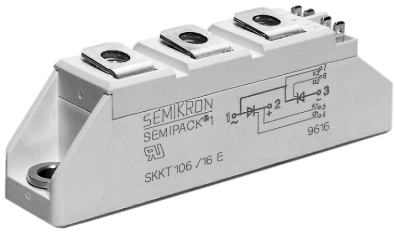
# SEMIPACK® 1
## Thyristor / Diode Modules

**SKKT 71 SKKH 71**
**SKKT 72 SKKH 72**
**SKKT 72B**

| $V_{RSM}$ V | $V_{RRM}$ $V_{DRM}$ V | $(dv/dt)_{cr}$ V/µs | $I_{TRMS}$ (maximum value for continuous operation) 125 A; $I_{TAV}$ (sin. 180; $T_{case}$ = 78 °C) 80 A | | | |
|---|---|---|---|---|---|---|
| 700 | 600 | 500 | **SKKT 71/06 D** | – | – | **SKKH 72/06 D** |
| 900 | 800 | 500 | **SKKT 71/08 D** | **SKKT 72/08 D**[1)] | **SKKH 71/08 D** | **SKKH 72/08 D** |
| 1300 | 1200 | 1000 | **SKKT 71/12 E** | **SKKT 72/12 E**[1)] | **SKKH 71/12 E** | **SKKH 72/12 E** |
| 1500 | 1400 | 1000 | **SKKT 71/14 E** | **SKKT 72/14 E**[1)] | **SKKH 71/14 E** | **SKKH 72/14 E** |
| 1700 | 1600 | 1000 | **SKKT 71/16 E** | **SKKT 72/16 E**[1)] | **SKKH 71/16 E** | **SKKH 72/16 E** |
| 1900 | 1800 | 1000 | **SKKT 71/18 E** | **SKKT 72/18 E**[1)] | **SKKH 71/18 E** | **SKKH 72/18 E** |
| 2100 | 2000 | 1000 | – | **SKKT 72/20 E** | – | **SKKH 72/20 E** |
| 2300 | 2200 | 1000 | – | **SKKT 72/22 E** | – | **SKKH 72/22 E** |

| Symbol | Conditions | | SKKT 71 SKKH 71 | SKKT 72 SKKT 72B SKKH 72 | Units |
|---|---|---|---|---|---|
| $I_{TAV}$ | sin. 180; | $T_{case}$ = 78 °C | 80 | | A |
| | | $T_{case}$ = 85 °C | 70 | | A |
| $I_D$ | B2/B6 | $T_{amb}$ = 45 °C; P 3/180 | 62 / 75 | | A |
| | | $T_{amb}$ = 35 °C; P 3/180 F | 115 / 145 | | A |
| $I_{RMS}$ | W1/W3 | $T_{amb}$ = 45 °C; P 3/180 F | 155 / 3 x 115 | | A |
