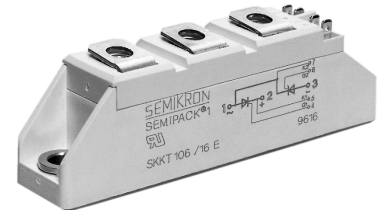


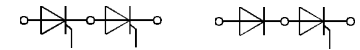
|                  |                  |                       |  |                            |              |              |
|------------------|------------------|-----------------------|--|----------------------------|--------------|--------------|
| V <sub>RSM</sub> | V <sub>RRM</sub> | (dv/dt) <sub>cr</sub> | I <sub>TRMS</sub> (maximum value for continuous operation) |                            |              |              |
|                  |                  |                       | 95 A   |                            |              |              |
| V                | V                | V/μs                  | I <sub>TAV</sub> (sin. 180; T <sub>case</sub> = 74 °C)     |                            |              |              |
|                  |                  |                       | 60 A   |                            |              |              |
| 500              | 400              | 500                   | –  | –                          | SKKH 56/04 D | –            |
| 700              | 600              | 500                   | SKKT 56/06 D   | SKKT 57/06 D               | SKKH 56/06 D | SKKH 57/06 D |
| 900              | 800              | 500                   | SKKT 56/08 D   | SKKT 57/08 D <sup>1)</sup> | SKKH 56/08 D | SKKH 57/08 D |
| 1300             | 1200             | 1000                  | SKKT 56/12 E   | SKKT 57/12 E <sup>1)</sup> | SKKH 56/12 E | SKKH 57/12 E |
| 1500             | 1400             | 1000                  | SKKT 56/14 E   | SKKT 57/14 E <sup>1)</sup> | SKKH 56/14 E | SKKH 57/14 E |
| 1700             | 1600             | 1000                  | SKKT 56/16 E   | SKKT 57/16 E <sup>1)</sup> | SKKH 56/16 E | SKKH 57/16 E |
| 1900             | 1800             | 1000                  | SKKT 56/18 E   | SKKT 57/18 E <sup>1)</sup> | SKKH 56/18 E | SKKH 57/18 E |
| 2100             | 2000             | 1000                  | SKKT 56/20 E   | SKKT 57/20 E <sup>1)</sup> | –            | SKKH 57/20 E |
| 2300             | 2200             | 1000                  | SKKT 56/22 E   | SKKT 57/22 E <sup>1)</sup> | –            | SKKH 57/22 E |

