

| V <sub>RSM</sub> | V <sub>RRM</sub> | (dv/dt) <sub>cr</sub> | I <sub>TRMS</sub> (maximum value for continuous operation) |                             |               |               |
|------------------|------------------|-----------------------|------------------------------------------------------------|-----------------------------|---------------|---------------|
|                  | V <sub>DRM</sub> |                       | 180 A                                                      |                             |               |               |
|                  |                  |                       | I <sub>TAV</sub> (sin. 180; T <sub>case</sub> = 80 °C)     |                             |               |               |
| V                | V                | V/μs                  | 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 <sup>1)</sup> | SKKH 105/08 D | SKKH 106/08 D |
| 1300             | 1200             | 1000                  | SKKT 105/12 E                                              | SKKT 106/12 E <sup>1)</sup> | SKKH 105/12 E | SKKH 106/12 E |
| 1500             | 1400             | 1000                  | SKKT 105/14 E                                              | SKKT 106/14 E <sup>1)</sup> | SKKH 105/14 E | SKKH 106/14 E |
| 1700             | 1600             | 1000                  | SKKT 105/16 E                                              | SKKT 106/16 E <sup>1)</sup> | SKKH 105/16 E | SKKH 106/16 E |
| 1900             | 1800             | 1000                  | SKKT 105/18 E                                              | SKKT 106/18 E <sup>1)</sup> | SKKH 105/18 E | SKKH 106/18 E |

| Symbol                            | Conditions                                                                                         | SKKT 105<br>SKKH 105                      | SKKT 106<br>SKKT 106B<br>SKKH 106                   | Units                |
|-----------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------|----------------------|
| I <sub>TAV</sub>                  | sin. 180; T <sub>case</sub> = 85 °C                                                                | 106                                       |                                                     | A                    |
| I <sub>D</sub>                    | B2/B6 T <sub>amb</sub> = 35 °C; P 3/180 F                                                          | 145 / 180                                 |                                                     | A                    |
|                                   | P 16/200 F                                                                                         | 190 / 260                                 |                                                     | A                    |
| I <sub>RMS</sub>                  | W1/W3 T <sub>amb</sub> = 35 °C; P 3/180 F                                                          | 200 / 3 x 140                             |                                                     | A                    |
| I <sub>TSM</sub>                  | T <sub>vj</sub> = 25 °C; 10 ms                                                                     | 2 250                                     |                                                     | A                    |
|                                   | T <sub>vj</sub> = 130 °C; 10 ms                                                                    | 1 900                                     |                                                     | A                    |
| i <sup>2</sup> t                  | T <sub>vj</sub> = 25 °C; 8,3 ... 10 ms                                                             | 25 000                                    |                                                     | A <sup>2</sup> s     |
|                                   | T <sub>vj</sub> = 130 °C; 8,3 ... 10 ms                                                            | 18 000                                    |                                                     | A <sup>2</sup> s     |
| t <sub>gd</sub>                   | T <sub>vj</sub> = 25 °C; I <sub>G</sub> = 1 A                                                      | 1                                         |                                                     | μs                   |
|                                   | di <sub>G</sub> /dt = 1 A/μs                                                                       | 2                                         |                                                     | μs                   |
| t <sub>gr</sub>                   | V <sub>D</sub> = 0,67 · V <sub>DRM</sub>                                                           |                                           |                                                     |                      |
| (di/dt) <sub>cr</sub>             | T <sub>vj</sub> = 130 °C                                                                           | 150                                       |                                                     | A/μs                 |
| t <sub>q</sub>                    | T <sub>vj</sub> = 130 °C                                                                           | typ. 100                                  |                                                     | 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> = 300 A                                                    | max. 1,65                                 |                                                     | V                    |
| V <sub>T(TO)</sub>                | T <sub>vj</sub> = 130 °C                                                                           | 0,9                                       |                                                     | V                    |
| r <sub>T</sub>                    | T <sub>vj</sub> = 130 °C                                                                           | 2                                         |                                                     | mΩ                   |
| I <sub>DD</sub> ; I <sub>RD</sub> | T <sub>vj</sub> = 130 °C; V <sub>RD</sub> = V <sub>RRM</sub><br>V <sub>DD</sub> = V <sub>DRM</sub> | max. 20                                   |                                                     | 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> = 130 °C; d.c.                                                                     | 0,25                                      |                                                     | V                    |
| I <sub>GD</sub>                   | T <sub>vj</sub> = 130 °C; d.c.                                                                     | 6                                         |                                                     | mA                   |
| R <sub>thjc</sub>                 | cont. }<br>sin. 180 } per thyristor /<br>rec. 120 } per module                                     | 0,28 / 0,14<br>0,30 / 0,15<br>0,32 / 0,16 |                                                     | °C/W<br>°C/W<br>°C/W |
| R <sub>thch</sub>                 |                                                                                                    | 0,2 / 0,1                                 |                                                     | °C/W                 |
| T <sub>vj</sub>                   |                                                                                                    | – 40 ... + 130                            |                                                     | °C                   |
| T <sub>stg</sub>                  |                                                                                                    | – 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                                                                        | 5 (44 lb. in.) ± 15 % <sup>2)</sup>       |                                                     | Nm                   |
| M <sub>2</sub>                    | to terminals }                                                                                     | 3 (26 lb. in.) ± 15 % <sup>2)</sup>       |                                                     | Nm                   |
| a                                 |                                                                                                    | 5 · 9,81                                  |                                                     | m/s <sup>2</sup>     |
| w                                 | approx.                                                                                            | 95                                        |                                                     | g                    |
| Case                              | → page B 1 – 95                                                                                    | SKKT 105: A 5<br>SKKH 105: A 6            | SKKT 106: A 46<br>SKKT 106B: A 48<br>SKKH 106: A 47 |                      |