| $I_{TSM}$ | $T_{vj}$ = 25 °C; 10 ms | | 1 600 | | A |
| | $T_{vj}$ = 125 °C; 10 ms | | 1 450 | | A |
| $i^2t$ | $T_{vj}$ = 25 °C; 8,3 ... 10 ms | | 13 000 | | $A^2s$ |
| | $T_{vj}$ = 125 °C; 8,3 ... 10 ms | | 10 500 | | $A^2s$ |
| $t_{gd}$ | $T_{vj}$ = 25 °C; $I_G$ = 1 A | | | | |
| | | $di_G/dt$ = 1 A/µs | 1 | | µs |
| $t_{gr}$ | $V_D = 0,67 \cdot V_{DRM}$ | | 1 | | µs |
| $(di/dt)_{cr}$ | $T_{vj}$ = 125 °C | | 150 | | A/µs |
| $t_q$ | $T_{vj}$ = 125 °C | | typ. 80 | | µs |
| $I_H$ | $T_{vj}$ = 25 °C; typ./max. | | 150 / 250 | | mA |
| $I_L$ | $T_{vj}$ = 25 °C; $R_G$ = 32 Ω; typ./max. | | 300 / 600 | | mA |
| $V_T$ | $T_{vj}$ = 25 °C; $I_T$ = 300A | | max. 1,9 | | V |
| $V_{T(TO)}$ | $T_{vj}$ = 125 °C | | 0,9 | | V |
| $r_T$ | $T_{vj}$ = 125 °C | | 3,5 | | mΩ |
| $I_{DD}$; $I_{RD}$ | $T_{vj}$ = 125 °C; $V_{RD} = V_{RRM}$ | | | | |
| | | $V_{DD} = V_{DRM}$ | max. 20[3)] | | 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 | 0,35 / 0,18 | | °C/W |
| | sin. 180 | per thyristor / per module | 0,37 / 0,19 | | °C/W |
| | rec. 120 | per thyristor / per module | 0,39 / 0,20 | | °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 %[2)] | | Nm |
| $M_2$ | to terminals | SI (US) units | 3 (26 lb. in.) ± 15 % | | Nm |
| a | | | 5 · 9,81 | | $m/s^2$ |
| w | approx. | | 120 | | g |
| Case | → page B 1 – 95 | SKKT 71: A 5; SKKH 71: A 6 | SKKT 72: A 46; SKKT 72B: A 48; SKKH 72: A 47 | | |



