

SEMIPACK® 1

Thyristor / Diode Modules

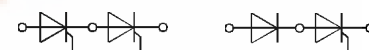
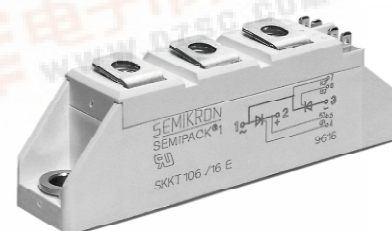
SKKT 105

SKKH 105

SKKT 106

SKKH 106

SKKT 106B



SKKT 105

SKKH 105

SKKT 106
SKKT 106B

SKKH 106

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 106 B configuration (case A 48)

²⁾ See the assembly instructions

V_{RSM}	V_{RRM}	$(dv/dt)_{cr}$	$I_{T_{RMS}}$ (maximum value for continuous operation)			
	V_{DRM}		180 A			
			I_{TAV} (sin. 180; $T_{case} = 80\text{ °C}$)			
V	V	V/ μ s	115 A			
500	400	500	—	—	SKKH 105/04 D	—
700	600	500	SKKT 105/06 D	SKKT 106/06 D	—	SKKH 106/06 D
900	800	500	SKKT 105/08 D	SKKT 106/08 D ¹⁾	SKKH 105/08 D	SKKH 106/08 D
1300	1200	1000	SKKT 105/12 E	SKKT 106/12 E ¹⁾	SKKH 105/12 E	SKKH 106/12 E
1500	1400	1000	SKKT 105/14 E	SKKT 106/14 E ¹⁾	SKKH 105/14 E	SKKH 106/14 E
1700	1600	1000	SKKT 105/16 E	SKKT 106/16 E ¹⁾	SKKH 105/16 E	SKKH 106/16 E
1900	1800	1000	SKKT 105/18 E	SKKT 106/18 E ¹⁾	SKKH 105/18 E	SKKH 106/18 E

Symbol	Conditions	SKKT 105 SKKH 105	SKKT 106 SKKT 106B SKKH 106	Units
I_{TAV}	sin. 180; $T_{case} = 85\text{ °C}$	106		A
I_D	B2/B6 $T_{amb} = 35\text{ °C}$; P 3/180 F	145 / 180		A
		190 / 260		A
I_{RMS}	W1/W3 $T_{amb} = 35\text{ °C}$; P 3/180 F	200 / 3 x 140		A
I_{TSM}	$T_{vj} = 25\text{ °C}$; 10 ms	2 250		A
	$T_{vj} = 130\text{ °C}$; 10 ms	1 900		A
i^2t	$T_{vj} = 25\text{ °C}$; 8,3 ... 10 ms	25 000		A ² s
	$T_{vj} = 130\text{ °C}$; 8,3 ... 10 ms	18 000		A ² s
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}	$V_D = 0,67 \cdot V_{DRM}$	2		μs
$(di/dt)_{cr}$	$T_{vj} = 130\text{ °C}$	150		A/ μs
t_q	$T_{vj} = 130\text{ °C}$	typ. 100		μs
I_H	$T_{vj} = 25\text{ °C}$; typ./max.	150 / 250		mA
I_L	$T_{vj} = 25\text{ °C}$; $R_G = 33\text{ }\Omega$; typ./max.	300 / 600		mA
V_T	$T_{vj} = 25\text{ °C}$; $I_T = 300\text{ A}$	max. 1,65		V
$V_{T(TO)}$	$T_{vj} = 130\text{ °C}$	0,9		V
r_T	$T_{vj} = 130\text{ °C}$	2		m Ω
I_{DD} ; I_{RD}	$T_{vj} = 130\text{ °C}$; $V_{RD} = V_{RRM}$ $V_{DD} = V_{DRM}$	max. 20		mA
V_{GT}	$T_{vj} = 25\text{ °C}$; d.c.	3		V
I_{GT}	$T_{vj} = 25\text{ °C}$; d.c.	150		mA
V_{GD}	$T_{vj} = 130\text{ °C}$; d.c.	0,25		V
I_{GD}	$T_{vj} = 130\text{ °C}$; d.c.	6		mA
R_{thjc}	cont.	0,28 / 0,14		$^{\circ}\text{C}/\text{W}$
	sin. 180	0,30 / 0,15		$^{\circ}\text{C}/\text{W}$
	rec. 120	0,32 / 0,16		$^{\circ}\text{C}/\text{W}$
R_{thch}	per thyristor / per module	0,2 / 0,1		$^{\circ}\text{C}/\text{W}$
T_{vj}		- 40 ... + 130		$^{\circ}\text{C}$
T_{stg}		- 40 ... + 125		$^{\circ}\text{C}$
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s/1 min	3600 / 3000		V~
M_1	to heatsink	5 (44 lb. in.) $\pm 15\text{ }^{\circ}\%$		Nm
M_2	to terminals	3 (26 lb. in.) $\pm 15\text{ }^{\circ}\%$		Nm
a		5 · 9,81		m/s ²
w	approx.	95		g
Case	→ page B 1 – 95	SKKT 105: A 5 SKKH 105: A 6	SKKT 106: A 46 SKKT 106B: A 48 SKKH 106: A 47	

