

SEMIPACK® 1

Thyristor / Diode Modules

SKKT 72 H4

SKKH 72 H4

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63532

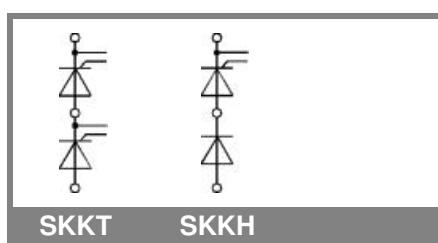
Typical Applications*

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

1) See the assembly instructions

V_{RSM} V 2100 2300	V_{RRM}, V_{DRM} V 2000 2200	$I_{TRMS} = 125 \text{ A}$ (maximum value for continuous operation)		
		$I_{TAV} = 70 \text{ A}$ (sin. 180; $T_c = 85^\circ\text{C}$)	SKKT 72/20E H4	SKKH 72/20E H4
		SKKT 72/22E H4	SKKH 72/22E H4	

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; $T_c = 85$ (100) $^\circ\text{C}$; P3/180; $T_a = 45^\circ\text{C}$; B2 / B6	70 (50)	A
I_D	P3/180F; $T_a = 35^\circ\text{C}$; B2 / B6	62 / 75	A
I_{RMS}	P3/180F; $T_a = 35^\circ\text{C}$; W1 / W3	115 / 145	A
I_{TSM}	$T_{vj} = 25^\circ\text{C}$; 10 ms	155 / 3 * 115	A
	$T_{vj} = 125^\circ\text{C}$; 10 ms	1600	A
i^2t	$T_{vj} = 25^\circ\text{C}$; 8,3 ... 10 ms	1450	A
	$T_{vj} = 125^\circ\text{C}$; 8,3 ... 10 ms	13000	A ² s
V_T	$T_{vj} = 25^\circ\text{C}$; $I_T = 300 \text{ A}$	10500	A ² s
$V_{T(TO)}$	$T_{vj} = 125^\circ\text{C}$	max. 1,9	A
r_T	$T_{vj} = 125^\circ\text{C}$	max. 0,9	V
I_{DD}, I_{RD}	$T_{vj} = 125^\circ\text{C}$; $V_{RD} = V_{RRM}$; $V_{DD} = V_{DRM}$	max. 3,5	mΩ
t_{gd}	$T_{vj} = 25^\circ\text{C}$; $I_G = 1 \text{ A}$; $dI_G/dt = 1 \text{ A}/\mu\text{s}$	max. 30	mA
t_{gr}	$V_D = 0,67 * V_{DRM}$	1	μs
$(di/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	1	μs
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	max. 150	A/μs
t_q	$T_{vj} = 125^\circ\text{C}$,	max. 1000	V/μs
I_H	$T_{vj} = 25^\circ\text{C}$; typ. / max.	80	μs
I_L	$T_{vj} = 25^\circ\text{C}$; $R_G = 33 \Omega$; typ. / max.	150 / 250	mA
		300 / 600	mA
V_{GT}	$T_{vj} = 25^\circ\text{C}$; d.c.	min. 3	V
I_{GT}	$T_{vj} = 25^\circ\text{C}$; d.c.	min. 150	mA
V_{GD}	$T_{vj} = 125^\circ\text{C}$; d.c.	max. 0,25	V
I_{GD}	$T_{vj} = 125^\circ\text{C}$; d.c.	max. 6	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,35 / 0,18	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,37 / 0,19	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,39 / 0,2	K/W
$R_{th(c-s)}$	per thyristor / per module	0,2 / 0,1	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 125	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	4800 / 4000	V~
M_s	to heatsink	5 ± 15 % ¹⁾	Nm
M_t	to terminals	3 ± 15 %	Nm
a		5 * 9,81	m/s ²
m	approx.	95	g
Case	SKKT SKKH	A 46 A 47	



