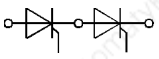
SEMIKRON

SEMIPACK® 1
Thyristor / Diode Modules

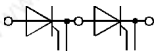
SKKT 91 **SKKH 91**
SKKT 92 **SKKH 92**
SKKT 92B **SKMT 92**[2)]
SKKL 92[2)]

V_{RSM} V	V_{RRM} V_{DRM} V	$(dv/dt)_{cr}$ V/µs	I_{TRMS} (maximum value for continuous operation) 150 A; I_{TAV} (sin. 180; T_{case} = 85°C) 95 A			
500	400	500	–	–	**SKKH 91/04 D**	–
700	600	500	**SKKT 91/06 D**	**SKKT 92/06 D**	**SKKH 91/06 D**	**SKKH 92/06 D**
900	800	500	**SKKT 91/08 D**	**SKKT 92/08 D**	**SKKH 91/08 D**	**SKKH 92/08 D**
1300	1200	1000	**SKKT 91/12 E**	**SKKT 92/12 E**[1)]	**SKKH 91/12 E**	**SKKH 92/12 E**
1500	1400	1000	**SKKT 91/14 E**	**SKKT 92/14 E**[1)]	**SKKH 91/14 E**	**SKKH 92/14 E**
1700	1600	1000	**SKKT 91/16 E**	**SKKT 92/16 E**[1)]	**SKKH 91/16 E**	**SKKH 92/16 E**
1900	1800	1000	**SKKT 91/18 E**	**SKKT 92/18 E**[1)]	**SKKH 91/18 E**	**SKKH 92/18 E**

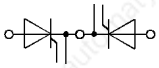
Symbol	Conditions	SKKT 91 SKKH 91	SKKT 92 SKKT 92B SKKH 92	Units
I_{TAV}	sin. 180; T_{case} = 85°C	95		A
I_D	B2/B6 T_{amb} = 45 °C; P 3/180	70 / 85		A
	T_{amb} = 35 °C; P 3/180 F	140/ 175		A
I_{RMS}	W1/W3 T_{amb} = 35 °C; P 3/180 F	190 / 3 x 135		A
I_{TSM}	T_{vj} = 25 °C; 10 ms	2 000		A
	T_{vj} = 125 °C; 10 ms	1 750		A
i^2t	T_{vj} = 25 °C; 8,3 ... 10 ms	20 000		A^2s
	T_{vj} = 125 °C; 8,3 ... 10 ms	15 000		A^2s
t_{gd}	T_{vj} = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	1		µs
t_{gr}	$V_D = 0{,}67 \cdot V_{DRM}$	2		µs
$(di/dt)_{cr}$	T_{vj} = 125 °C	150		A/µs
t_q	T_{vj} = 125 °C	typ. 100		µs
I_H	T_{vj} = 25 °C; max.	250		mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω; max.	600		mA
V_T	T_{vj} = 25 °C; I_T = 300 A	max. 1,65		V
$V_{T(TO)}$	T_{vj} = 125 °C	0,9		V
r_T	T_{vj} = 125 °C	2		mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; $V_{RD} = V_{RRM}$; $V_{DD} = V_{DRM}$	max. 20		mA
V_{GT}	T_{vj} = 25 °C; d.c.	3		V
I_{GT}	T_{vj} = 25 °C; d.c.	150		mA
V_{GD}	T_{vj} = 125 °C; d.c.	0,25		V
I_{GD}	T_{vj} = 125 °C; d.c.	6		mA
R_{thjc}	cont. (per thyristor / per module)	0,28 / 0,14		°C/W
	sin. 180 (per thyristor / per module)	0,30 / 0,15		°C/W
	rec. 120 (per thyristor / per module)	0,32 / 0,16		°C/W
R_{thch}		0,2 / 0,1		°C/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_1	to heatsink (SI (US) units)	5 (44 lb. in.) ± 15 %[3)]		Nm
M_2	to terminals (SI (US) units)	3 (26 lb. in.) ± 15 %		Nm
a		$5 \cdot 9{,}81$		m/s^2
w	approx.	95		g
Case	→ page B 1 – 95	SKKT 91: A 5; SKKH 91: A 6; SKKH 92: A 47	SKKL 92: A 59; SKKT 92: A 46; SKKT 92B: A 48	
		SKMT 92: A 72		