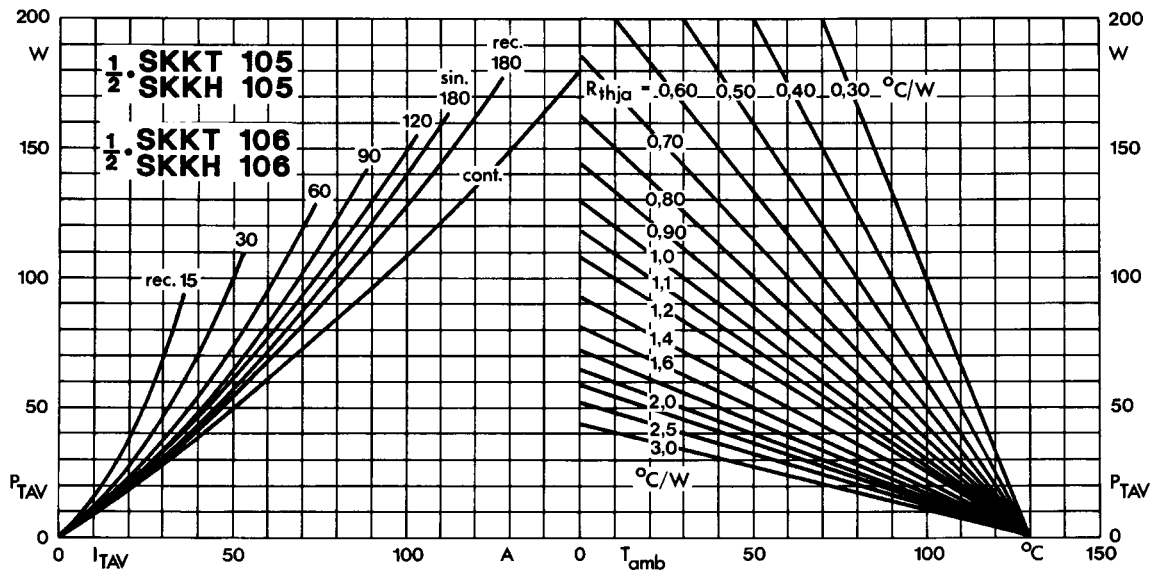


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

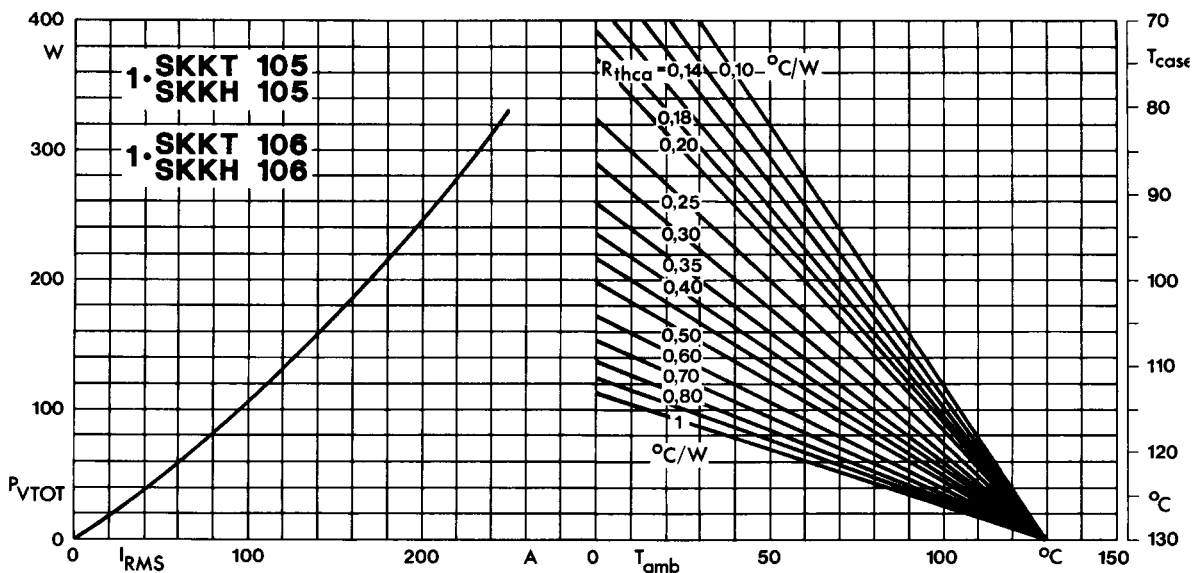


Fig. 2 Power dissipation per module vs. rms current and case temperature