SEMIPACK® 1

Thyristor / Diode Modules

SKKT 105

SKKH 105

SKKT 106

SKKH 106

SKKT 106B



SKKT 105

SKKH 105



SKKT 106

SKKH 106

SKKT 106B

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

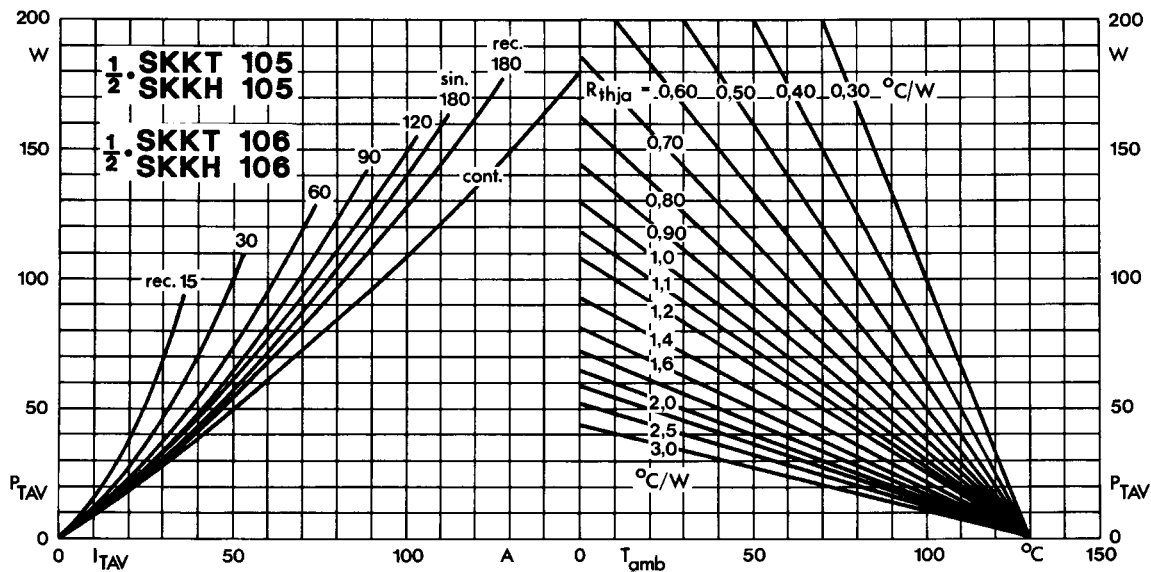