SKKT 91 **SKKH 91**



SKKT 92 **SKKH 92**
SKKT 92B



SKMT 92 **SKKL 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)

[1)] Also available in SKKT 92B configuration (case A 48)
[2)] SKKL 92, SKMT 92 available on request
[3)] See the assembly instructions

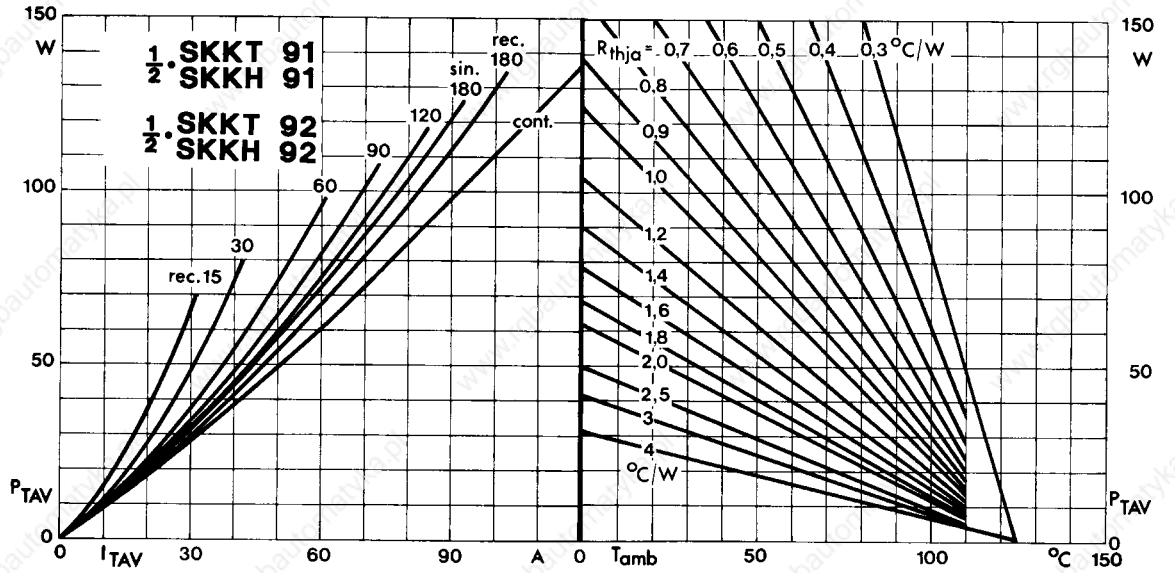


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

