

## SEMIPACK® 1

### Thyristor / Diode Modules

#### SKKT 92

#### SKKT 92B

#### SKKH 92

#### Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63 532

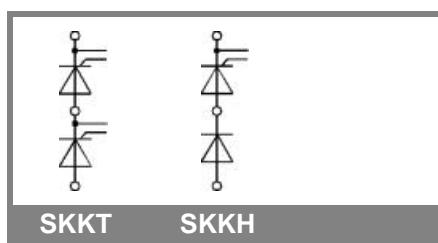
#### Typical Applications

- 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)

<sup>1)</sup> See the assembly instructions

$V_{RSM}$	$V_{RRM}, V_{DRM}$	$I_{TRMS} = 150 \text{ A}$ (maximum value for continuous operation) $I_{TAV} = 95 \text{ A}$ (sin. 180; $T_c = 85^\circ\text{C}$ )		
V	V			
900	800	SKKT 92/08E	SKKT 92B08E	SKKH 92/08E
1300	1200	SKKT 92/12E	SKKT 92B12E	SKKH 92/12E
1500	1400	SKKT 92/14E	SKKT 92B14E	SKKH 92/14E
1700	1600	SKKT 92/16E	SKKT 92B16E	SKKH 92/16E
1900	1800	SKKT 92/18E	SKKT 92B18E	SKKH 92/18E

Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 85$ (100) $^\circ\text{C}$ ;	95 (68)	A
$I_D$	P3/180; $T_a = 45^\circ\text{C}$ ; B2 / B6	70 / 85	A
	P3/180F; $T_a = 35^\circ\text{C}$ ; B2 / B6	140 / 175	A
$I_{RMS}$	P3/180F; $T_a = 35^\circ\text{C}$ ; W1 / W3	190 / 3 * 135	A
$I_{TSM}$	$T_{vj} = 25^\circ\text{C}$ ; 10 ms	2000	A
	$T_{vj} = 125^\circ\text{C}$ ; 10 ms	1750	A
$i^2t$	$T_{vj} = 25^\circ\text{C}$ ; 8,3 ... 10 ms	20000	A <sup>2</sup> s
	$T_{vj} = 125^\circ\text{C}$ ; 8,3 ... 10 ms	15000	A <sup>2</sup> s
$V_T$	$T_{vj} = 25^\circ\text{C}$ ; $I_T = 300 \text{ A}$	max. 1,65	V
$V_{T(TO)}$	$T_{vj} = 125^\circ\text{C}$	max. 0,9	V
$r_T$	$T_{vj} = 125^\circ\text{C}$	max. 2	mΩ
$I_{DD}; I_{RD}$	$T_{vj} = 125^\circ\text{C}$ ; $V_{RD} = V_{RRM}$ ; $V_{DD} = V_{DRM}$	max. 20	mA
$t_{gd}$	$T_{vj} = 25^\circ\text{C}$ ; $I_G = 1 \text{ A}$ ; $dI_G/dt = 1 \text{ A}/\mu\text{s}$	1	μs
$t_{gr}$	$V_D = 0,67 * V_{DRM}$	2	μs
$(di/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	max. 150	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	max. 1000	V/μs
$t_q$	$T_{vj} = 125^\circ\text{C}$ ,	100	μs
$I_H$	$T_{vj} = 25^\circ\text{C}$ ; typ. / max.	150 / 250	mA
$I_L$	$T_{vj} = 25^\circ\text{C}$ ; $R_G = 33 \Omega$ ; typ. / max.	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	0,28 / 0,14	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,3 / 0,15	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,32 / 0,16	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.	3600 / 3000	V~
$M_s$	to heatsink	5 ± 15 % <sup>1)</sup>	Nm
$M_t$	to terminals	3 ± 15 %	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	95	g
Case	SKKT SKKT ...B SKKH	A 46 A 48 A 47	