## SEMIPACK® 1 Thyristor / Diode Modules

**SKKT 56**      **SKKH 56**  
**SKKT 57**      **SKKH 57**  
**SKKT 57B**



| Symbol                            | Conditions   | SKKT 56<br>SKKH 56                  | SKKT 57<br>SKKT 57B<br>SKKH 57                   | Units            |
|-----------------------------------|--|-------------------------------------|--|------------------|
| I <sub>TAV</sub>                  | sin. 180; T <sub>case</sub> = 74 °C<br>T <sub>case</sub> = 80 °C                                   | 60                                  | 55   | A                |
| I <sub>D</sub>                    | B2/B6<br>T <sub>amb</sub> = 45 °C; P 3/180<br>T <sub>amb</sub> = 35 °C; P 3/180 F                  | 57 / 68                             | 100 / 130  | A                |
| I <sub>RMS</sub>                  | W1/W3<br>T <sub>amb</sub> = 35 °C; P 3/180 F   | 130 / 3 x 100                       |  | A                |
| I <sub>TSM</sub>                  | T <sub>vj</sub> = 25 °C; 10 ms<br>T <sub>vj</sub> = 125 °C; 10 ms                                  | 1 500                               | 1 250  | A                |
| i <sup>2</sup> t                  | T <sub>vj</sub> = 25 °C; 8,3 ... 10 ms<br>T <sub>vj</sub> = 125 °C; 8,3 ... 10 ms                  | 11 000                              | 8 000  | A <sup>2</sup> s |
| t <sub>gd</sub>                   | T <sub>vj</sub> = 25 °C; I <sub>G</sub> = 1 A;<br>di <sub>G</sub> /dt = 1 A/μs                     | 1                                   |  | μs               |
| t <sub>gr</sub>                   | V <sub>D</sub> = 0,67 · V <sub>DRM</sub>   | 2                                   |  | μs               |
| (di/dt) <sub>cr</sub>             | T <sub>vj</sub> = 125 °C   | 150                                 |  | A/μs             |
| t <sub>q</sub>                    | T <sub>vj</sub> = 125 °C   | typ. 80                             |  | μs               |
| I <sub>H</sub>                    | T <sub>vj</sub> = 25 °C; typ./max.   | 150 / 250                           |  | mA               |
| I <sub>L</sub>                    | T <sub>vj</sub> = 25 °C; R <sub>G</sub> = 33 Ω; typ./max.  | 300 / 600                           |  | mA               |
| V <sub>T</sub>                    | T <sub>vj</sub> = 25 °C; I <sub>T</sub> = 200 A  | max. 1,65                           |  | V                |
| V <sub>T(TO)</sub>                | T <sub>vj</sub> = 125 °C   | 0,9                                 |  | V                |
| r <sub>T</sub>                    | T <sub>vj</sub> = 125 °C   | 3,5                                 |  | mΩ               |
| I <sub>DD</sub> ; I <sub>RD</sub> | T <sub>vj</sub> = 125 °C; V <sub>RD</sub> = V <sub>RRM</sub><br>V <sub>DD</sub> = V <sub>DRM</sub> | max. 15 <sup>3)</sup>               |  | mA               |
| V <sub>GT</sub>                   | T <sub>vj</sub> = 25 °C; d.c.  | 3                                   |  | V                |
| I <sub>GT</sub>                   | T <sub>vj</sub> = 25 °C; d.c.  | 150                                 |  | mA               |
| V <sub>GD</sub>                   | T <sub>vj</sub> = 125 °C; d.c.   | 0,25                                |  | V                |
| I <sub>GD</sub>                   | T <sub>vj</sub> = 125 °C; d.c.   | 6                                   |  | mA               |
| R <sub>thjc</sub>                 | cont.  | 0,57 / 0,29                         |  | °C/W             |
| R <sub>thch</sub>                 | sin. 180 } per thyristor /<br>rec. 120 } per module  | 0,60 / 0,30                         |  | °C/W             |
|                                   |  | 0,64 / 0,32                         |  | °C/W             |
| T <sub>vj</sub>                   |  | 0,2 / 0,1                           |  | °C/W             |
| T <sub>stg</sub>                  |  | – 40 ... + 125                      |  | °C               |
|                                   |  | – 40 ... + 125                      |  | °C               |
| V <sub>isol</sub>                 | a. c. 50 Hz; r.m.s.; 1 s/1 min   | 3600 / 3000                         |  | V~               |
| M <sub>1</sub>                    | to heatsink } SI (US) units<br>to terminals }  | 5 (44 lb. in.) ± 15 % <sup>2)</sup> |  | Nm               |
| M <sub>2</sub>                    |  | 3 (26 lb. in.) ± 15 %               |  | Nm               |
| a                                 |  | 5 · 9,81                            |  | m/s <sup>2</sup> |
| w                                 | approx.  | 95                                  |  | g                |
| Case                              | → page B 1 – 95  | SKKT 56: A 5<br>SKKH 56: A 6        | SKKT 57: A 46<br>SKKT 57B: A 48<br>SKKH 57: A 47 |                  |