**SKKT 71** **SKKH 71**

**SKKT 72** **SKKH 72**
**SKKT 72B**

### 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 72 B configuration (case A 48)
2) See the assembly instructions
3) /20 E, /22 E max. 30 mA

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

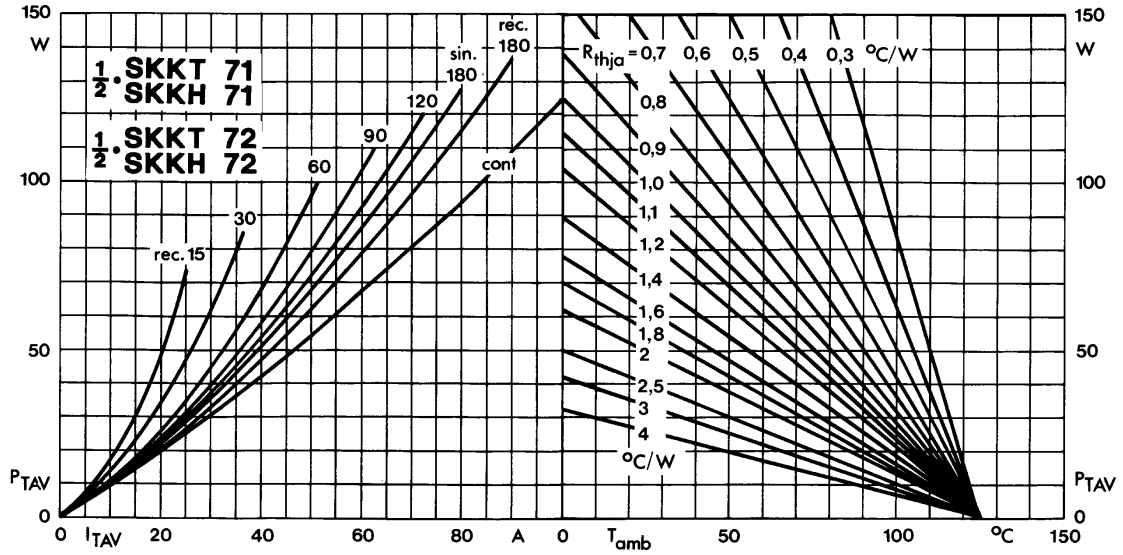



Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