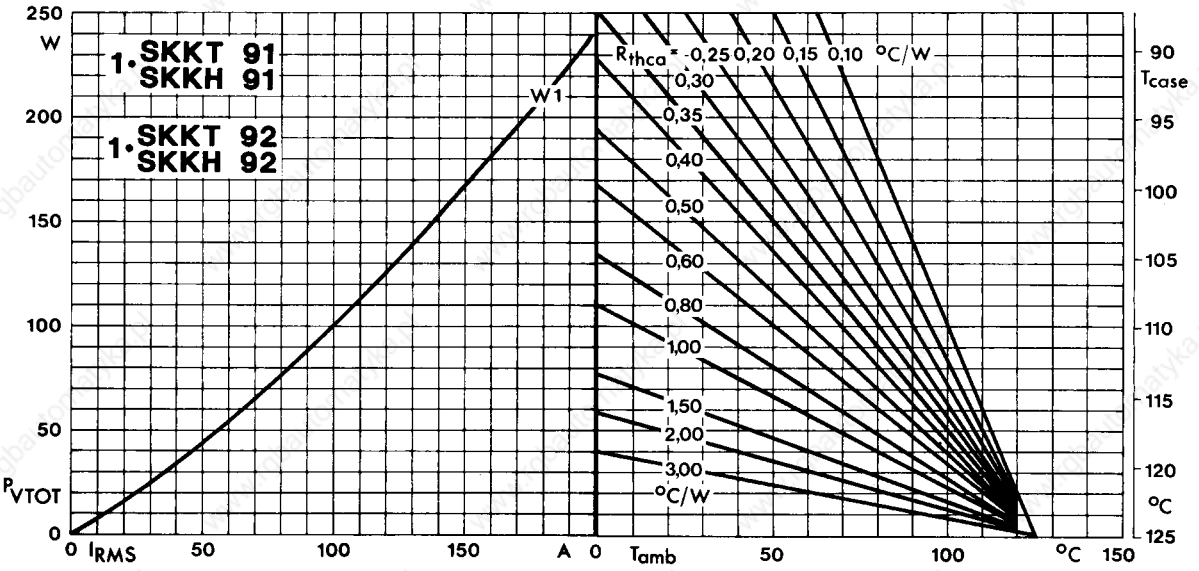


Fig. 2 Power dissipation per module vs. rms current and case temperature

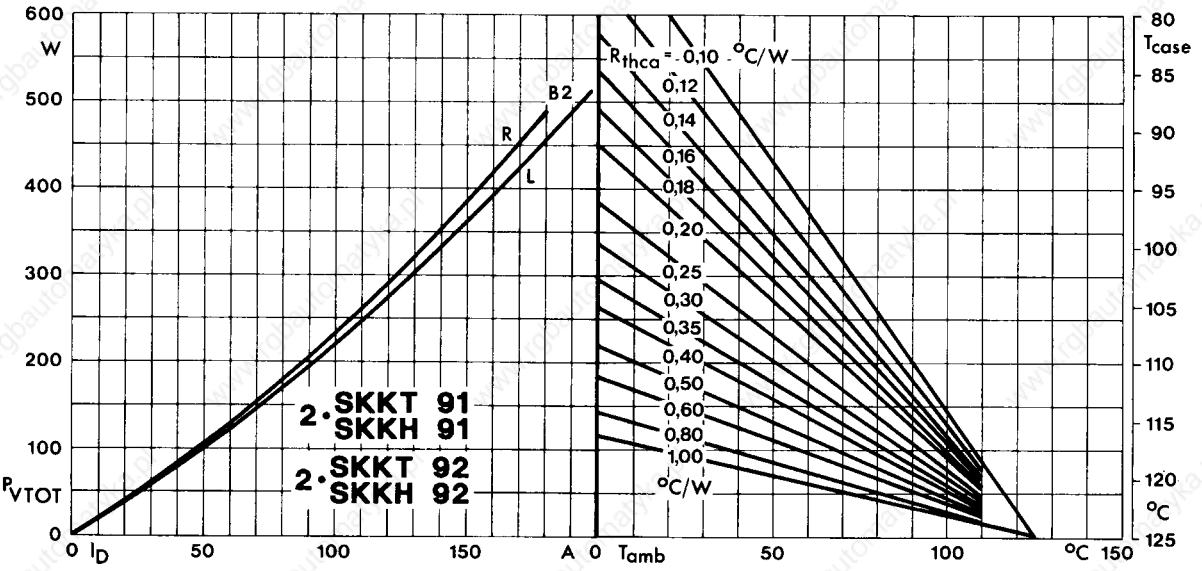


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

© by SEMIKRON

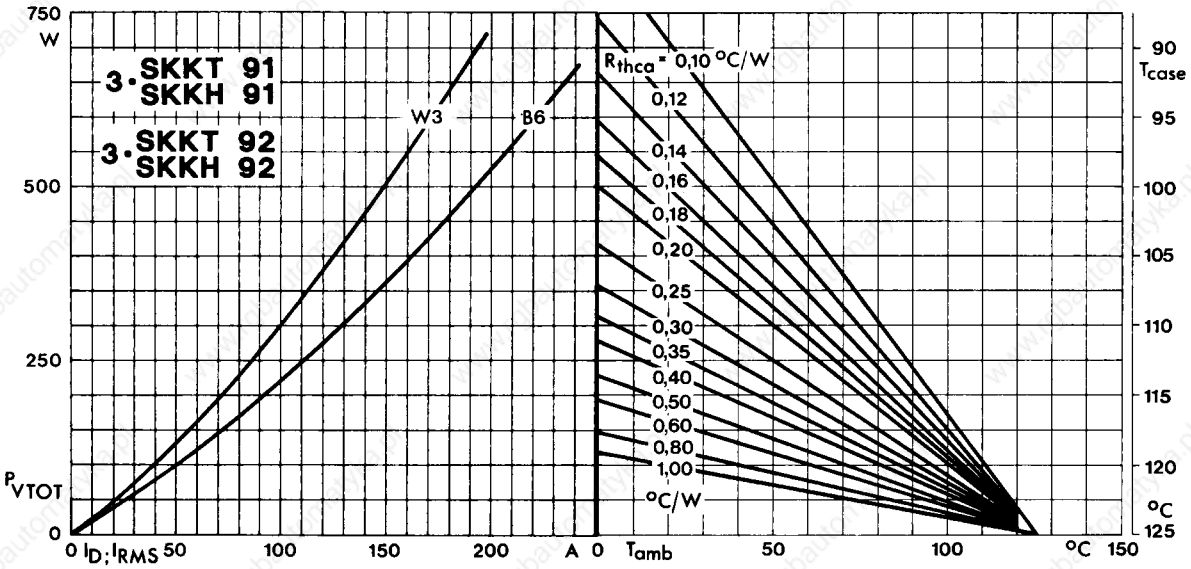


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

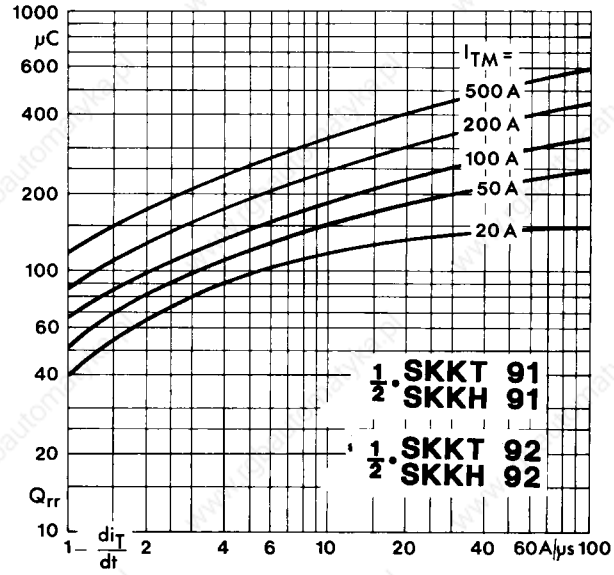