**SKKT 56**

**SKKH 56**



**SKKT 57  
SKKT 57B**

**SKKH 57**

### 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> Also available in SKKT 57B configuration (case A 48)

<sup>2)</sup> See the assembly instructions

<sup>3)</sup> /20 E, /22 E max. 30 mA

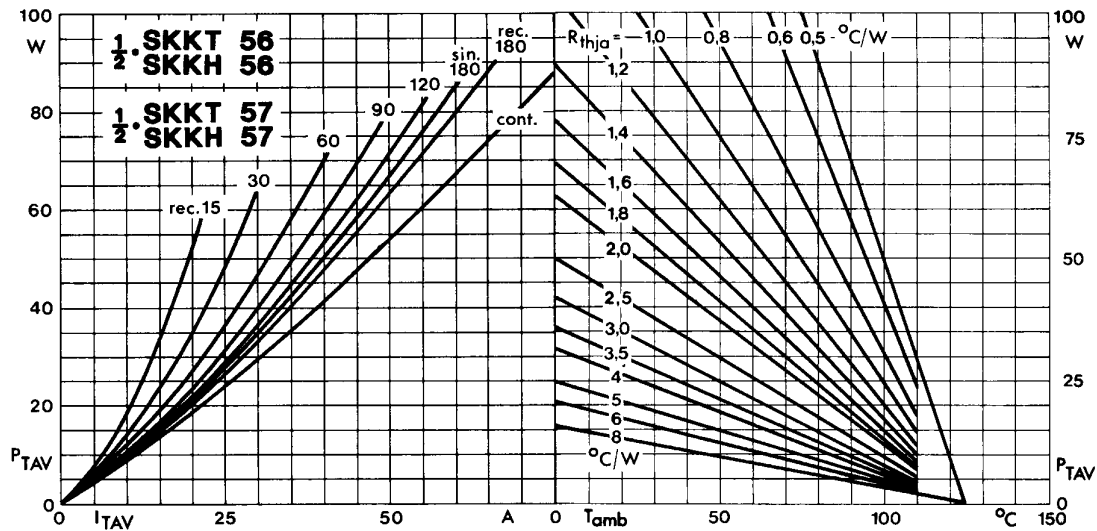


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

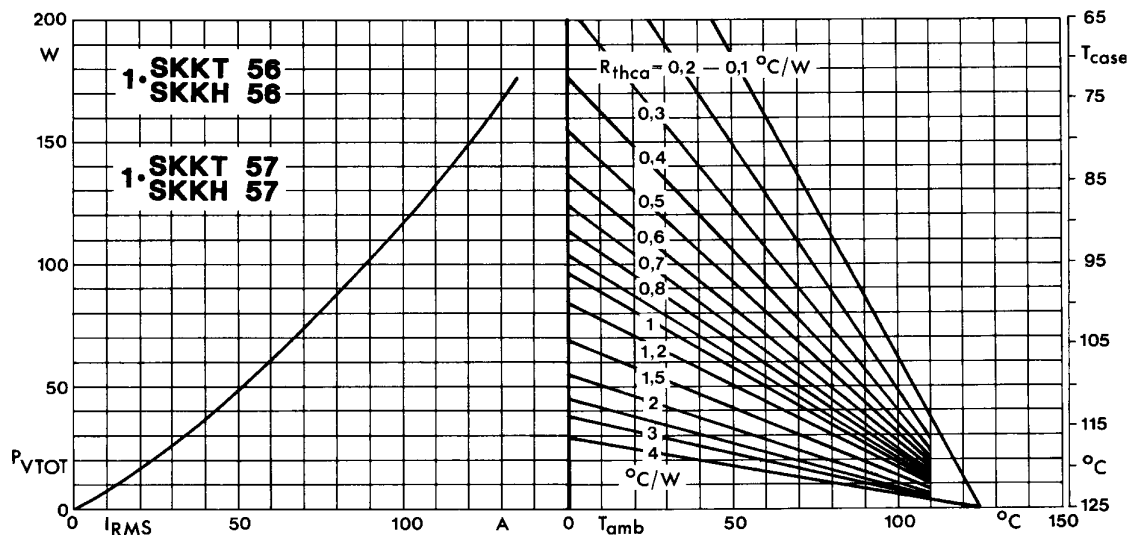