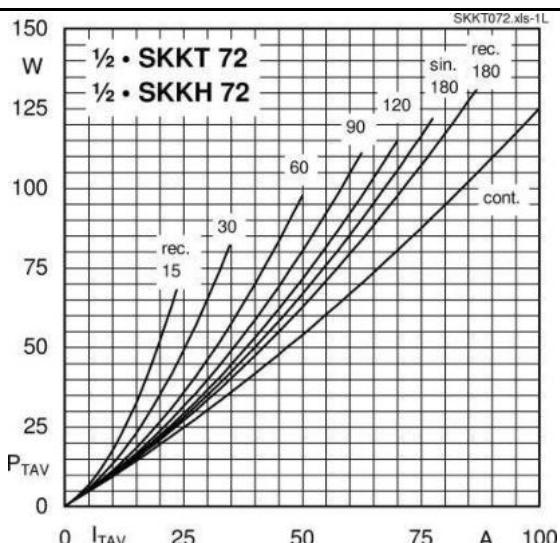


Fig. 1L Power dissipation per thyristor vs. on-state current

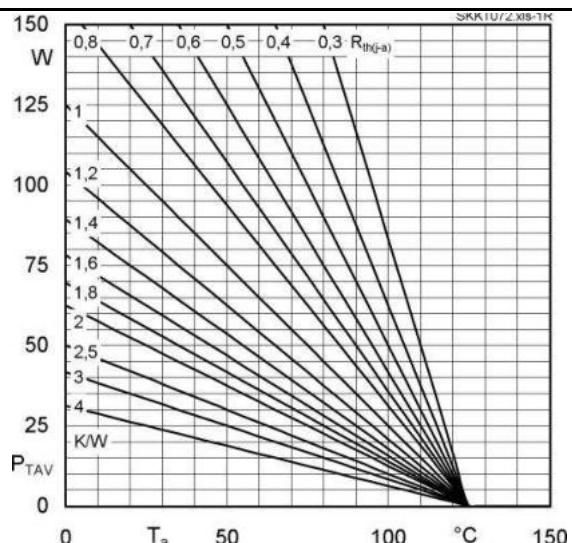


Fig. 1R Power dissipation per thyristor vs. ambient temp.

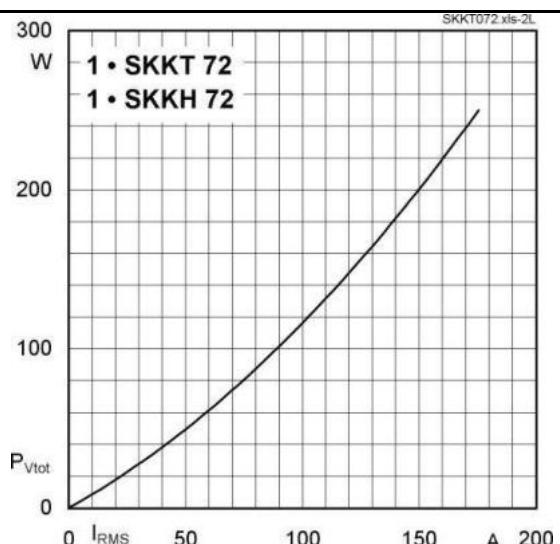


Fig. 2L Power dissipation per module vs. rms current

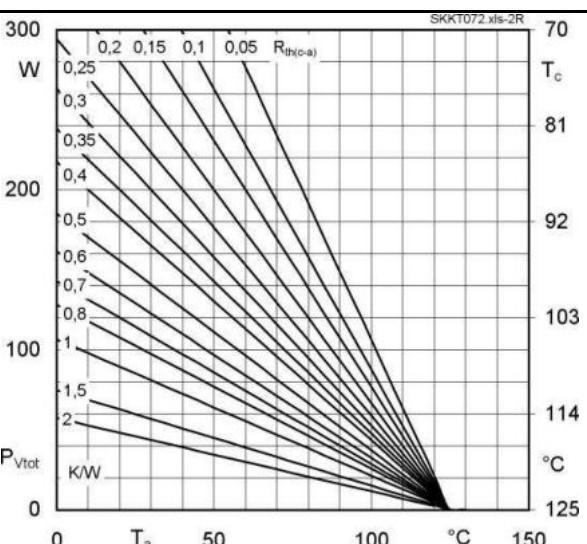


Fig. 2R Power dissipation per module vs. case temp.