Fig. 5 Recovered charge vs. current decrease

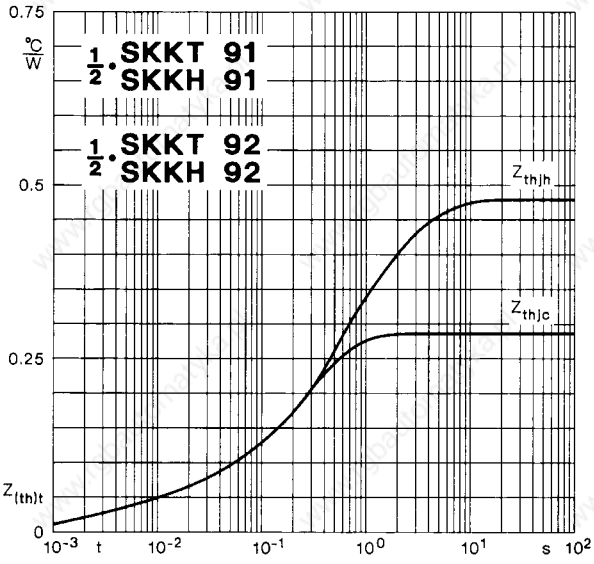


Fig. 6 Transient thermal impedance vs. time

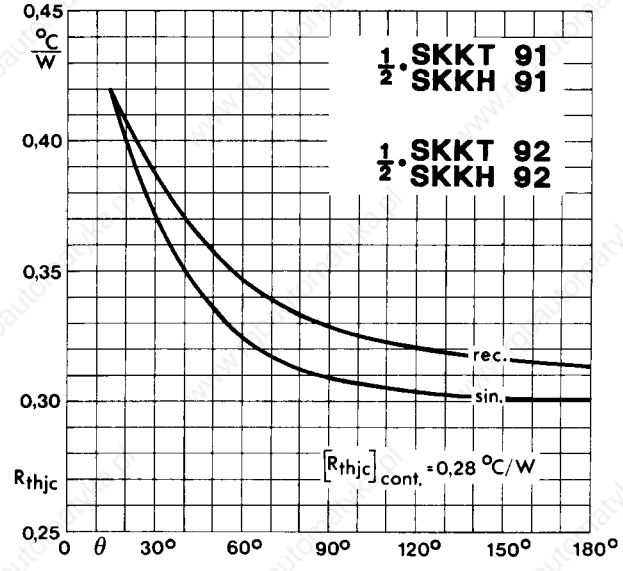


Fig. 7 Thermal resistance vs. conduction angle

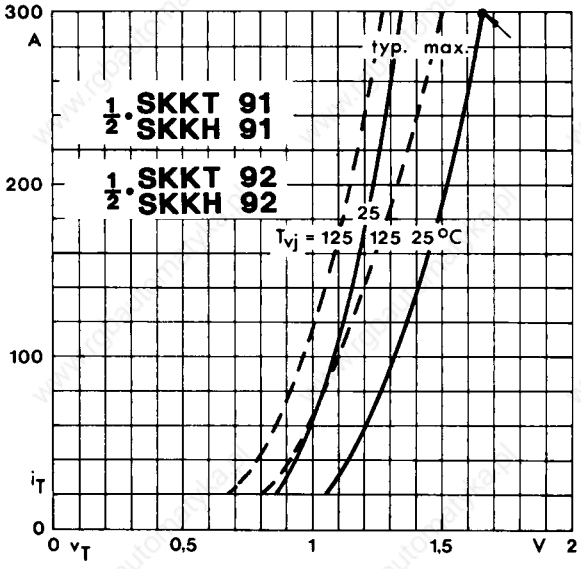


Fig. 8 On-state characteristics

© by SEMIKRON

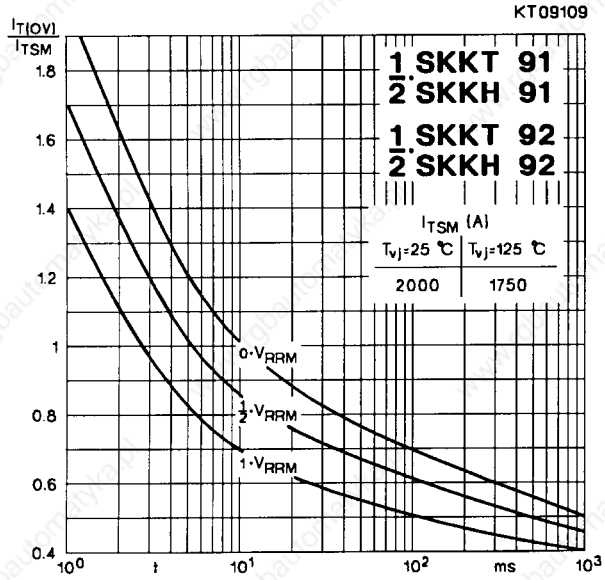


Fig. 9 Surge overload current vs. time