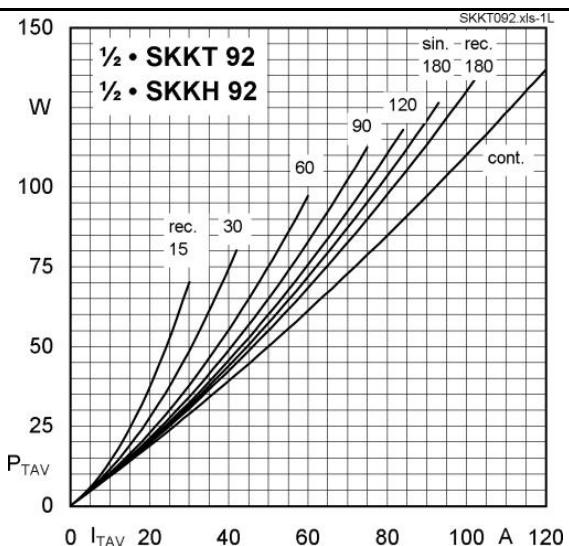


Fig. 1L Power dissipation per thyristor vs. on-state current

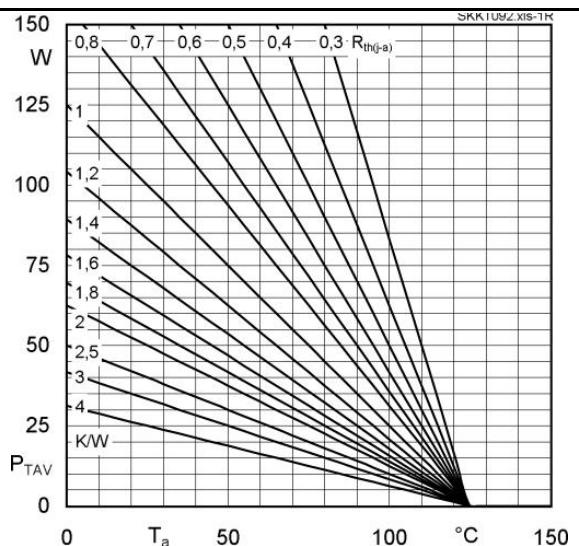


Fig. 1R Power dissipation per thyristor vs. ambient temp.

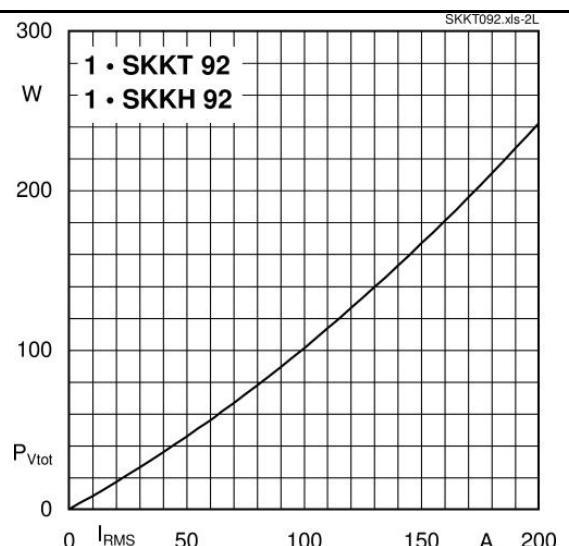


Fig. 2L Power dissipation per module vs. rms current

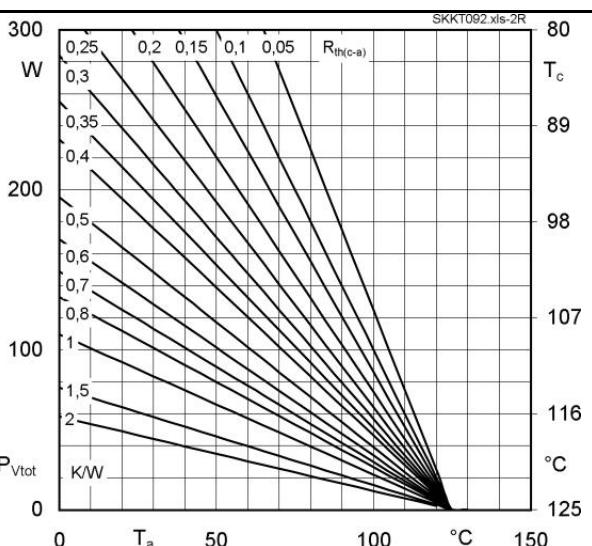


Fig. 2R Power dissipation per module vs. case temp.

