



# Thyristor Diode Modules

LiuJing rectifier co., Ltd.

$V_{RSM}$	$V_{RRM}$	$I_{TRMS} = 150A$ (maximum value for continuous operation)		
$V$	$V$	$I_{TAV} = 95A$ (sin.180; $T_c=85^\circ C$ )		
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 92/16E	SKKT 92B16E	SKKH 92/18E

Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 85(100)^\circ C$ ;	95 (68)	A
$I_d$	P3/180 ; $T_a = 45^\circ C$ ; B2 / B6	70 / 85	A
$I_{RMS}$	P3/180F; $T_a = 35^\circ C$ ; B2 / B6	140 / 175	A
	P3/180F; $T_a = 35^\circ C$ ; W1 / W3	190 / 3 * 135	A
$I_{TSM}$	$T_{vj} = 25^\circ C$ ; 10ms	2000	A
	$T_{vj} = 125^\circ C$ ; 10ms	1750	A
$i_{st}$	$T_{vj} = 25^\circ C$ ; 8, 3 ...10ms	20000	$A^2S$
	$T_{vj} = 125^\circ C$ ; 8, 3 ...10ms	15000	$A^2S$
$V_T$	$T_{vj} = 25^\circ C$ ; $I_t=276A$	max.1.65	V
$V_{T(TO)}$	$T_{vj} = 125^\circ C$	max.0.9	V
$r_T$	$T_{vj} = 125^\circ C$	max.2	$m\Omega$
$I_{DD}; I_{RD}$	$T_{vj} = 125^\circ C$ ; $V_{RD}=V_{RRM}$ ; $V_{DD}=V_{DRM}$	max.20	mA
$t_{qd}$	$T_{vj} = 25^\circ C$ ; $I_g = 1A$ ; $dig/dt = A/\mu s$	1	$\mu s$
$t_{gr}$	$V_D = 0.67*V_{DRM}$	2	$\mu s$
$(di/dt)_{cr}$	$T_{vj} = 125^\circ C$	max.150	$A/\mu s$
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ C$	max.1000	$V/\mu s$
$t_q$	$T_{vj} = 125^\circ C$	250	$\mu s$
$I_H$	$T_{vj} = 25^\circ C$ ; typ./max	150/250	mA
$I_L$	$T_{vj} = 25^\circ C$ ; $RG = 33\Omega$ ; typ./max	300/600	mA
$V_{GT}$	$T_{vj} = 25^\circ C$ ; d.c.	min. 3	V
$I_{GT}$	$T_{vj} = 25^\circ C$ ; d.c.	min. 150	mA
$V_{GD}$	$T_{vj} = 125^\circ C$ ; d.c.	max. 0.25	V
$I_{GD}$	$T_{vj} = 125^\circ C$ ; 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
$R_{th(j-c)}$	per thyristor/per module	0.2 / 0.1	K/W
$T_{vj}$		- 40...+ 125	$^\circ C$
$T_{stg}$		- 40...+ 125	$^\circ C$
$V_{isol}$	a. c. 50Hz; r.m.s. ; 1s/1min	3600/3000	V~
$M_s$	to heatsink	5 ± 15%)	Nm
$M_t$	to terminal	3 ± 15%	Nm
$a$		5 * 9.81	$m/s^2$
$m$	approx.	95	g
Case	SKKH	LJ1	