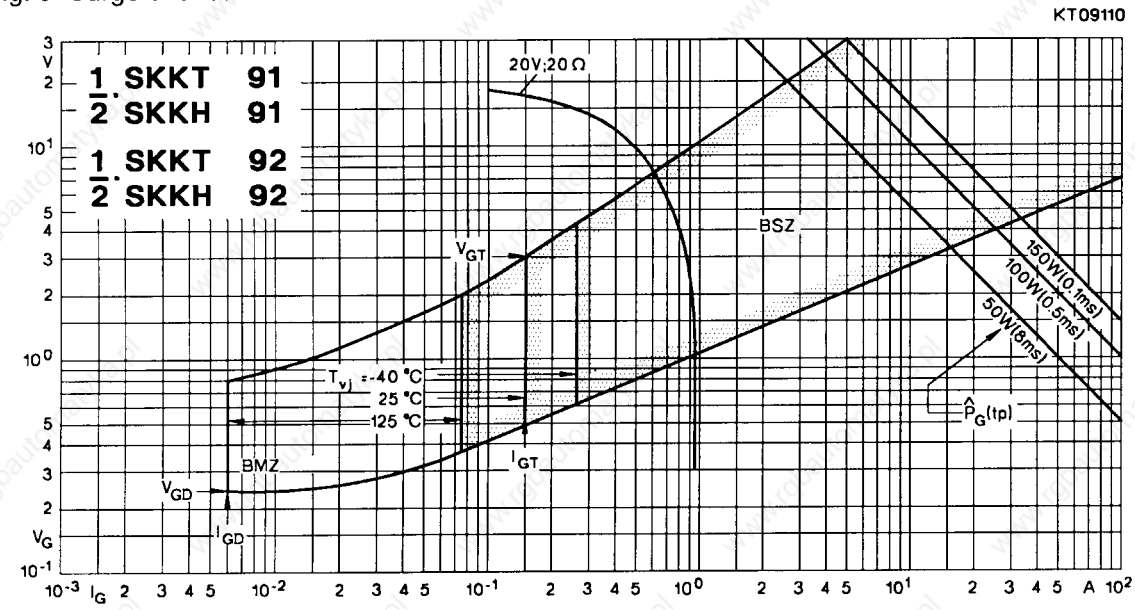


Fig. 10 Gate trigger characteristics

© by SEMIKRON

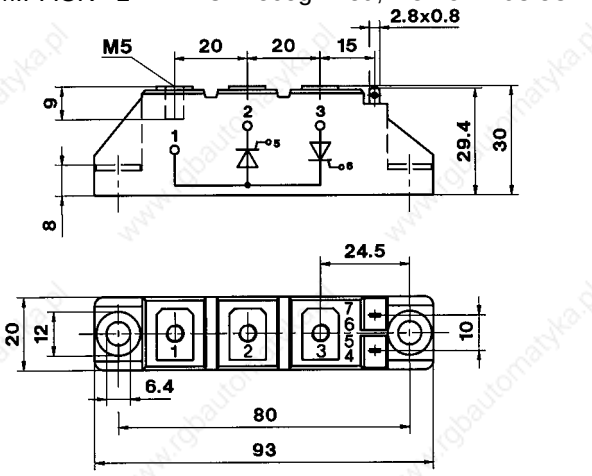
SKKT 19 . . . 105

Case A 5

IEC 192-2: A 77 A
JEDEC: TO-240 AA

SEMIPACK® 1

UL recognized, file no. E 63 532



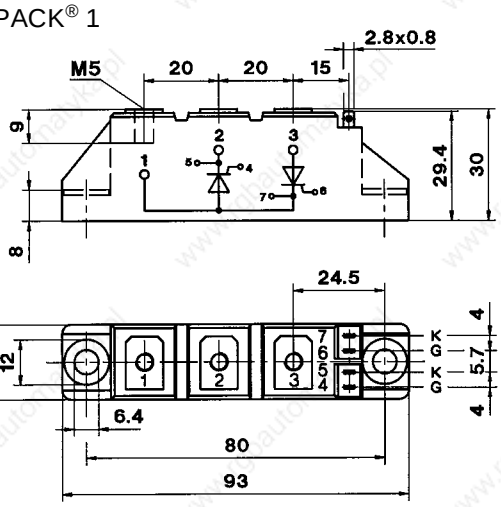
Dimensions in mm

SKKT 20/ . . . 106/

Case A 46

IEC 192-2: A 77 A