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

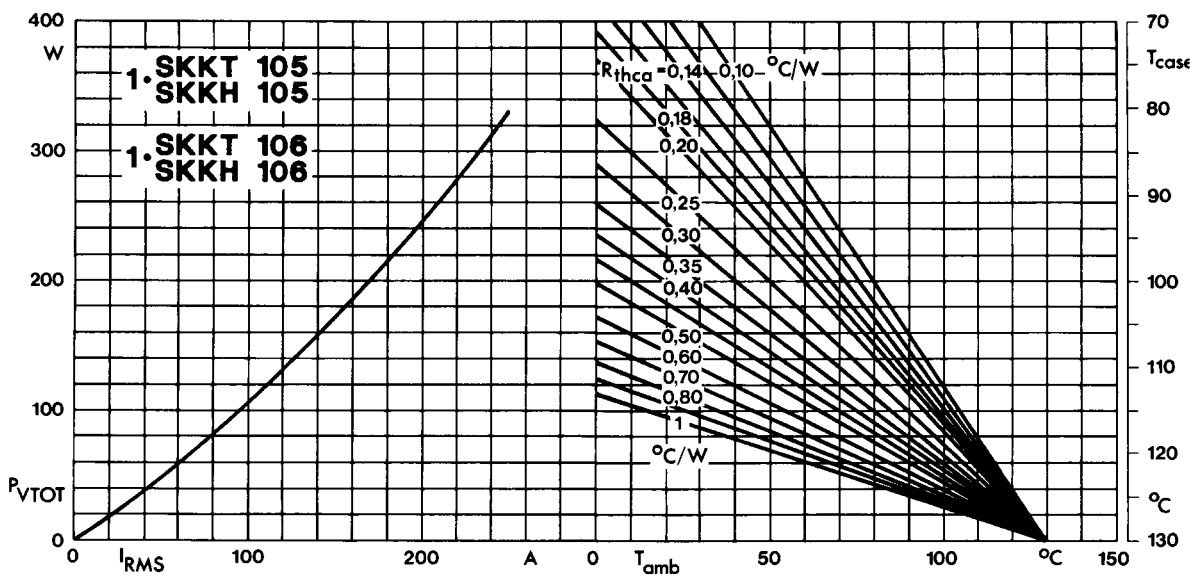


Fig. 2 Power dissipation per module vs. rms current and case temperature

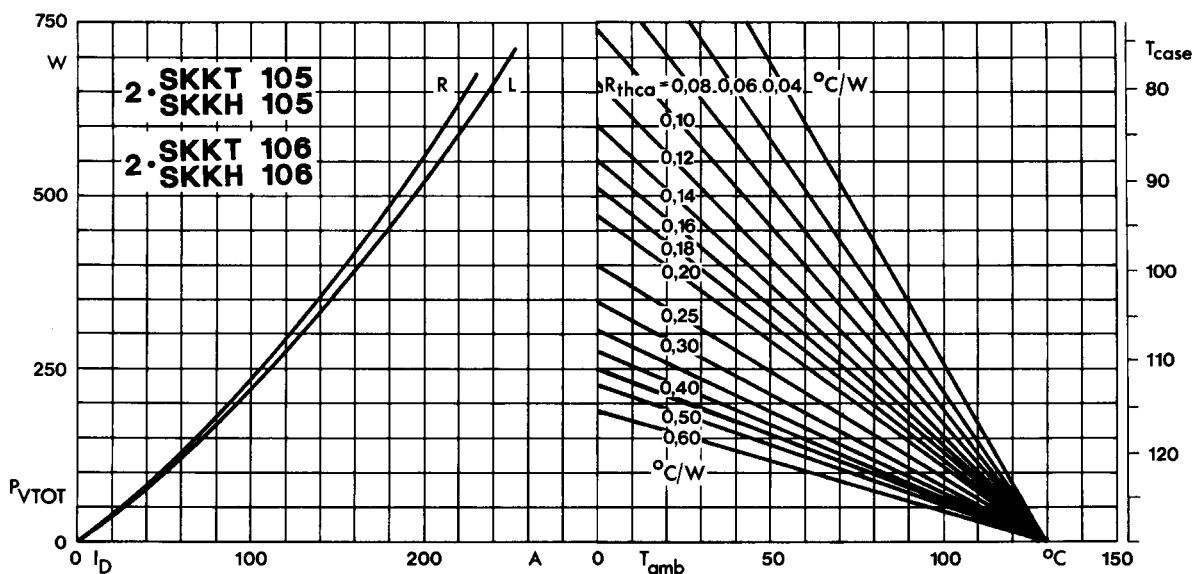


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