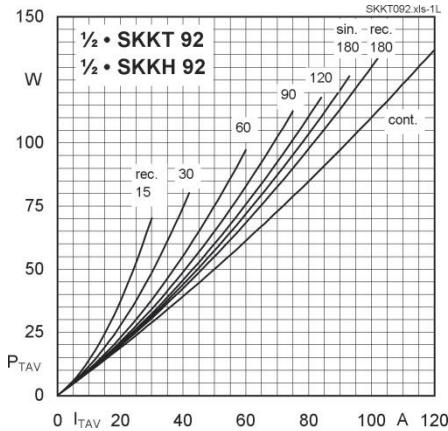


Fig. 1L Power dissipation per thyristor vs. on-state current

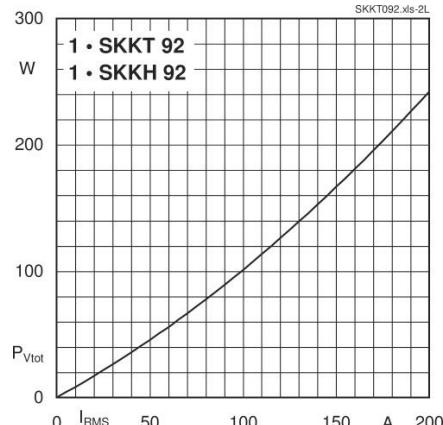


Fig. 2L Power dissipation per module vs. rms current

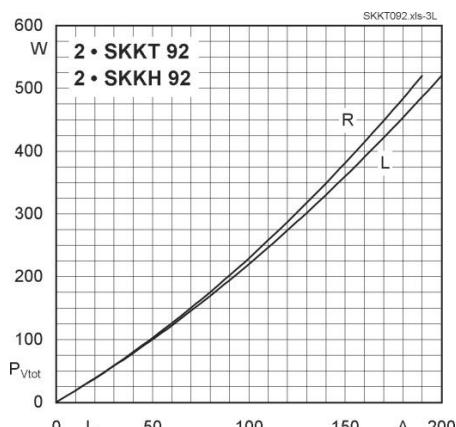


Fig. 3L Power dissipation of two modules vs. direct current

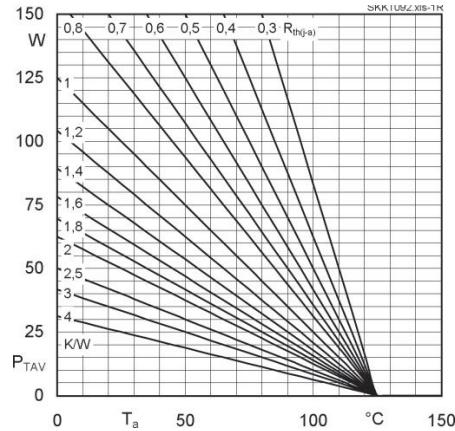


Fig. 1R Power dissipation per thyristor vs. ambient temp.

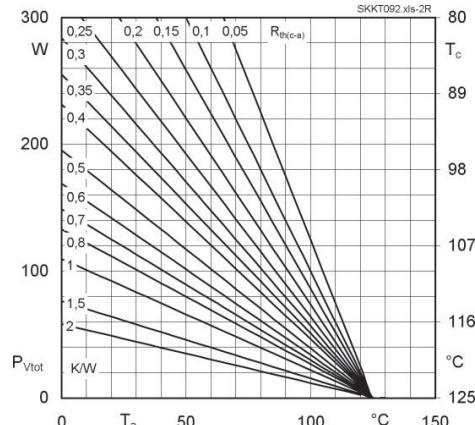


Fig. 2R Power dissipation per module vs. case temp.

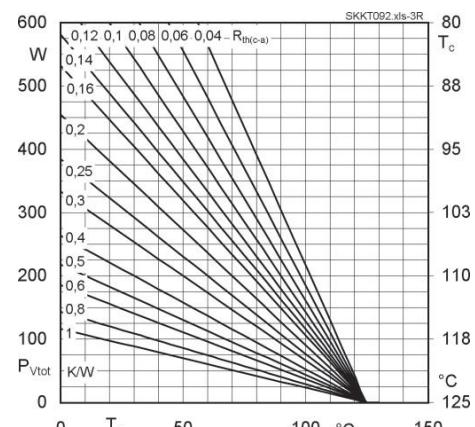


Fig. 3R Power dissipation of two modules vs. case temp.

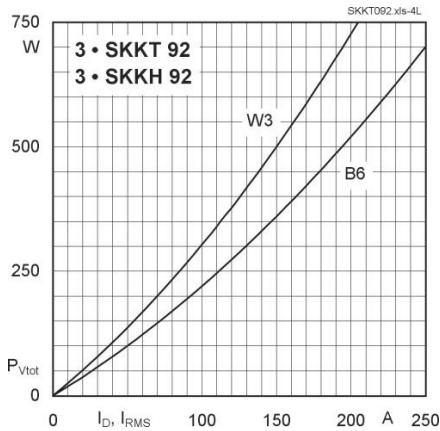


Fig. 4L Power dissipation of three modules vs. direct and rms current

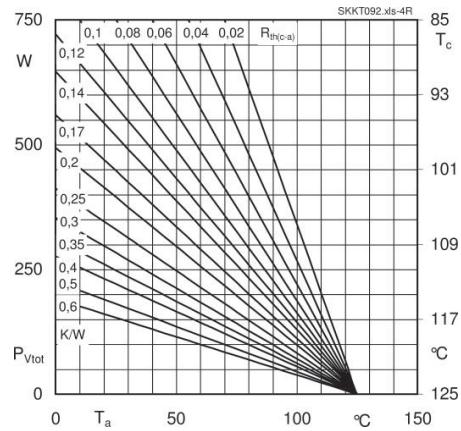


Fig. 4R Power dissipation of three modules vs. case temp.