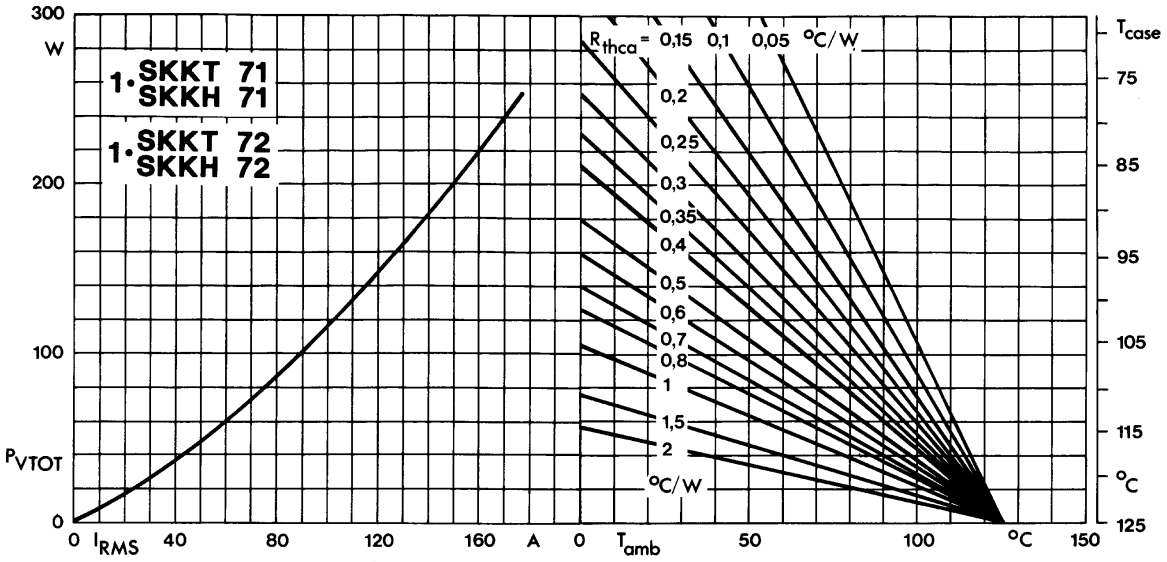



Fig. 2 Power dissipation per module vs. rms current and case temperature

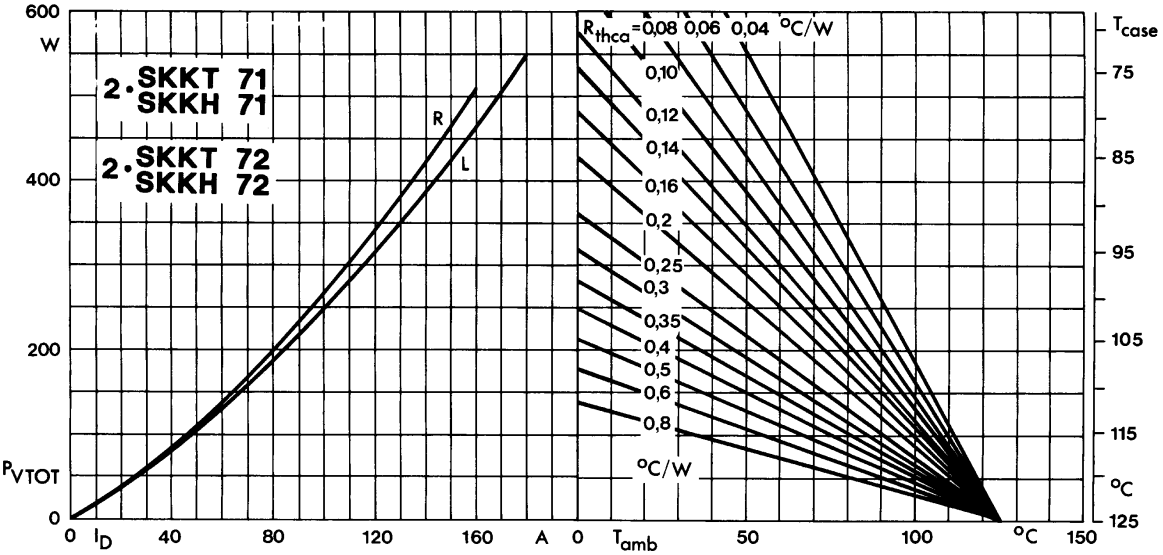



Fig. 3 Power dissipation of two modules vs. direct current and case temperature

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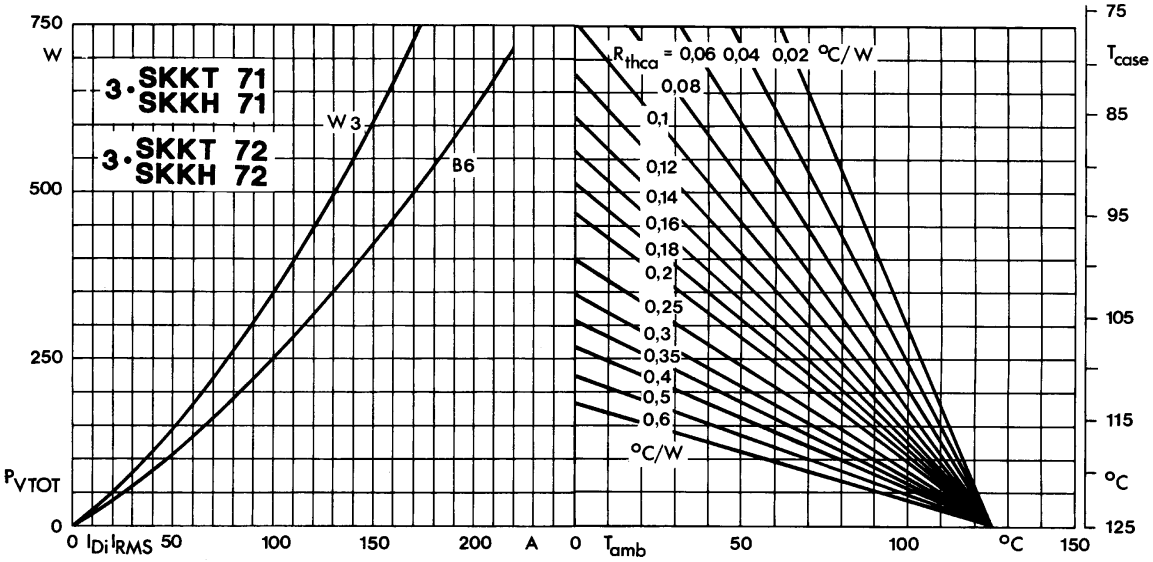