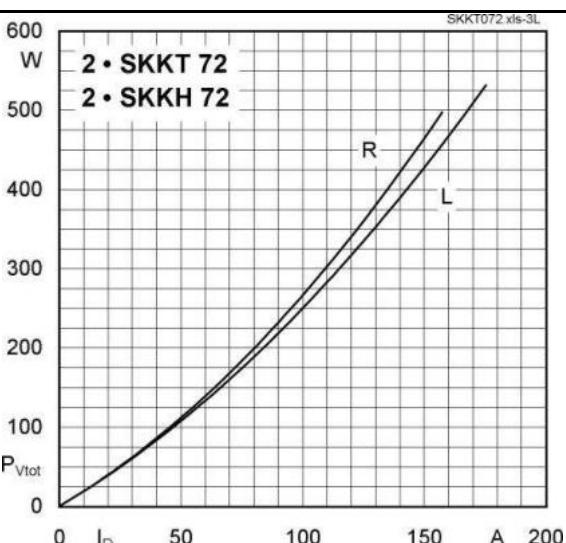


Fig. 3L Power dissipation of two modules vs. direct current

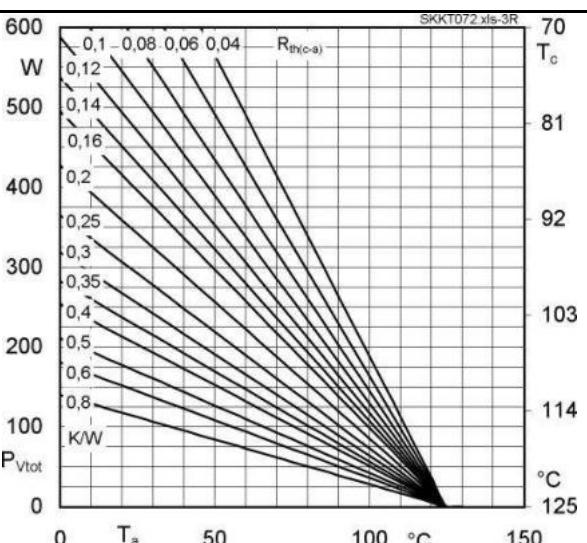


Fig. 3R Power dissipation of two modules vs. case temp.