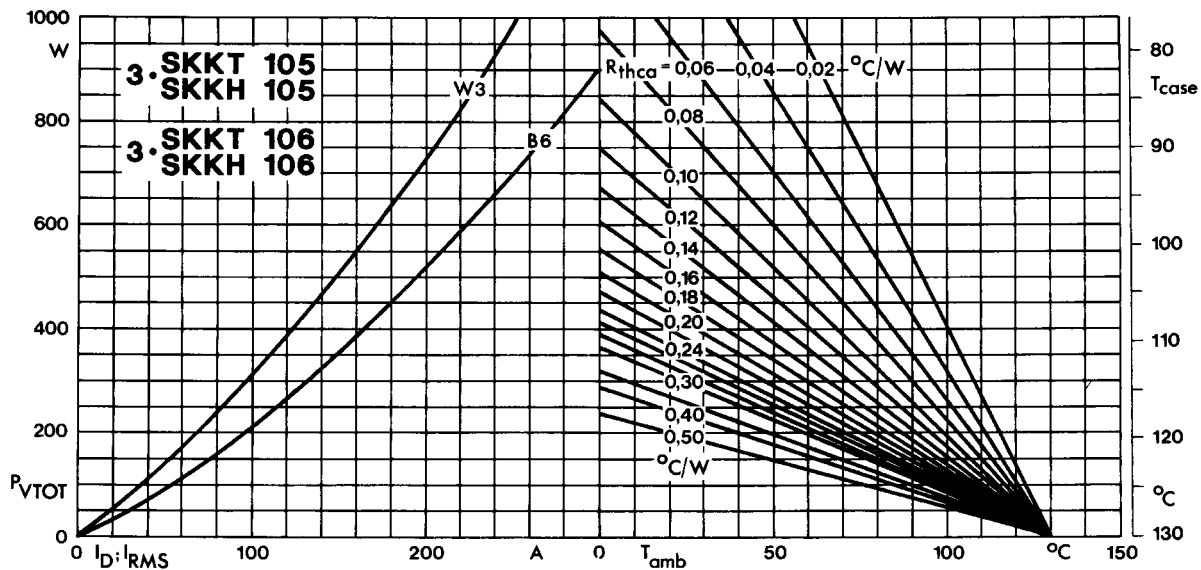


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

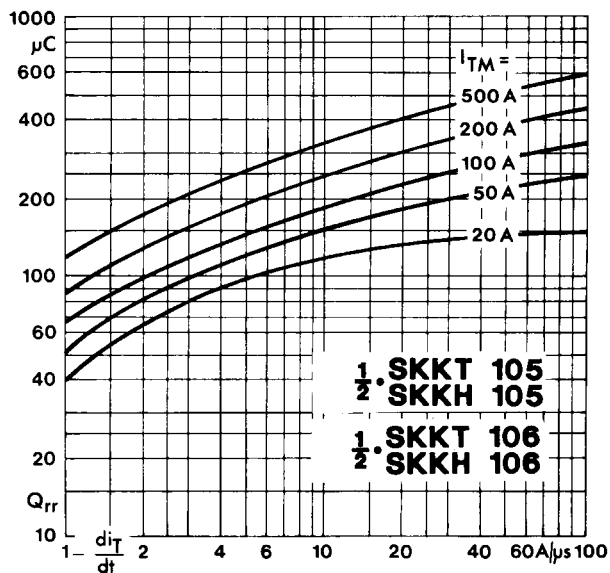


Fig. 5 Recovered charge vs. current decrease

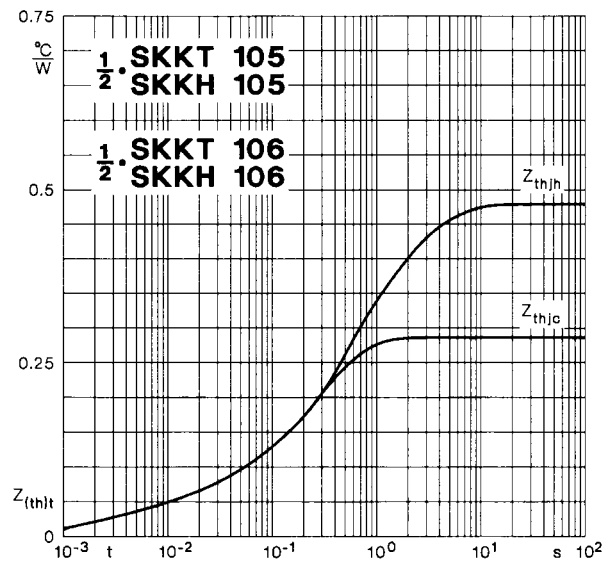


Fig. 6 Transient thermal impedance vs. time