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

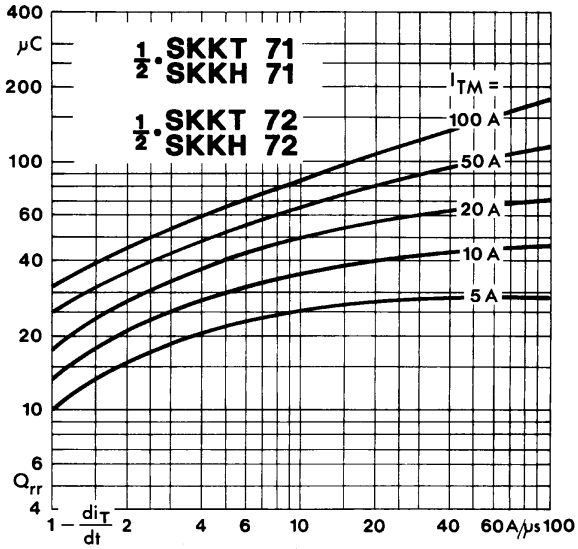


Fig. 5 Recovered charge vs. current decrease

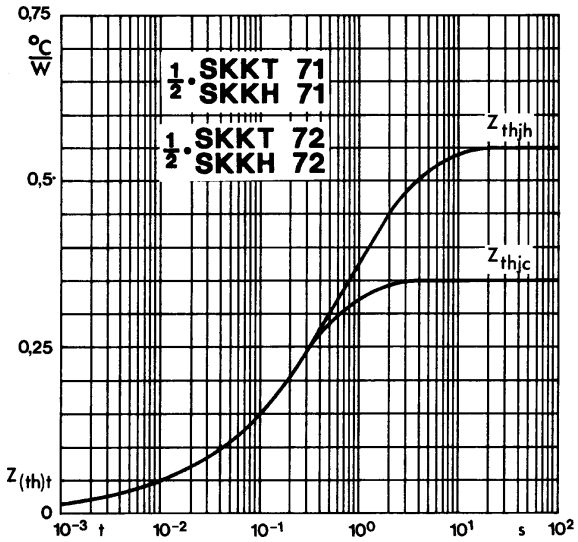


Fig. 6 Transient thermal impedance vs. time

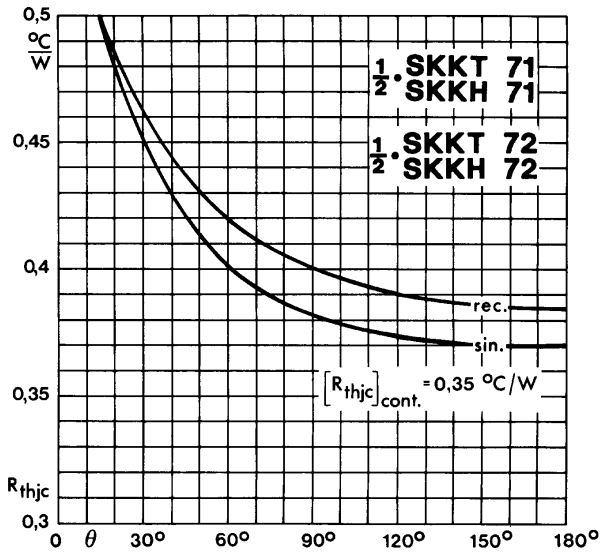


Fig. 7 Thermal resistance vs. conduction angle