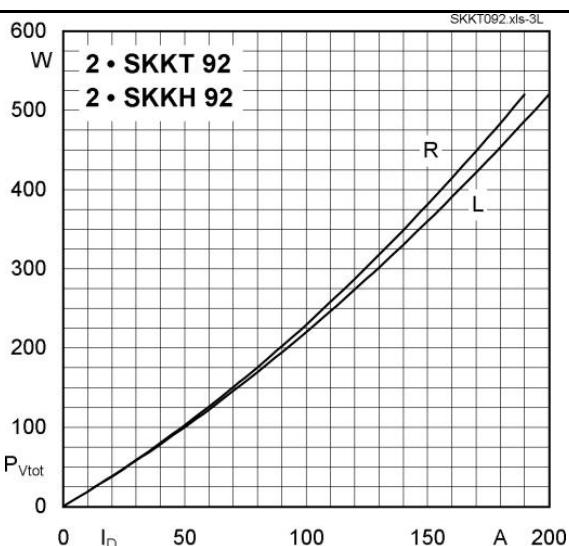
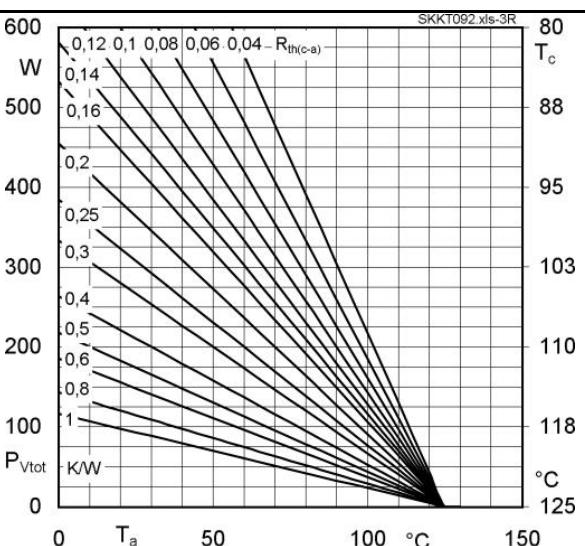