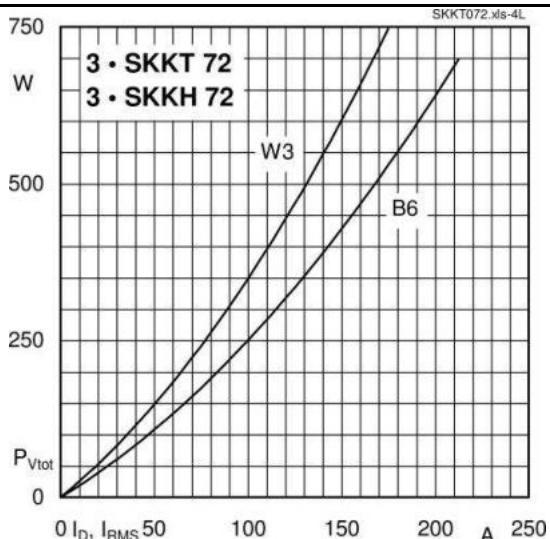


Fig. 4L Power dissipation of three modules vs. direct and rms current

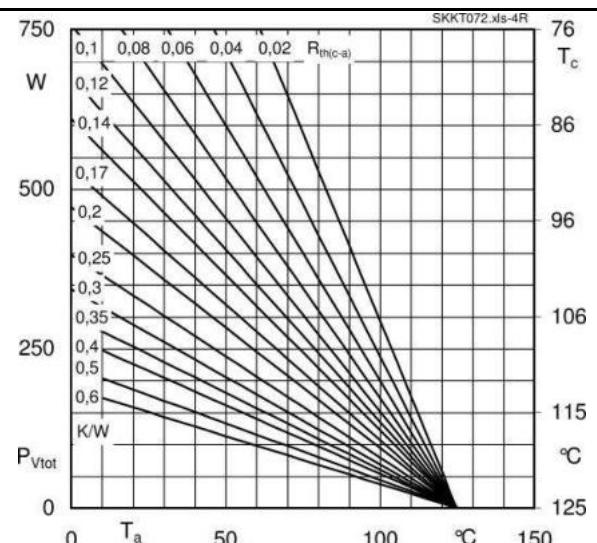


Fig. 4R Power dissipation of three modules vs. case temp.