JEDEC: TO-240 AA

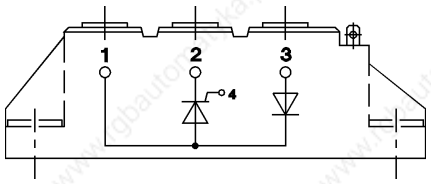
SEMIPACK® 1



Dimensions in mm

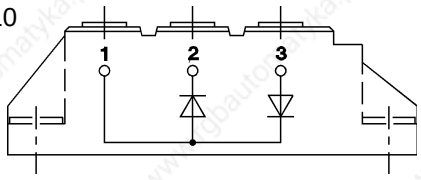
SKKH 26 . . . 105

Case A 6



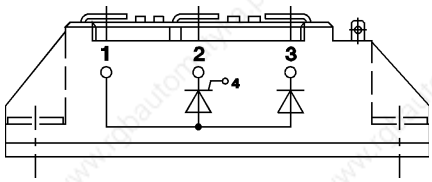
SKKD 26 . . . 100

Case A 10



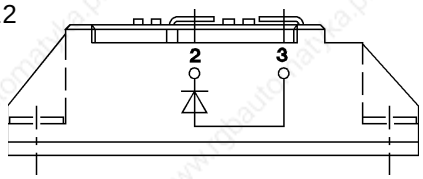
SKNH 56 . . . 91

Case A 7



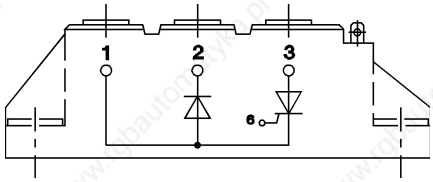
SKKE 81

Case A 12



