 330/18E	SKKH 330/18E	

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; $T_c = 85$ (100) °C ;	305 (225)	A
I_D	P16/200F; $T_a = 35 \text{ °C}$; B2 / B6	520 / 650	A
I_{RMS}	P16/200F; $T_a = 35 \text{ °C}$; W1 / W3	585 / 3 * 485	A
I_{TSM}	$T_{vj} = 25 \text{ °C}$; 10 ms	9500	A
	$T_{vj} = 130 \text{ °C}$; 10 ms	8000	A
i^2t	$T_{vj} = 25 \text{ °C}$; 8,3 ... 10 ms	451000	A ² s
	$T_{vj} = 130 \text{ °C}$; 8,3 ... 10 ms	320000	A ² s
V_T	$T_{vj} = 25 \text{ °C}$; $I_T = 750 \text{ A}$	max. 1,4	V
$V_{T(TO)}$	$T_{vj} = 130 \text{ °C}$	max. 0,8	V
r_T	$T_{vj} = 130 \text{ °C}$	max. 0,6	m Ω
I_{DD}, I_{RD}	$T_{vj} = 130 \text{ °C}$; $V_{RD} = V_{RRM}$; $V_{DD} = V_{DRM}$	max. 85	mA
t_{gd}	$T_{vj} = 25 \text{ °C}$; $I_G = 1 \text{ A}$; $di_G/dt = 1 \text{ A}/\mu\text{s}$	1	μs
t_{gr}	$V_D = 0,67 * V_{DRM}$	2	μs
$(di/dt)_{cr}$	$T_{vj} = 130 \text{ °C}$	max. 250	A/ μs
$(dv/dt)_{cr}$	$T_{vj} = 130 \text{ °C}$	max. 1000	V/ μs
t_q	$T_{vj} = 130 \text{ °C}$,	50 ... 150	μs
I_H	$T_{vj} = 25 \text{ °C}$; typ. / max.	150 / 500	mA
I_L	$T_{vj} = 25 \text{ °C}$; $R_G = 33 \Omega$; typ. / max.	300 / 2000	mA
V_{GT}	$T_{vj} = 25 \text{ °C}$; d.c.	min. 3	V
I_{GT}	$T_{vj} = 25 \text{ °C}$; d.c.	min. 200	mA
V_{GD}	$T_{vj} = 130 \text{ °C}$; d.c.	max. 0,25	V
I_{GD}	$T_{vj} = 130 \text{ °C}$; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,11 / 0,055	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,116 / 0,058	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,13 / 0,065	K/W
$R_{th(c-s)}$	per thyristor / per module	0,04 / 0,02	K/W
T_{vj}		- 40 ... + 130	°C
T_{stg}		- 40 ... + 130	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 / 3000	V~
M_s	to heatsink	5 ± 15 % ¹⁾	Nm
M_t	to terminals	9 ± 15 %	Nm
a		5 * 9,81	m/s^2
m	approx.	600	g
Case	SKKT SKKH	A 73b A 76b	



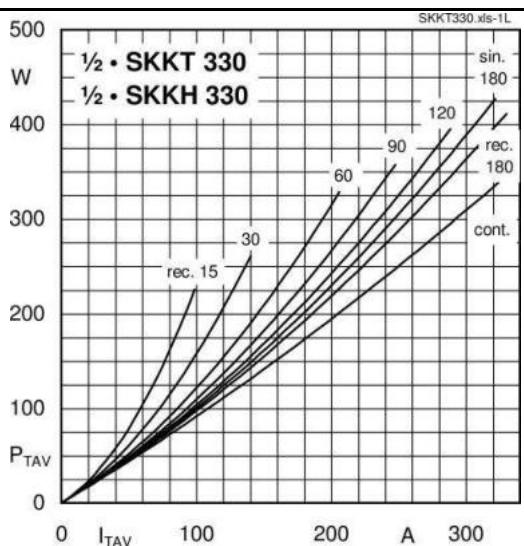


Fig. 1L Power dissipation per thyristor vs. on-state current

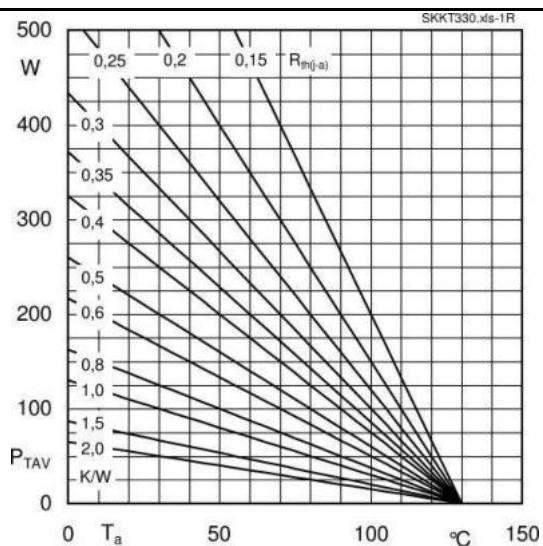


Fig. 1R Power dissipation per thyristor vs. ambient temp.