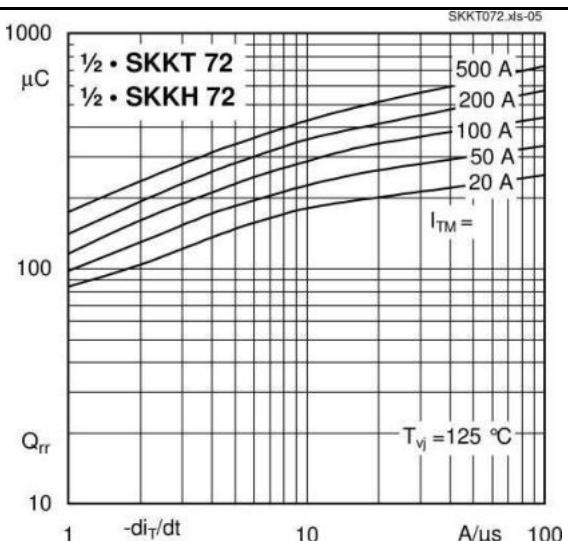


Fig. 5 Recovered charge vs. current decrease

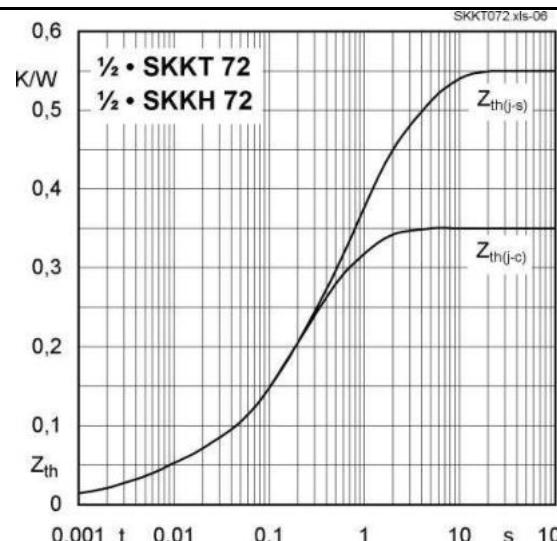


Fig. 6 Transient thermal impedance vs. time

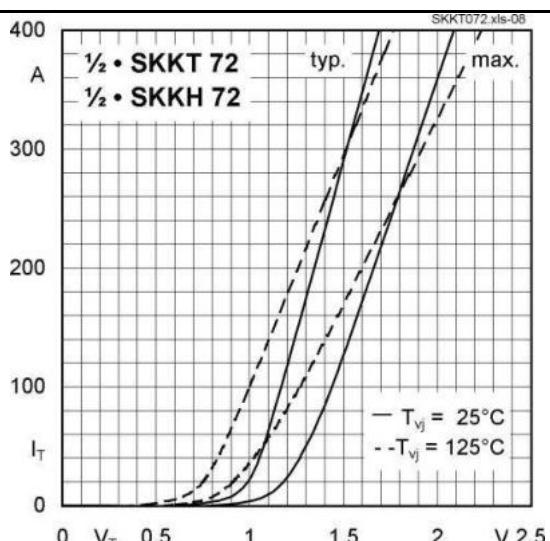


Fig. 7 On-state characteristics