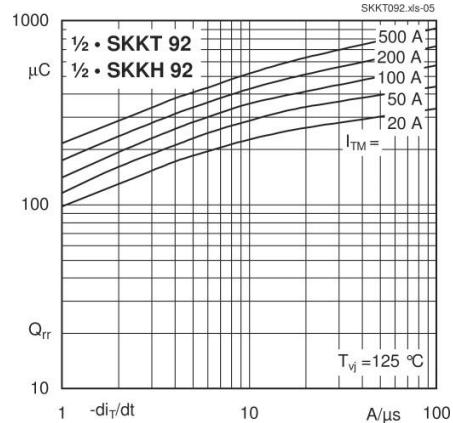


Fig. 5 Recovered charge vs. current decrease

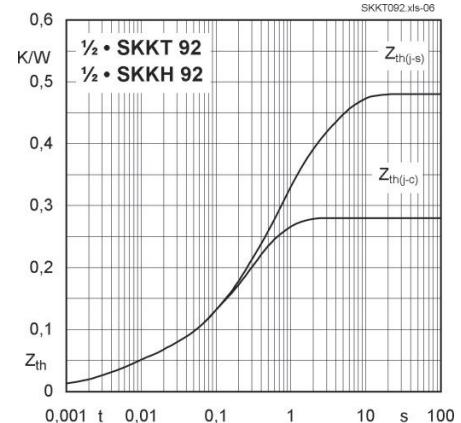


Fig. 6 Transient thermal impedance vs. time

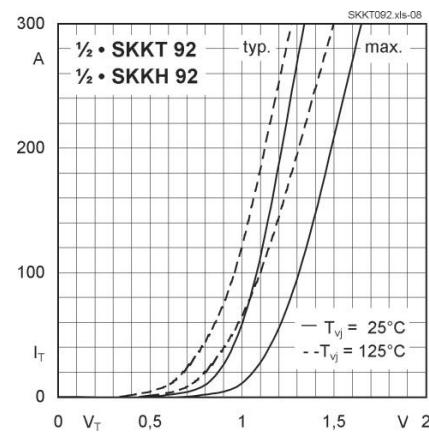


Fig. 7 On-state characteristics

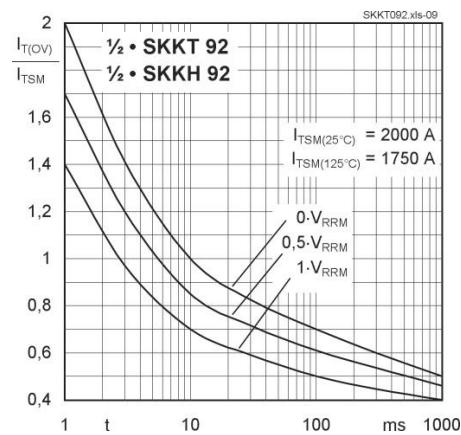
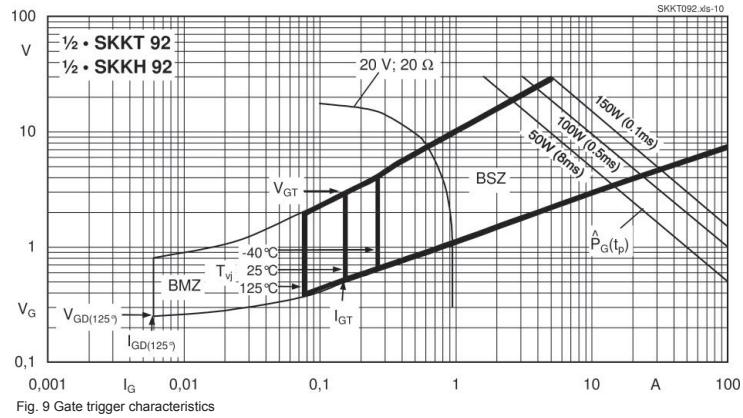
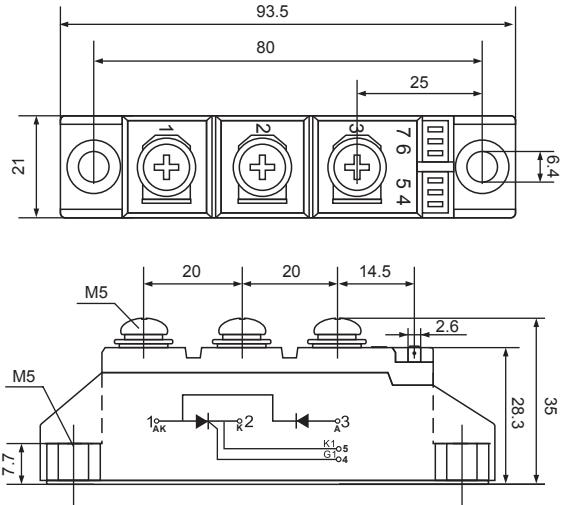


Fig. 8 Surge overload current vs. time



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