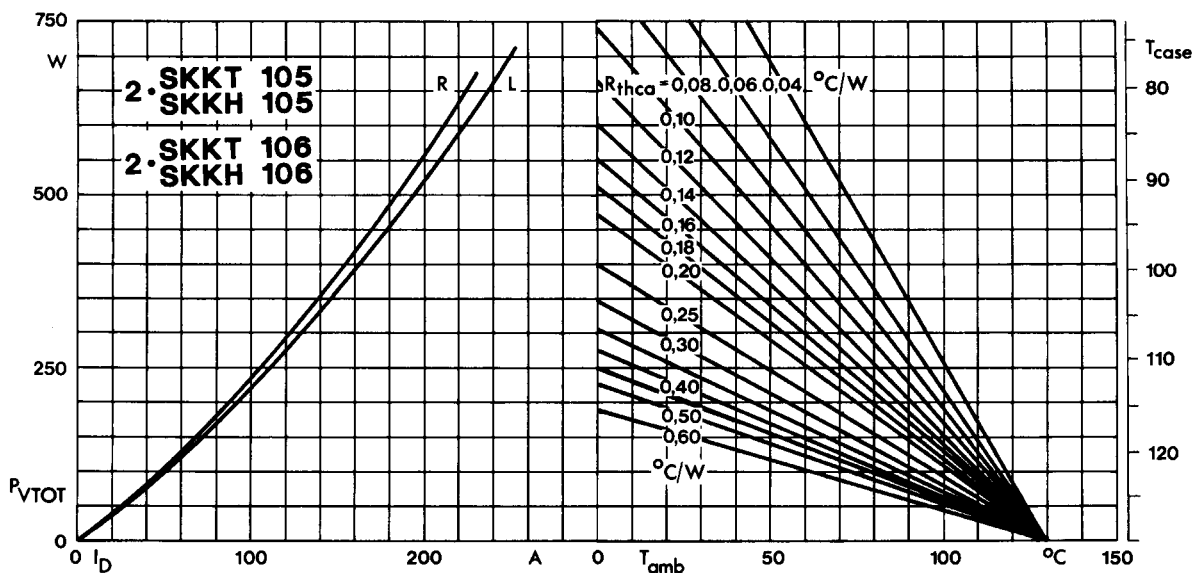


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

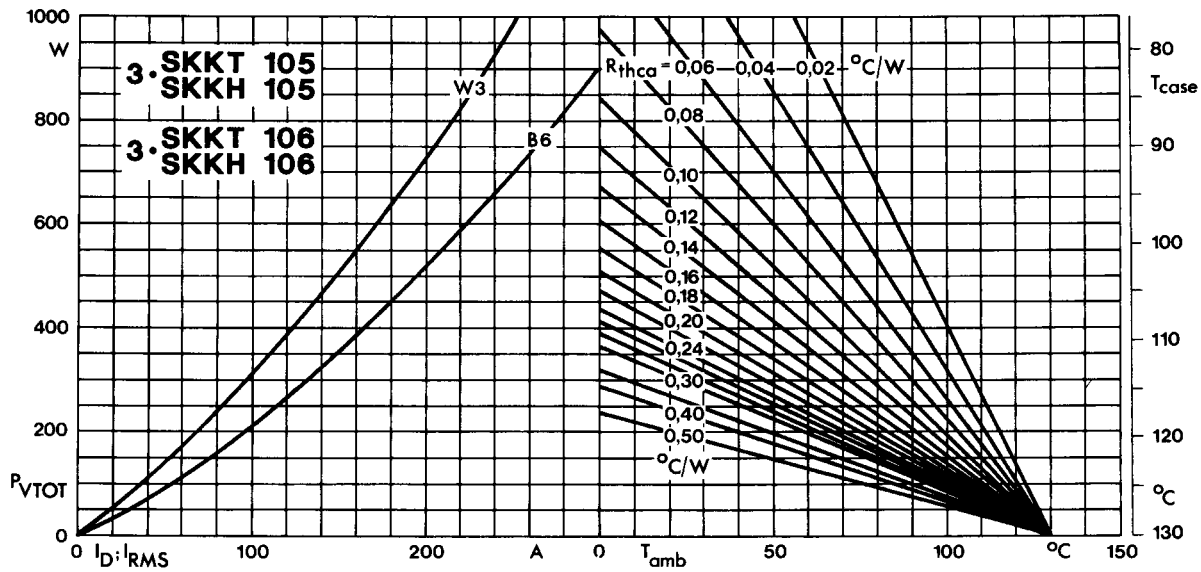


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

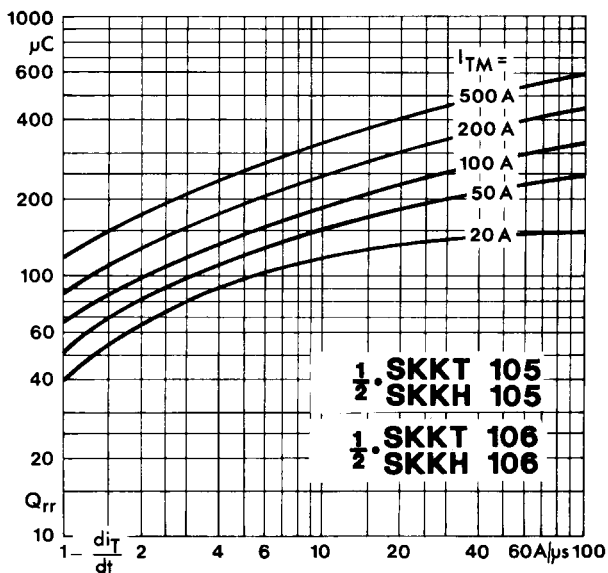