Fig. 3L Power dissipation of two modules vs. direct current



# SKKT 92, SKKH 92, SKKT 92B

THYRISTOR

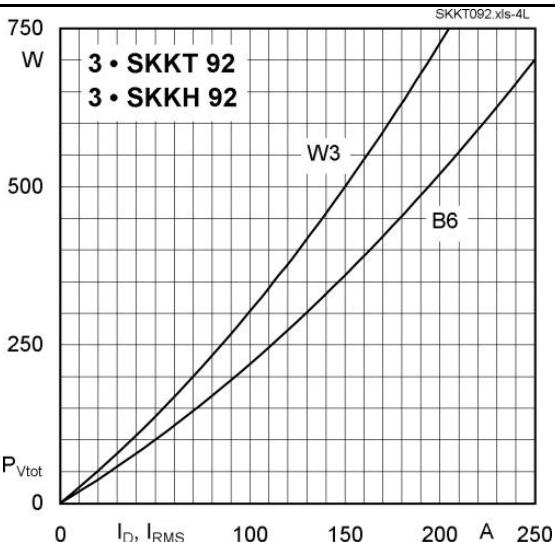


Fig. 4L Power dissipation of three modules vs. direct and rms current

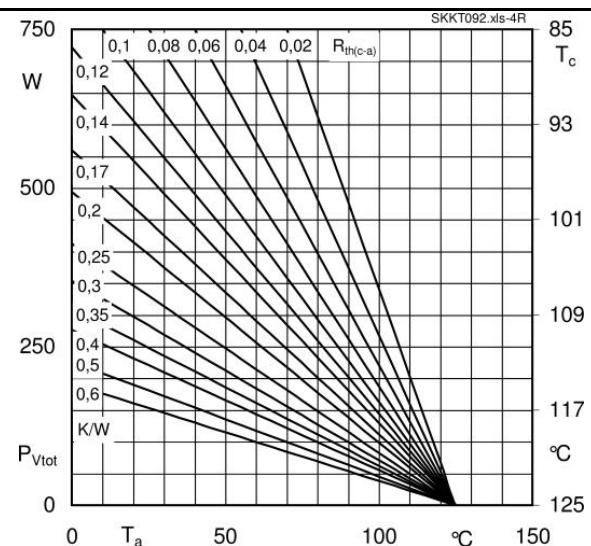


Fig. 4R Power dissipation of three modules vs. case temp.