Fig. 2 Power dissipation per module vs. rms current and case temperature

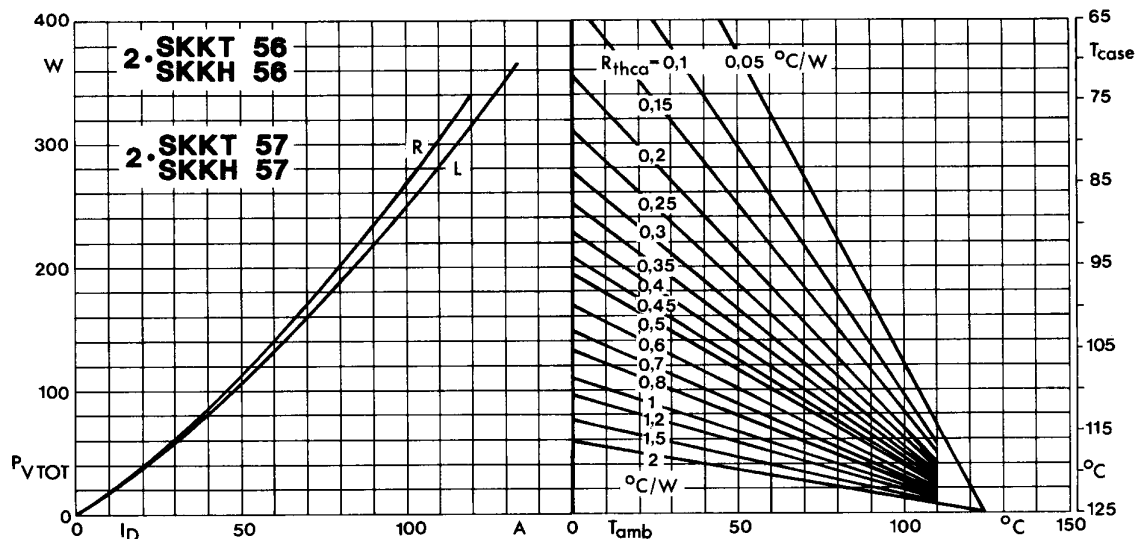


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

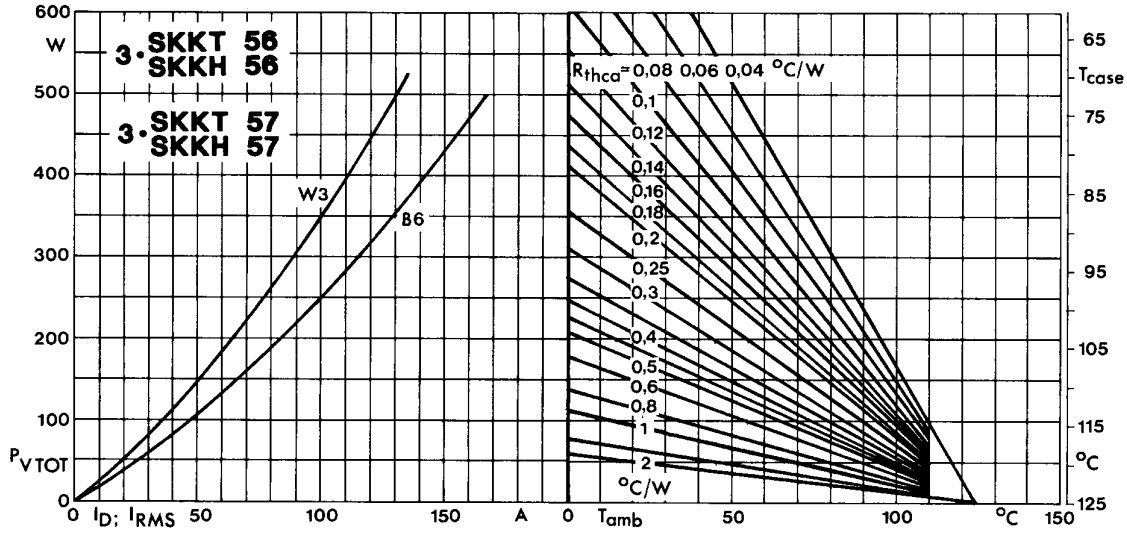


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

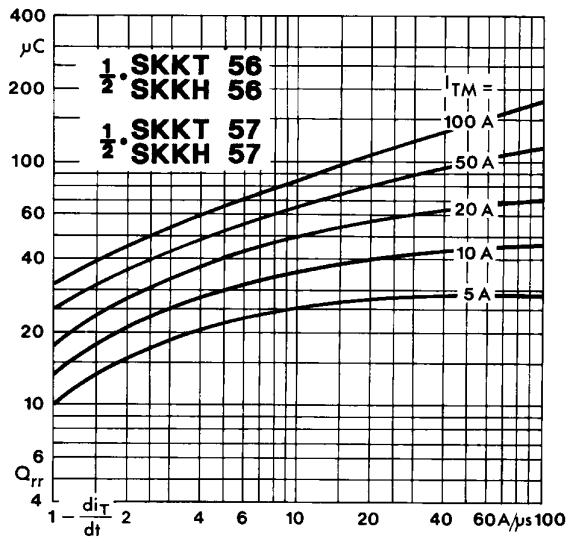


Fig. 5 Recovered charge vs. current decrease

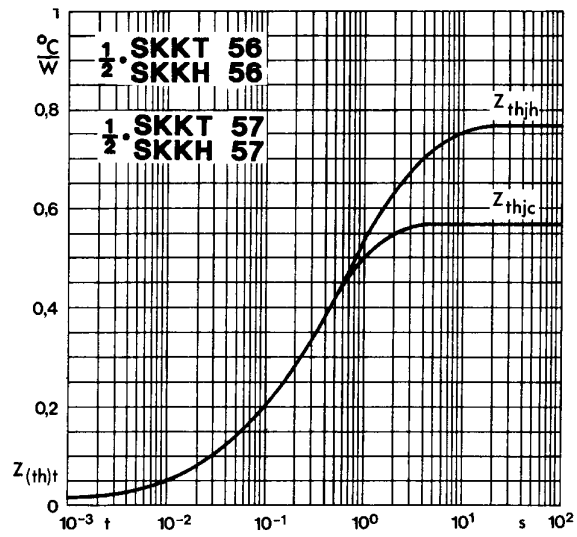


Fig. 6 Transient thermal impedance vs. time