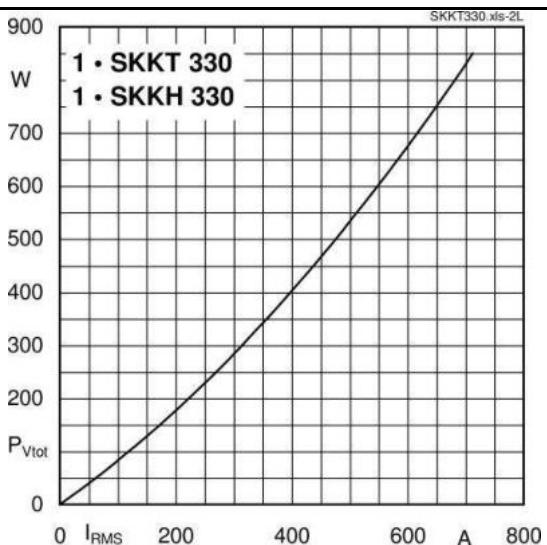


Fig. 2L Power dissipation per module vs. rms current

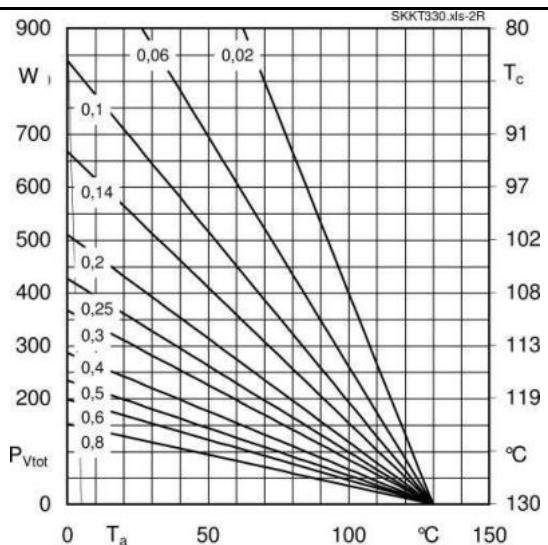


Fig. 2R Power dissipation per module vs. case temp.

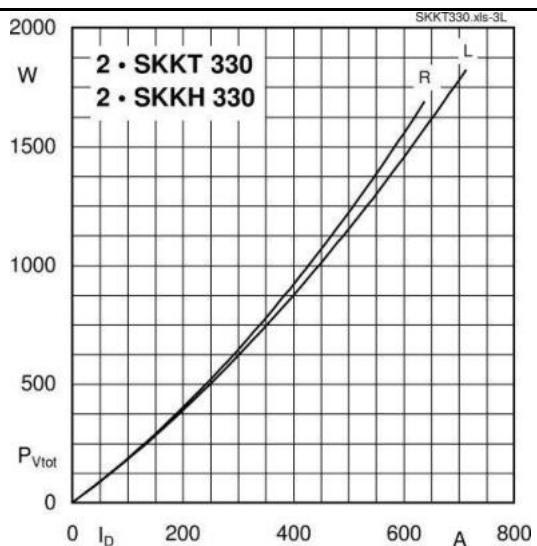


Fig. 3L Power dissipation of two modules vs. direct current

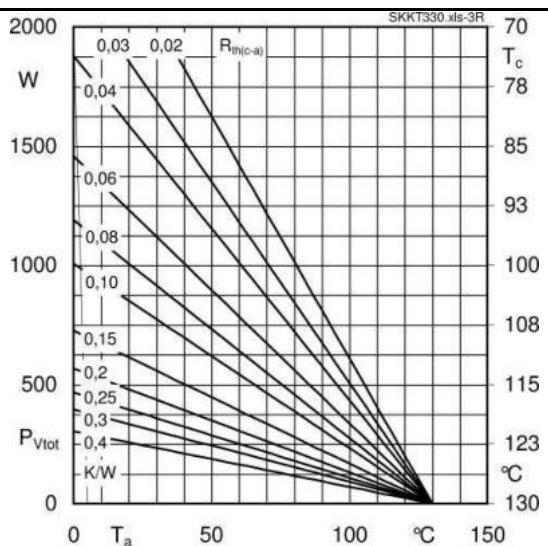


Fig. 3R Power dissipation of two modules vs. case temp.