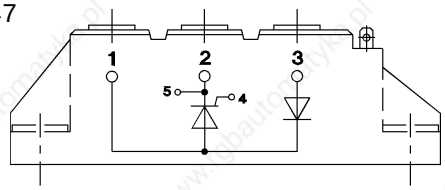
SKKL 56 . . . 105

Case A 9



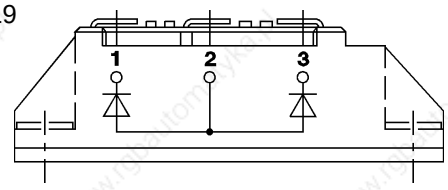
SKKH 27 . . . 106

Case A 47



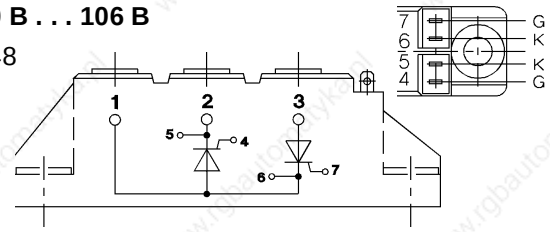
SKND 46 . . . 81

Case A 19



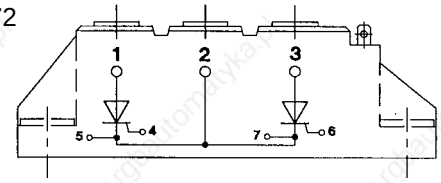
SKKT 20 B . . . 106 B

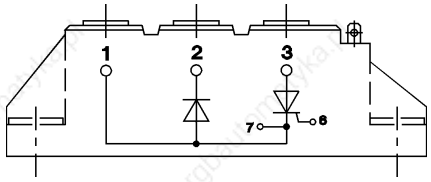
Case A 48



SKMT 92

Case A 72



SKKL 42 . . . 106

Case A 59