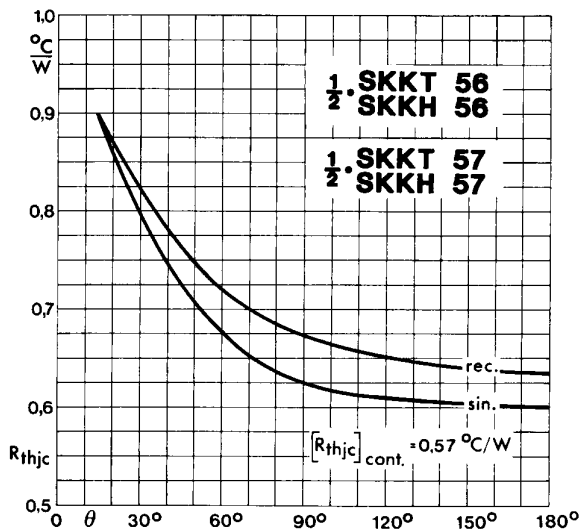


Fig. 7 Thermal resistance vs. conduction angle

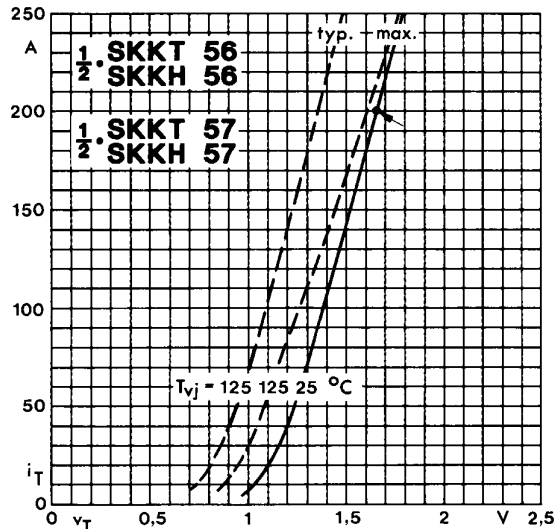


Fig. 8 On-state characteristics

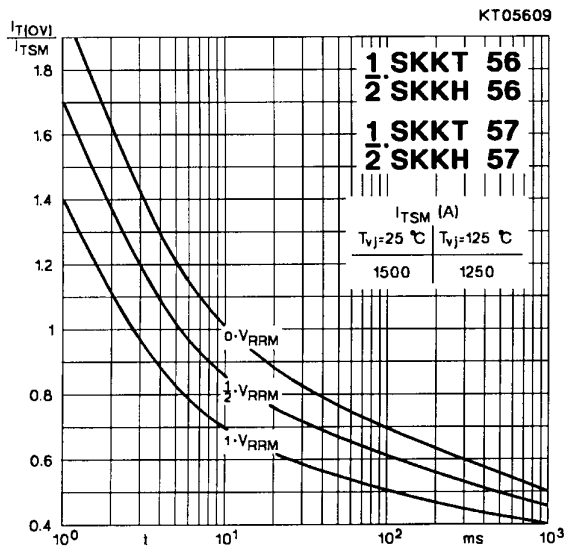


Fig. 9 Surge overload current vs. time

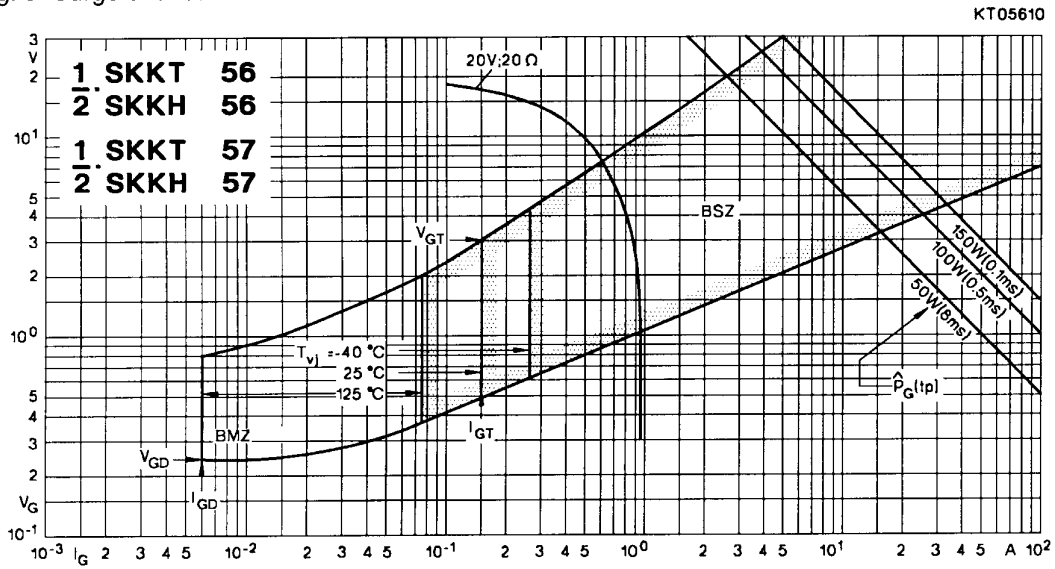


Fig. 10 Gate trigger characteristics

## SKKT 19 ... 105

Case A 5

IEC 192-2: A 77 A

JEDEC: TO-240 AA

SEMIPACK® 1