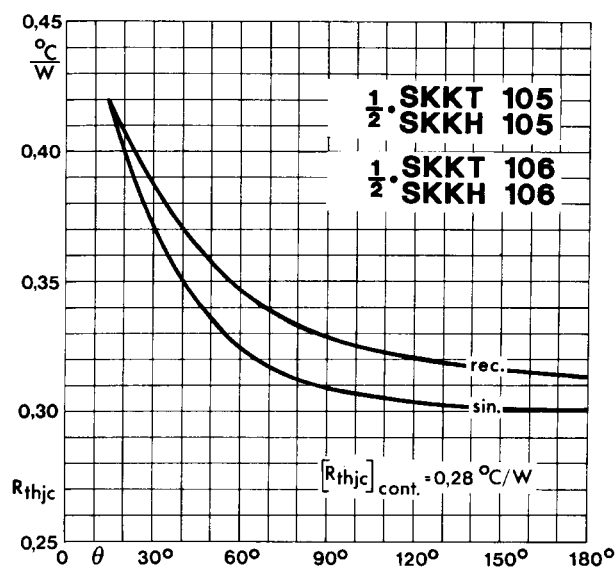


Fig. 7 Thermal resistance vs. conduction angle

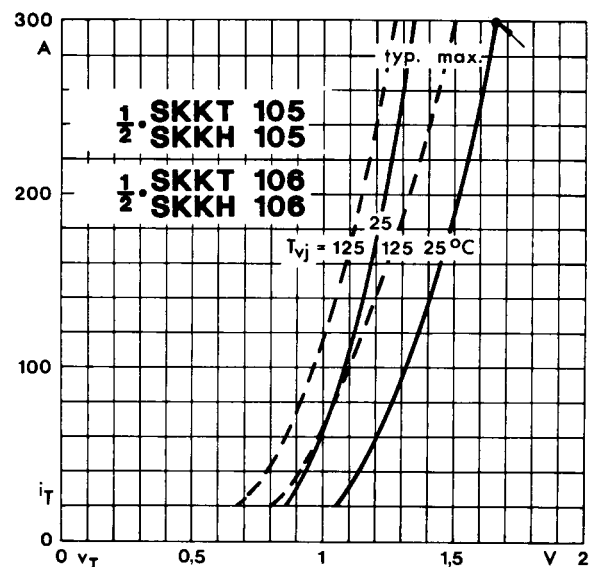


Fig. 8 On-state characteristics

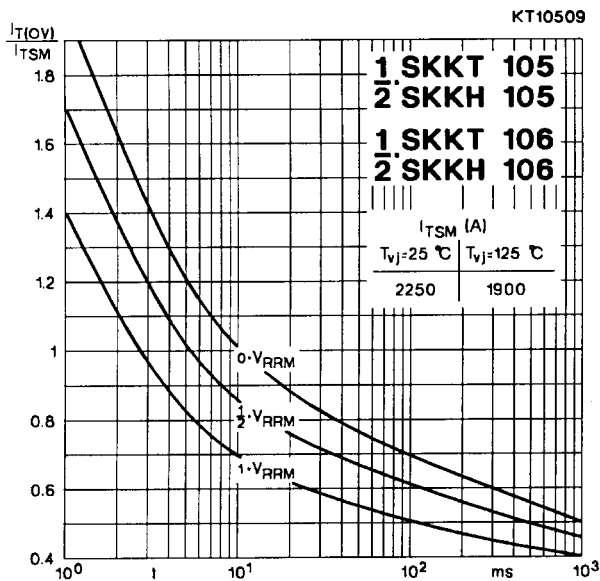


Fig. 9 Surge overload current vs. time