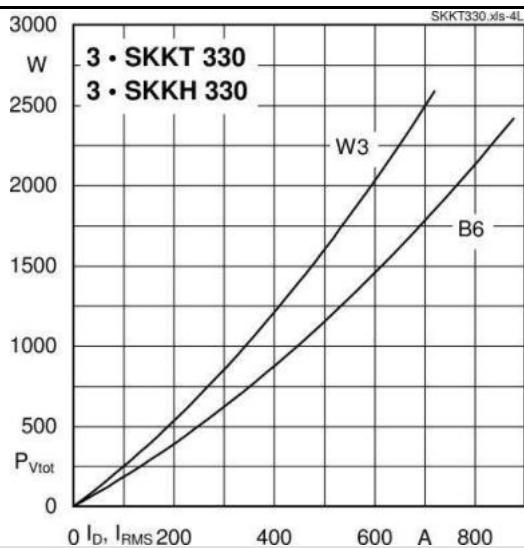


Fig. 4L Power dissipation of three modules vs. direct and rms current

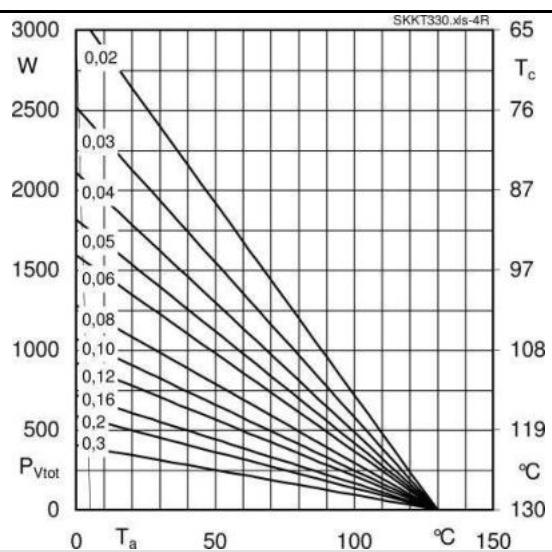


Fig. 4R Power dissipation of three modules vs. case temp.