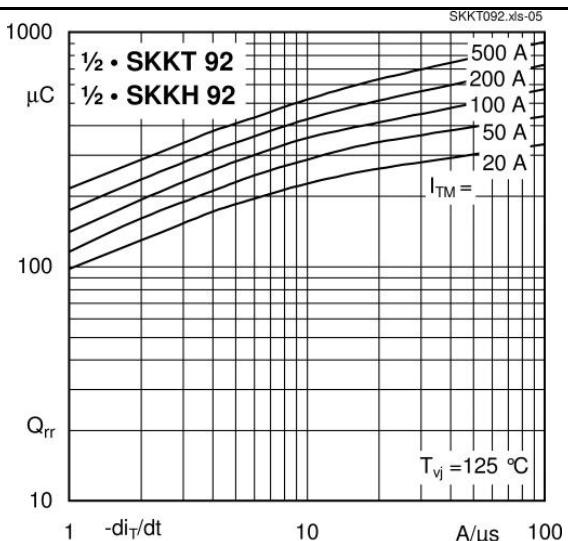


Fig. 5 Recovered charge vs. current decrease

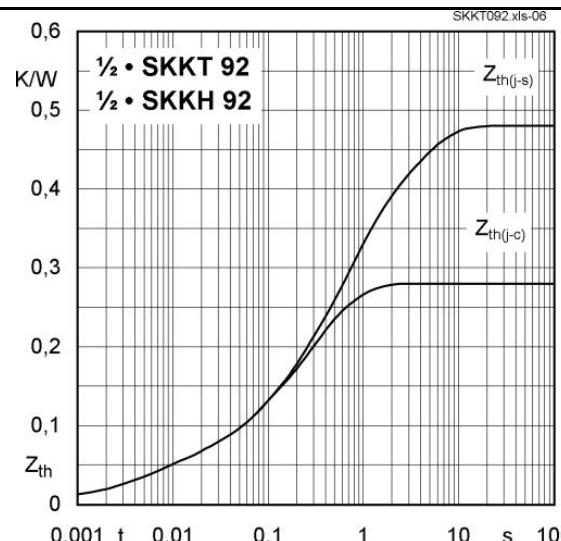


Fig. 6 Transient thermal impedance vs. time

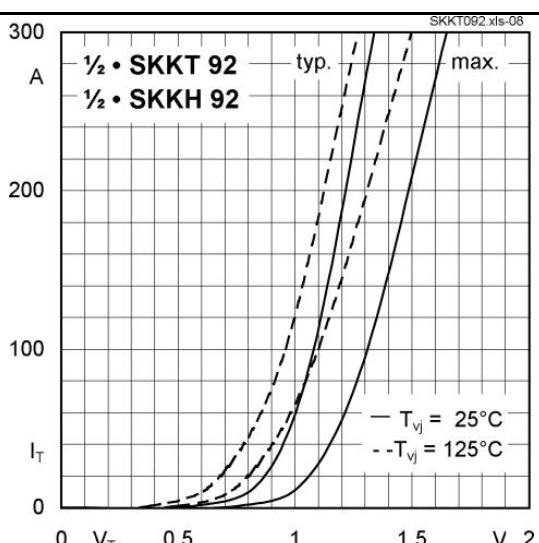


Fig. 7 On-state characteristics

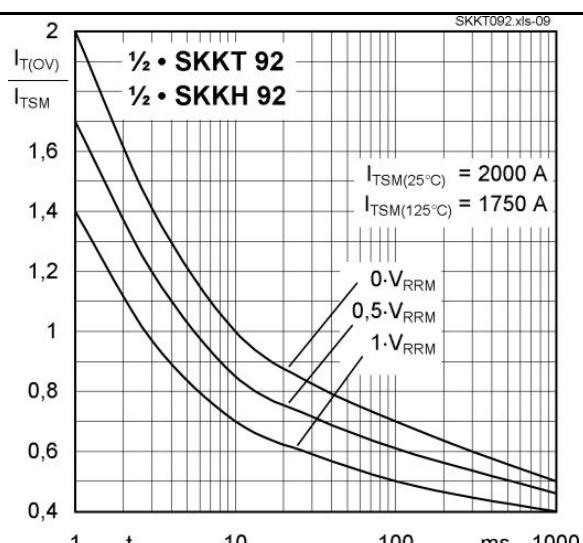