UL recognized, file no. E 63 532



Dimensions in mm

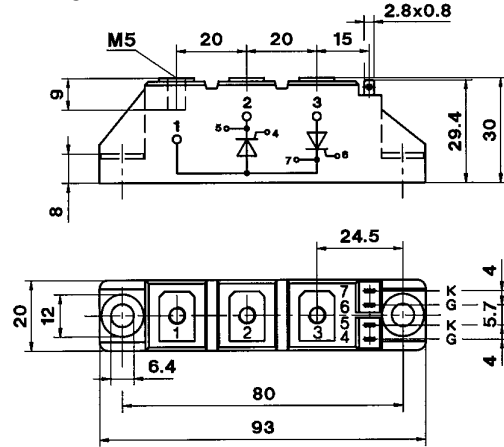
## SKKT 20/ ... 106/

Case A 46

IEC 192-2: A 77 A

JEDEC: TO-240 AA

SEMIPACK® 1



Dimensions in mm

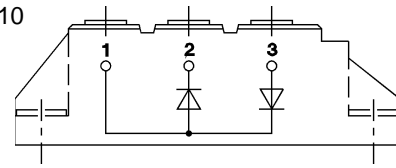
## SKKH 26 ... 105

Case A 6



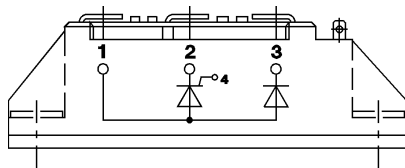
## SKKD 26 ... 100

Case A 10



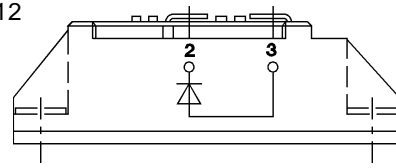
## SKNH 56 ... 91

Case A 7