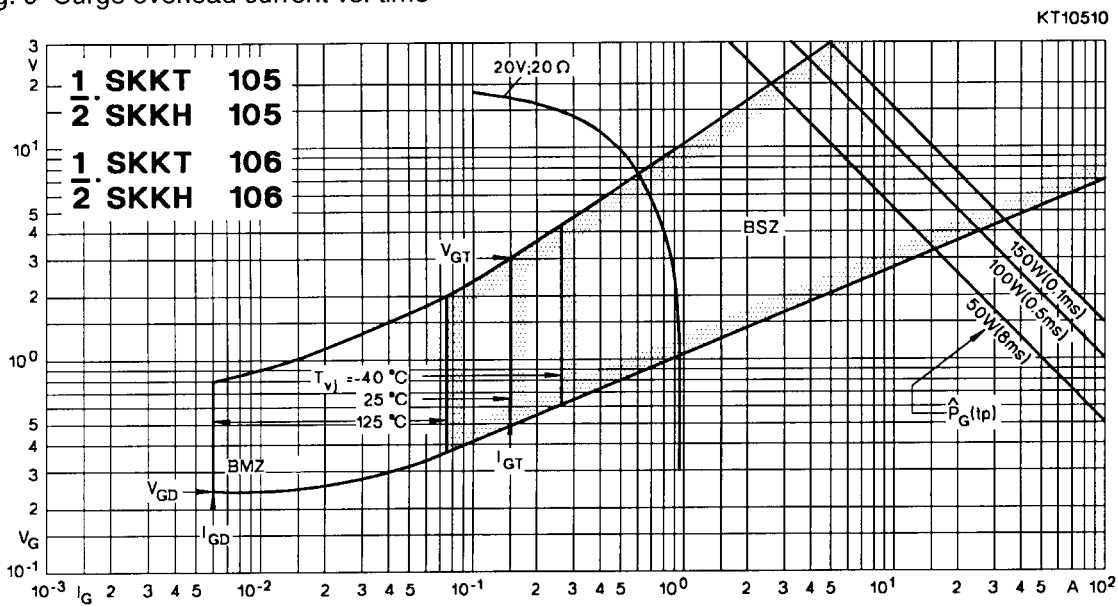


Fig. 10 Gate trigger characteristics

## SKKT 19 ... 105

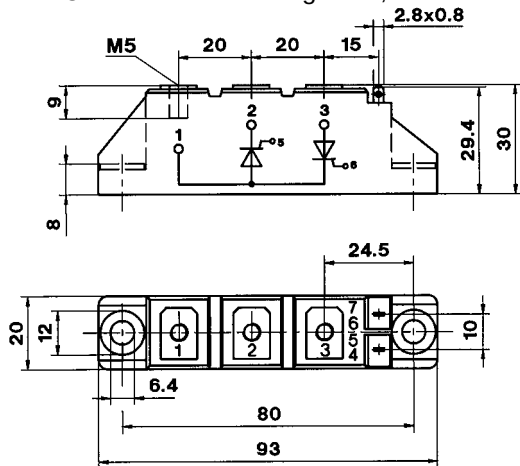
Case A 5

IEC 192-2: A 77 A

JEDEC: TO-240 AA

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UL recognized, file no. E 63 532