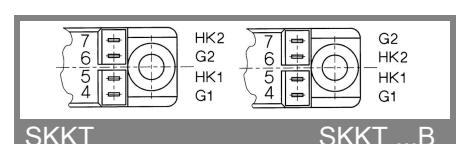
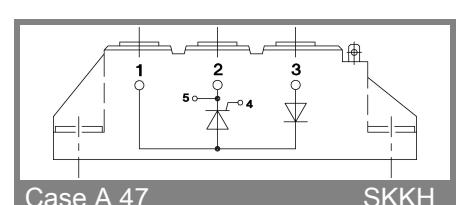
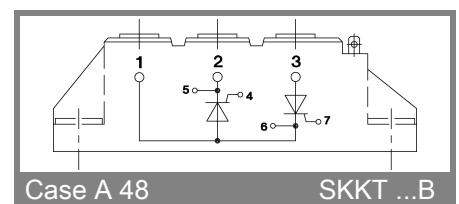
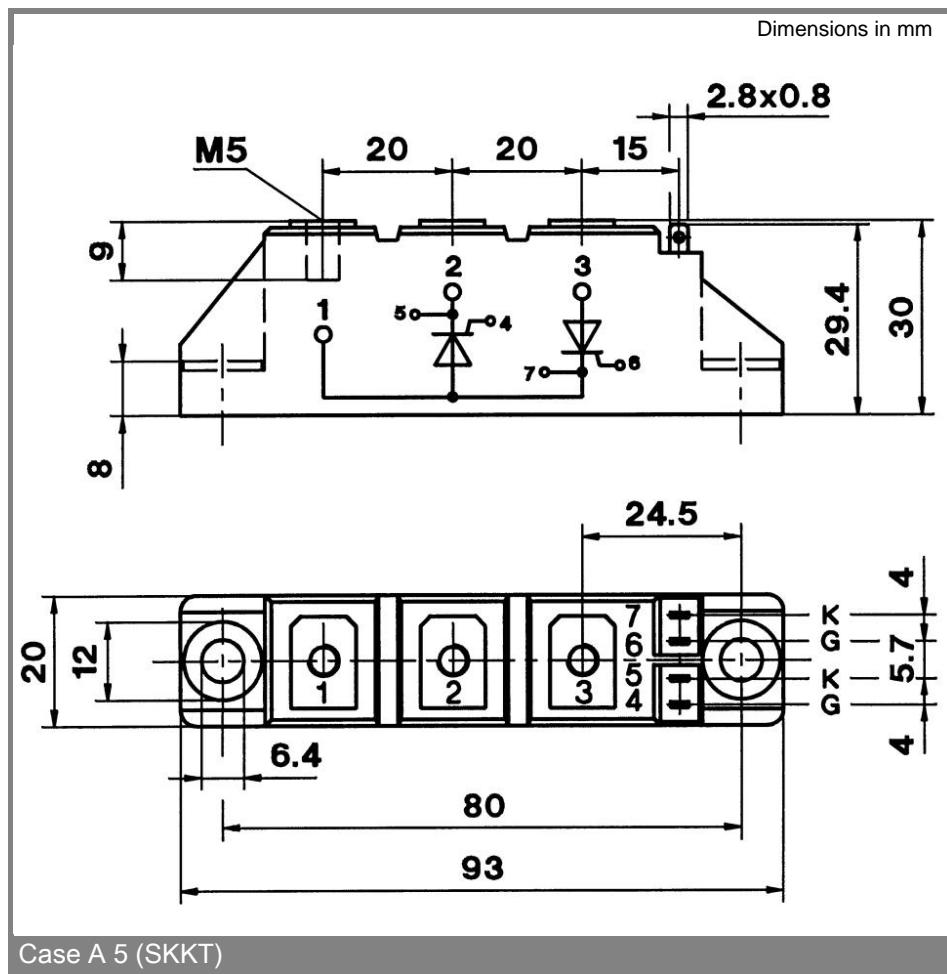
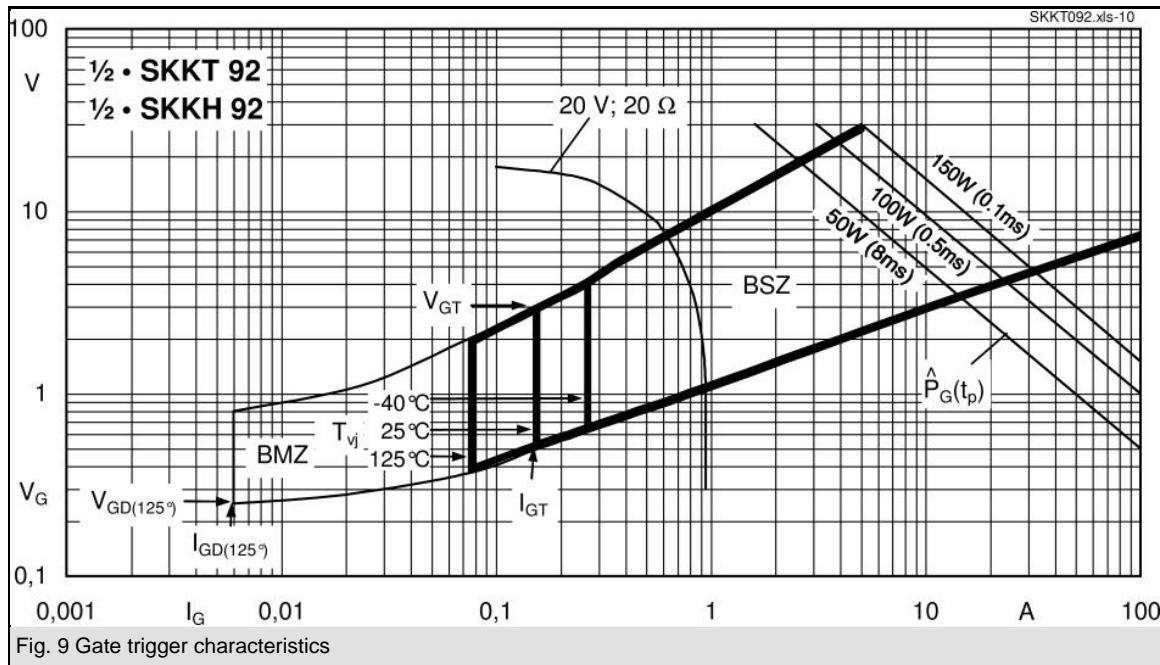


Fig. 8 Surge overload current vs. time



This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.