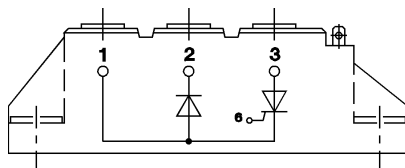
## SKKE 81

Case A 12



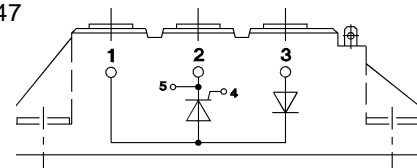
## SKKL 56 ... 105

Case A 9



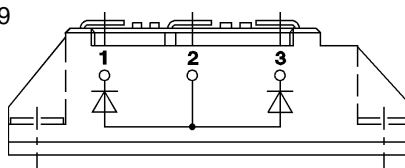
## SKKH 27 ... 106

Case A 47



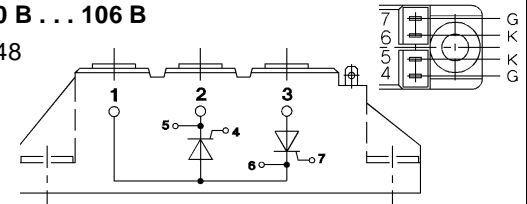
## SKND 46 ... 81

Case A 19



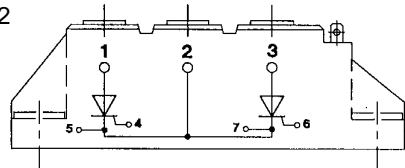
## SKKT 20 B ... 106 B

Case A 48



## SKMT 92

Case A 72



## SKKL 42 ... 106

Case A 59