Fig. 5 Recovered charge vs. current decrease

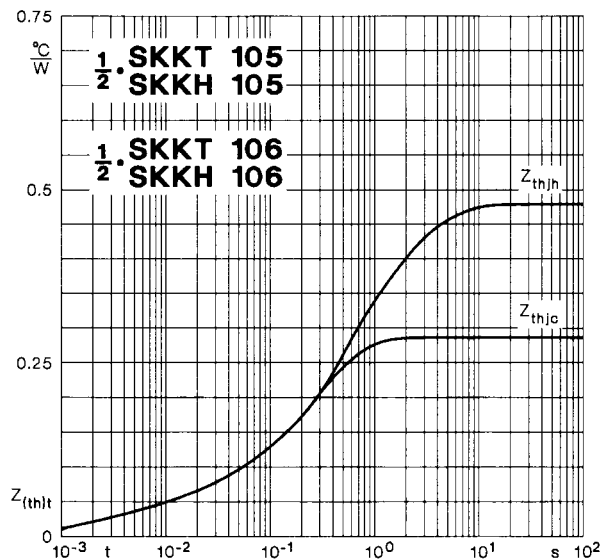


Fig. 6 Transient thermal impedance vs. time

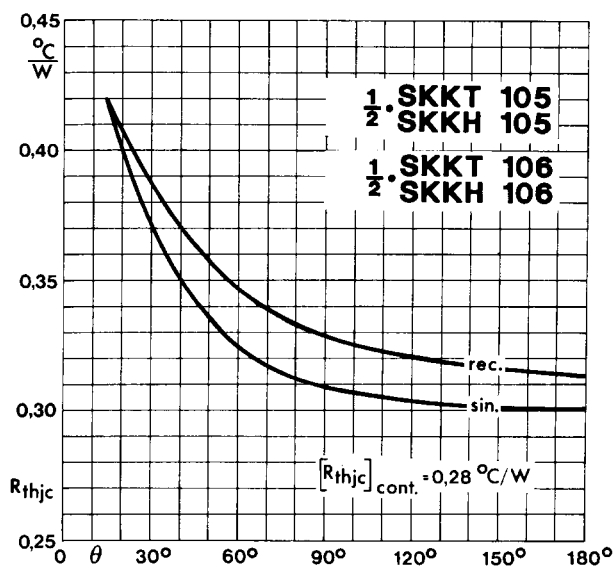


Fig. 7 Thermal resistance vs. conduction angle