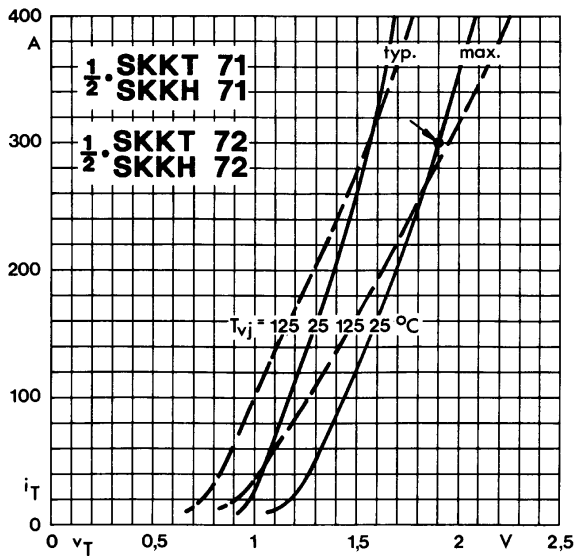


Fig. 8 On-state characteristics

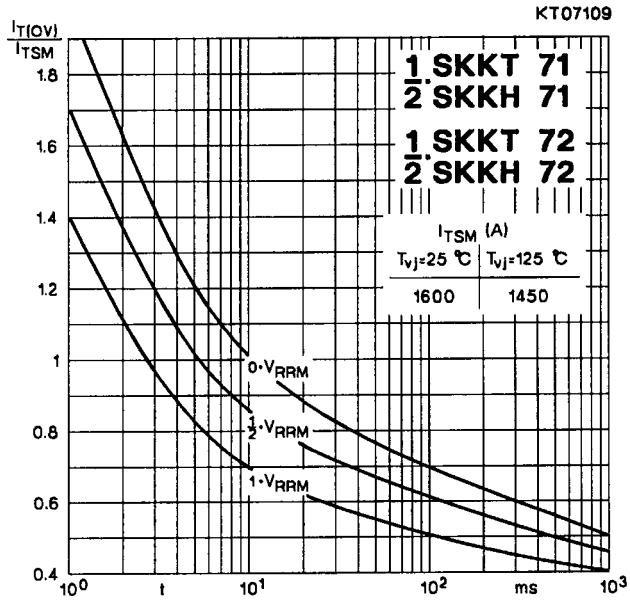


Fig. 9 Surge overload current vs. time

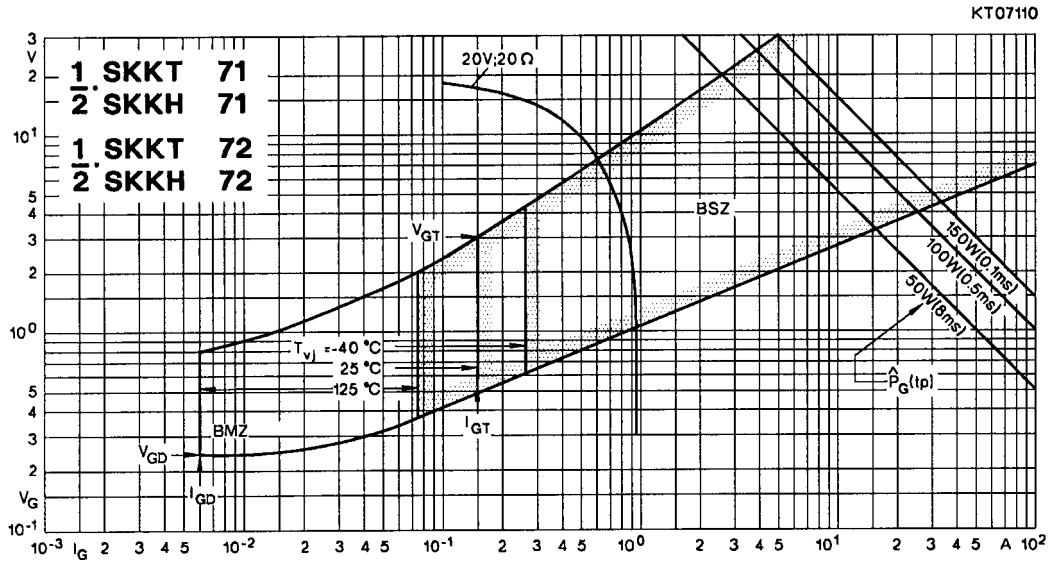


Fig. 10 Gate trigger characteristics

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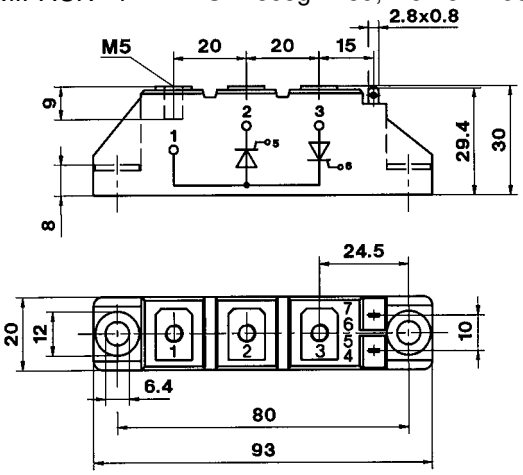
**SKKT 19 . . . 105**