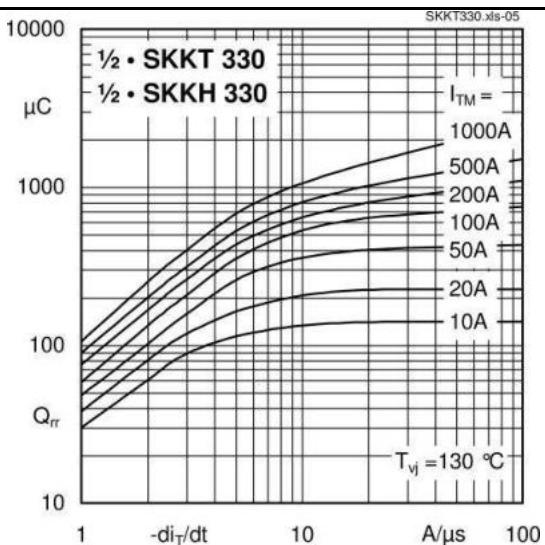


Fig. 5 Recovered charge vs. current decrease

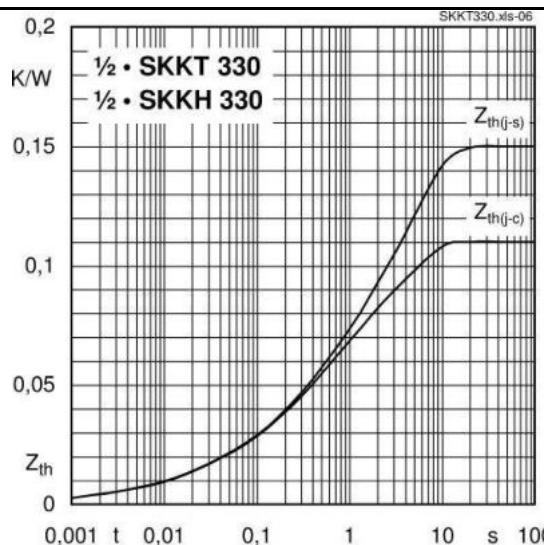


Fig. 6 Transient thermal impedance vs. time

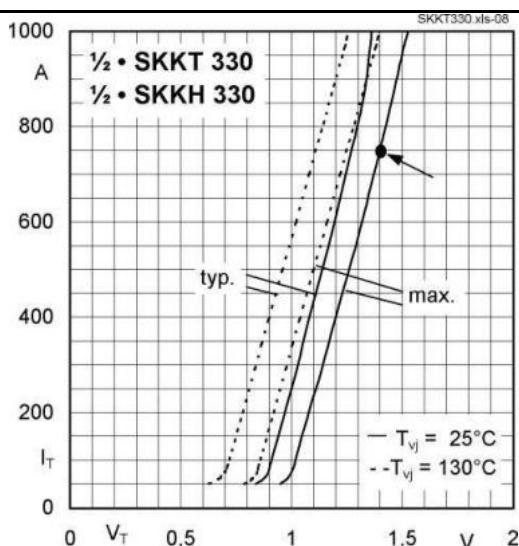


Fig. 7 On-state characteristics

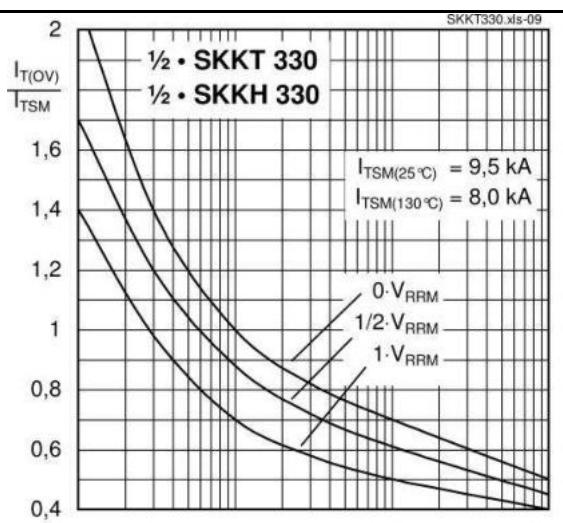