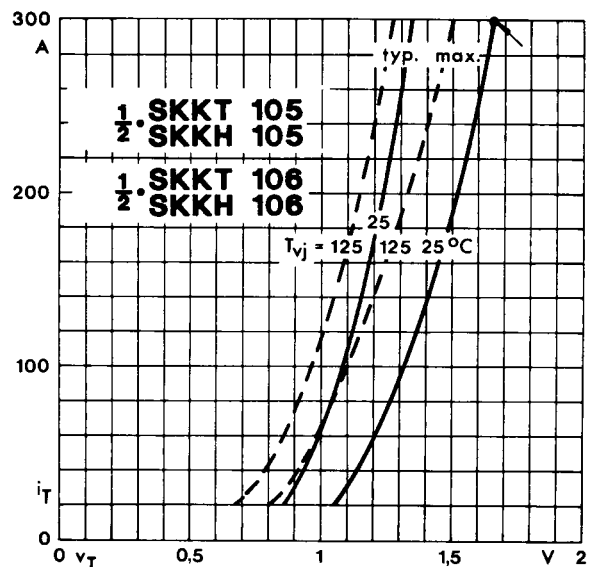


Fig. 8 On-state characteristics

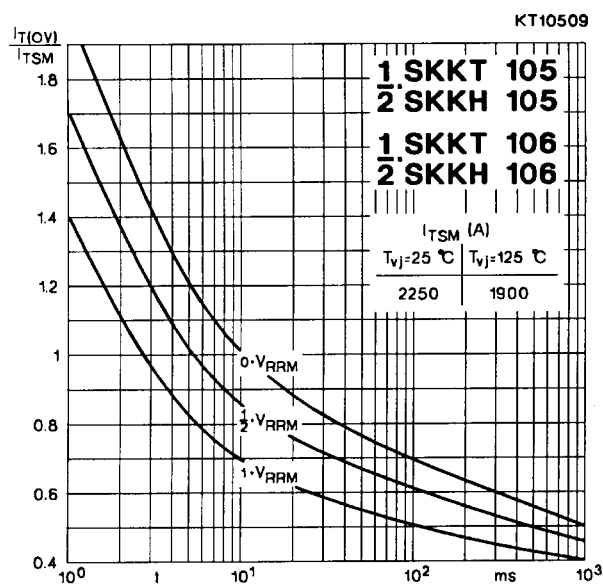


Fig. 9 Surge overload current vs. time

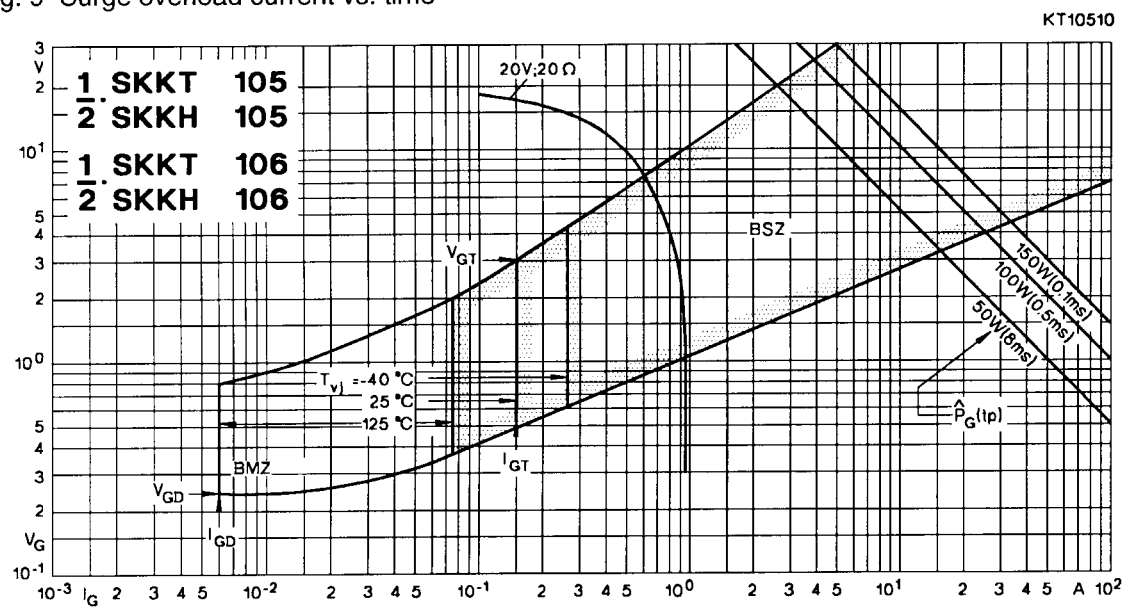


Fig. 10 Gate trigger characteristics

SKKT 19 ... 105

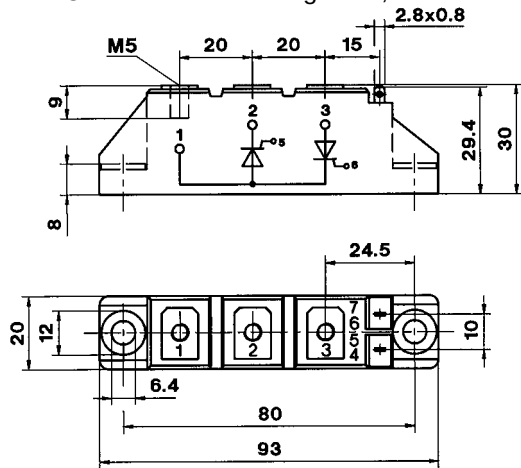
Case A 5

IEC 192-2: A 77 A

JEDEC: TO-240 AA

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UL recognized, file no. E 63 532