Dimensions in mm

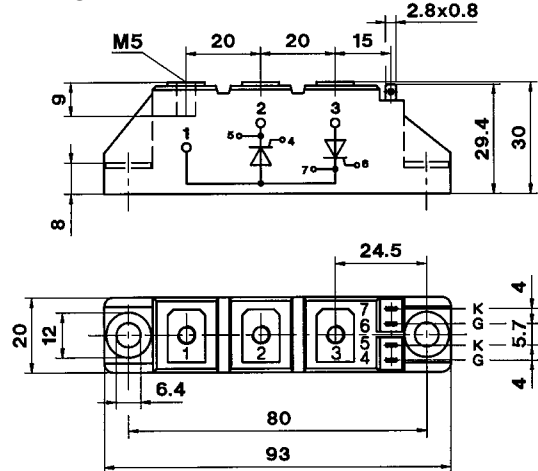
## SKKT 20/ ... 106/

Case A 46

IEC 192-2: A 77 A

JEDEC: TO-240 AA

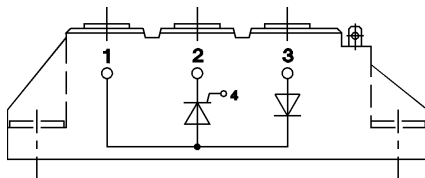
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Dimensions in mm

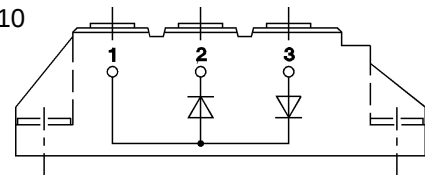
## SKKH 26 ... 105

Case A 6



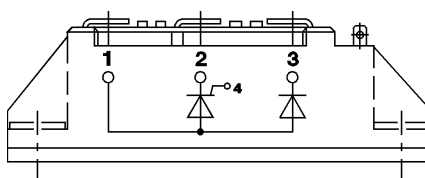
## SKKD 26 ... 100

Case A 10



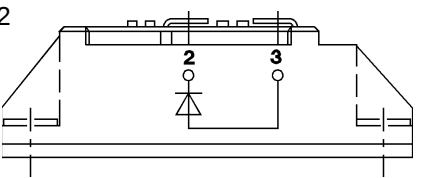
## SKNH 56 ... 91

Case A 7



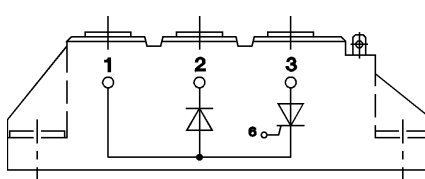
## SKKE 81

Case A 12



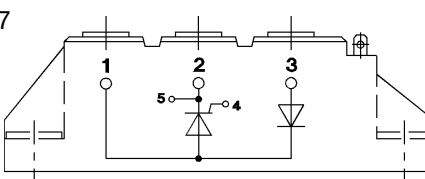
## SKKL 56 ... 105

Case A 9



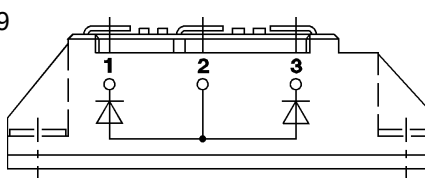
## SKKH 27 ... 106

Case A 47



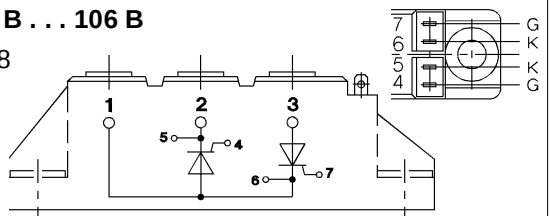
## SKND 46 ... 81

Case A 19



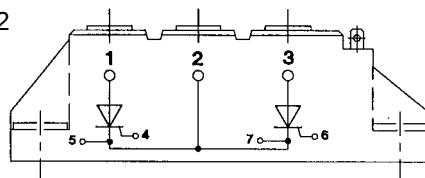
## SKKT 20 B ... 106 B

Case A 48



## SKMT 92

Case A 72



## SKKL 42 ... 106

Case A 59