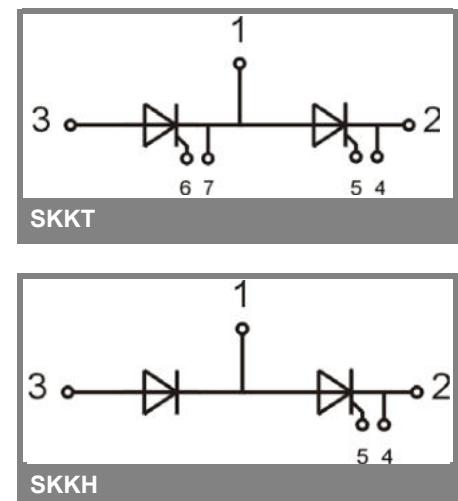
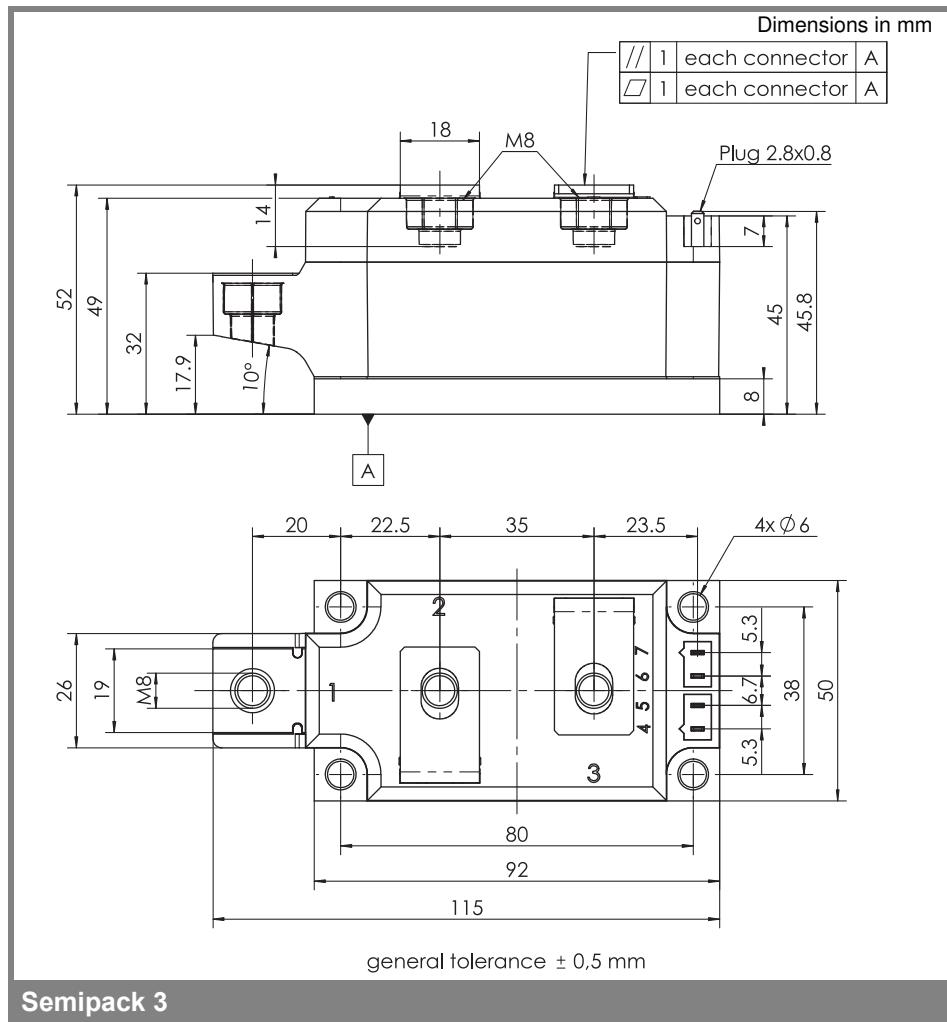
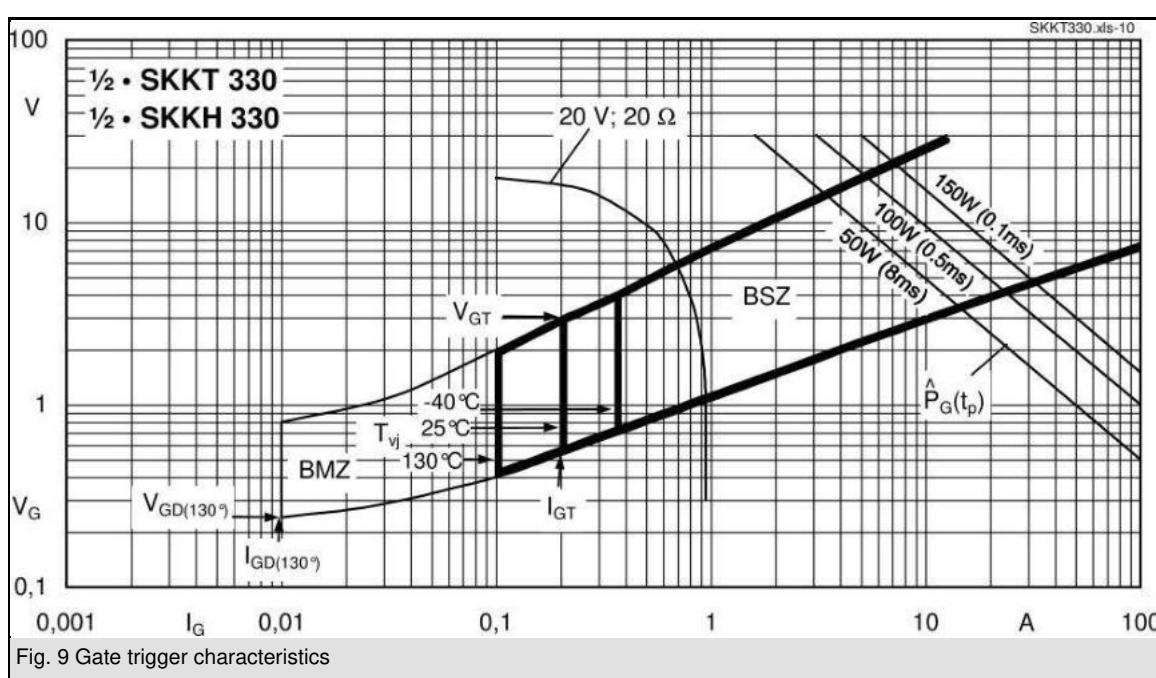


Fig. 8 Surge overload current vs. time



This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

*IMPORTANT INFORMATION AND WARNINGS

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