Dimensions in mm

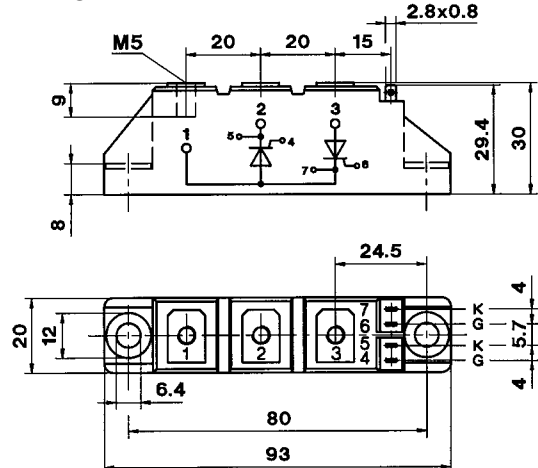
SKKT 20/ ... 106/

Case A 46

IEC 192-2: A 77 A

JEDEC: TO-240 AA

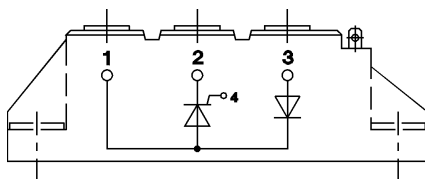
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Dimensions in mm

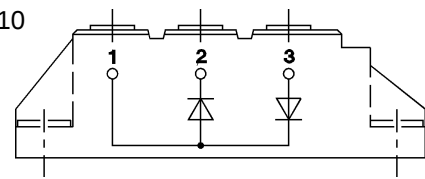
SKKH 26 ... 105

Case A 6



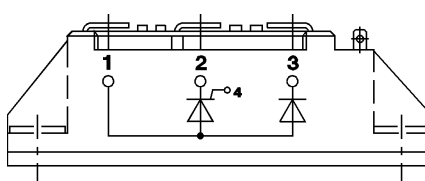
SKKD 26 ... 100

Case A 10



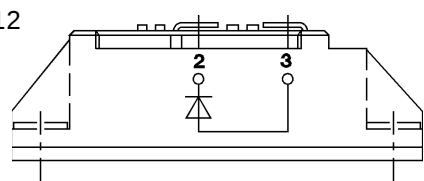
SKNH 56 ... 91

Case A 7



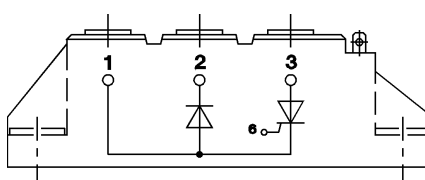
SKKE 81

Case A 12



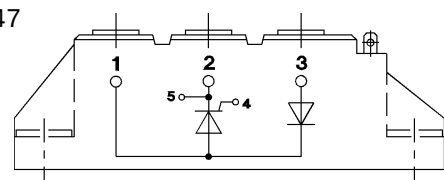
SKKL 56 ... 105

Case A 9



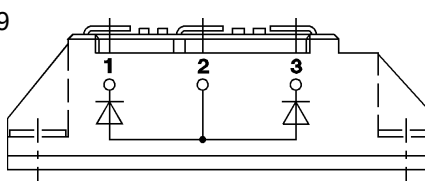
SKKH 27 ... 106

Case A 47



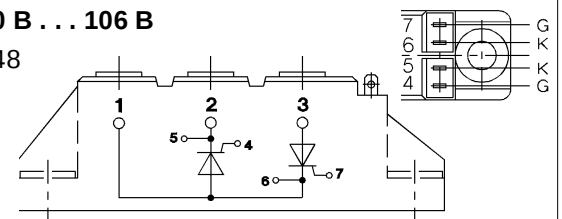
SKND 46 ... 81

Case A 19



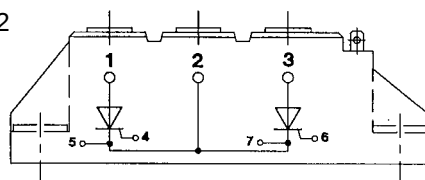
SKKT 20 B ... 106 B

Case A 48



SKMT 92

Case A 72



SKKL 42 ... 106

Case A 59