Case A 5 — IEC 192-2: A 77 A, JEDEC: TO-240 AA

SEMIPACK® 1 — UL recognized, file no. E 63 532

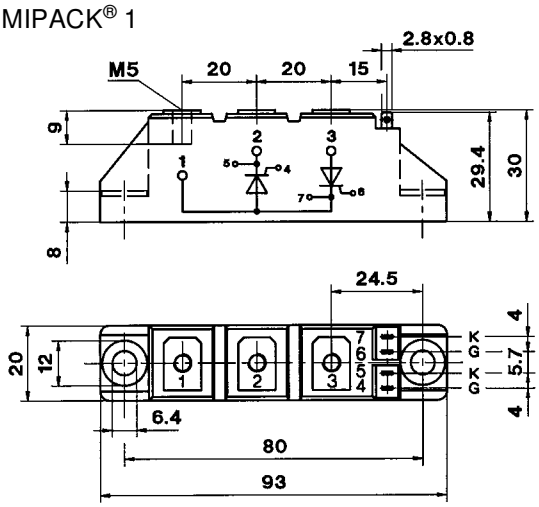



Dimensions in mm

**SKKT 20/ . . . 106/**

Case A 46 — IEC 192-2: A 77 A, JEDEC: TO-240 AA

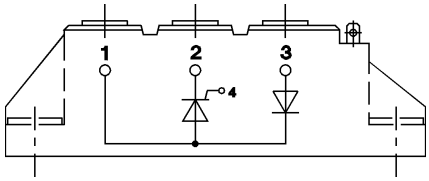
SEMIPACK® 1




Dimensions in mm

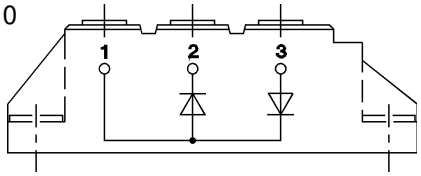
**SKKH 26 . . . 105**

Case A 6



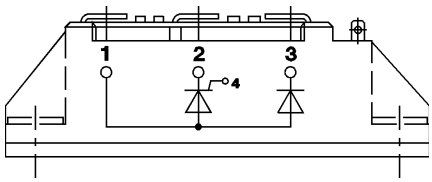
**SKKD 26 . . . 100**

Case A 10



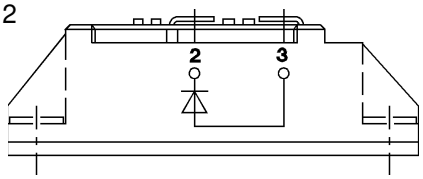
**SKNH 56 . . . 91**

Case A 7



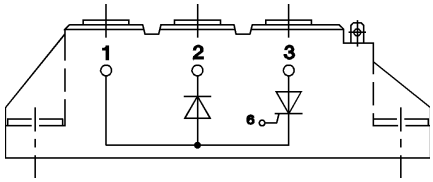
**SKKE 81**

Case A 12



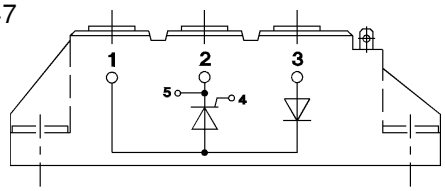
**SKKL 56 . . . 105**

Case A 9



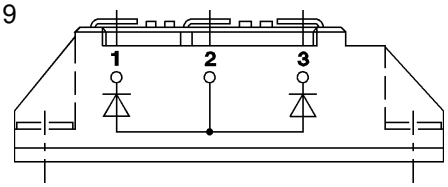
**SKKH 27 . . . 106**

Case A 47



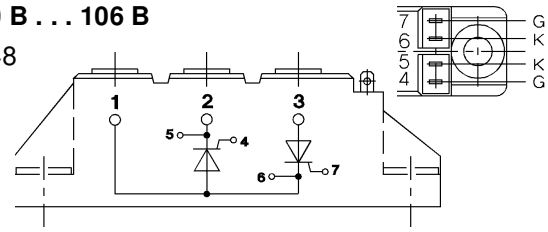
**SKND 46 . . . 81**

Case A 19



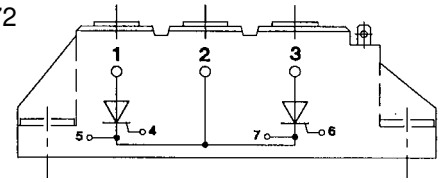
**SKKT 20 B . . . 106 B**

Case A 48




**SKMT 92**

Case A 72



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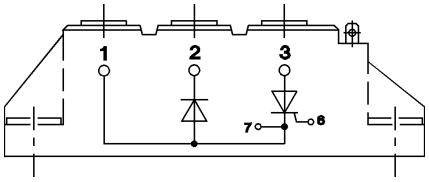
Case A 59