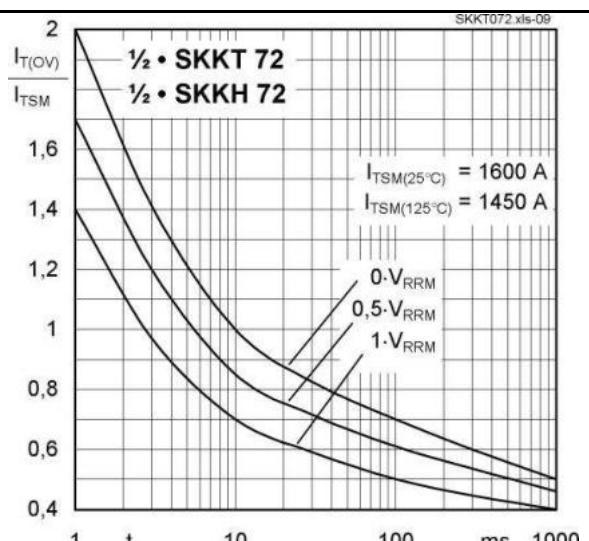
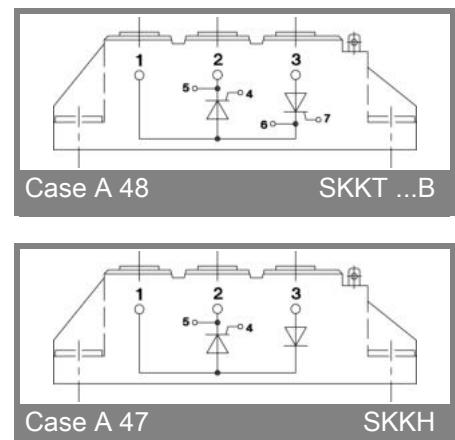
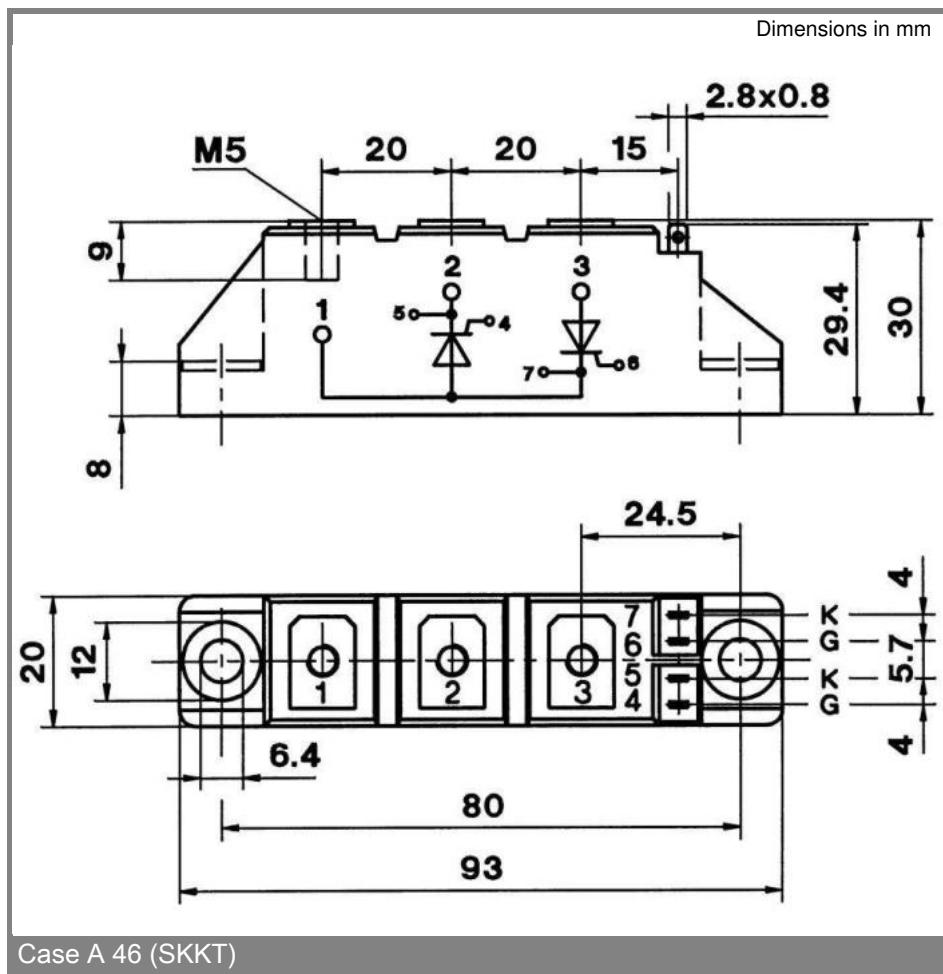
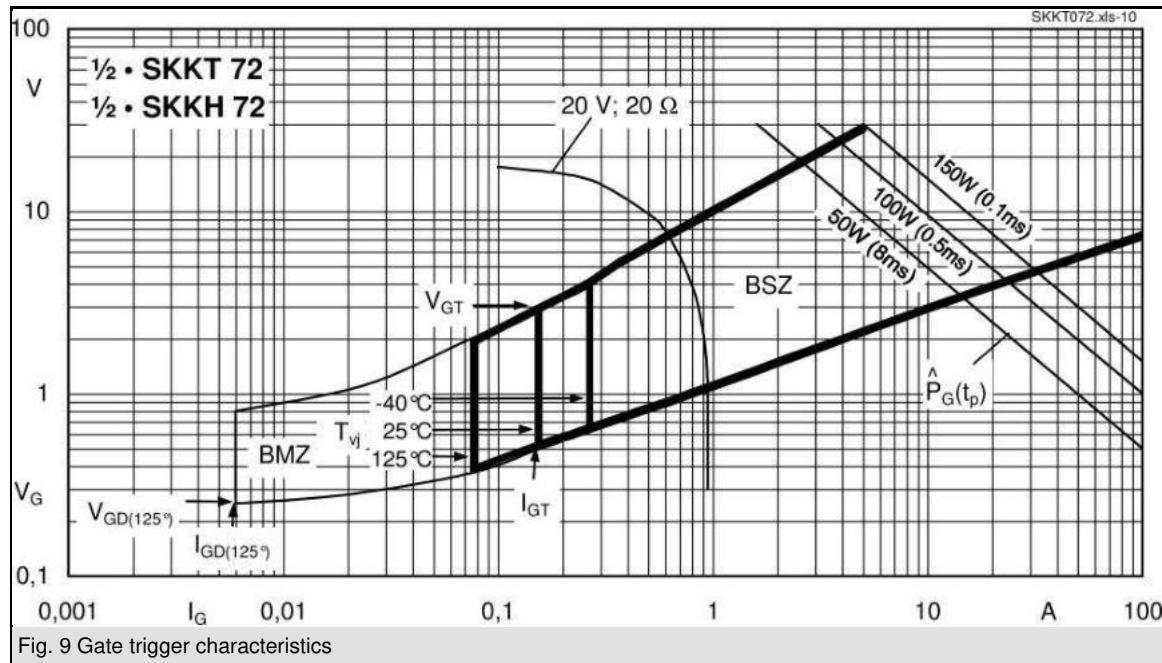


Fig. 8 Surge overload current vs. time



* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.