柳晶®

# Thyristor Diode Modules

Liujing rectifier co., Ltd.

| $V_{RSM}$ | $V_{RRM}$ $V_{DRM}$ | $I_{TRMS}$ =180A(maximum value for continous operation) | | |
|---|---|---|---|---|
| V | V | $I_{TAV}$ =106A(sin.180; Tc=85℃) | | |
| 900 | 800 | SKKT 106/08E | SKKT 106B08E | SKKH 106/08E |
| 1300 | 1200 | SKKT 106/12E | SKKT 106B12E | SKKH 106/12E |
| 1500 | 1400 | SKKT 106/14E | SKKT 106B14E | SKKH 106/14E |
| 1700 | 1600 | SKKT 106/16E | SKKT 106B16E | SKKH 106/16E |
| 1900 | 1800 | SKKT 106/18E | SKKT 106B18E | SKKH 106/18E |

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $I_{TAV}$ | sin. 180; Tc = 85(100)℃; | 106 (78) | A |
| $I_D$ | P3/180F; Ta = 35℃; B2 / B6 | 145 / 180 | A |
| | P16/200F; Ta = 35℃; B2 / B6 | 190 / 260 | A |
| $I_{RMS}$ | P3/180F; Ta = 35℃; W1 / W3 | 200 / 3 * 140 | A |
| $I_{TSM}$ | $T_{vj}$ = 25℃; 10ms | 2250 | A |
| | $T_{vj}$ = 130℃; 10ms | 1900 | A |
| $i^2t$ | $T_{vj}$ = 25℃; 8，3 ...10ms | 25000 | A²S |
| | $T_{vj}$ = 130℃; 8，3 ...10ms | 1800 | A²S |
| $V_T$ | $T_{vj}$ = 25℃; $I_T$=318A | max.1.65 | V |
| $V_{T(TO)}$ | $T_{vj}$ = 130℃ | max.0.9 | V |
| $r_T$ | $T_{vj}$ = 130℃ | max.2 | mΩ |
| $I_{DD}$;$I_{RD}$ | $T_{vj}$ = 130℃; $V_{RD}$=$V_{RRM}$ ; $V_{DD}$=$V_{DRM}$ | max.20 | mA |
| $t_{gd}$ | $T_{vj}$ = 25℃; $I_G$ = 1A; $di_G/dt$ = A/μs | 1 | μs |
| $t_{gr}$ | $V_D$ = 0.67*$V_{DRM}$ | 2 | μs |
| $(di/dt)_{cr}$ | $T_{vj}$ = 130℃ | max.150 | A/μs |
| $(dv/dt)_{cr}$ | $T_{vj}$ = 130℃ | max.1000 | V/μs |
| $t_q$ | $T_{vj}$ = 130℃ | 250 | μs |
| $I_H$ | $T_{vj}$ = 25℃ ; typ./max | 150 / 250 | mA |
| $I_L$ | $T_{vj}$ = 25℃ ; RG = 33Ω ; typ./max | 300 / 600 | mA |
| $V_{GT}$ | $T_{vj}$ = 25℃ ; d.c. | min. 3 | V |
| $I_{GT}$ | $T_{vj}$ = 25℃ ; d.c. | min. 150 | mA |
| $V_{GD}$ | $T_{vj}$ = 130℃ ; d.c. | max. 0.25 | V |
| $I_{GD}$ | $T_{vj}$ = 130℃ ; d.c. | max. 6 | mA |
| $R_{th(j-c)}$ | cont.; per thyristor/per module | 0.28 / 0.14 | K/W |
| $R_{th(j-c)}$ | sin. 180; per thyristor/per module | 0.3 / 0.15 | K/W |
| $R_{th(j-c)}$ | rec. 120; per thyristor/per module | 0.32 / 0.16 | K/W |
| $R_{th(j-c)}$ | per thyristor/per module | 0.2 / 0.1 | K/W |
| $T_{vj}$ | | - 40...+ 130 | ℃ |
| $T_{stg}$ | | - 40...+ 125 | ℃ |
| $V_{isol}$ | a. c. 50Hz; r.m. | 3600 / 3000 | V~ |
| $M_s$ | to heatsink | 5 ± 15%¹) | Nm |
| $M_t$ | to terminal | 3 ± 15% | Nm |
| a | | 5 * 9.81 | m/s² |
| m | approx. | 95 | g |
| Case | SKKT | A 46 | |
| | SKKT ...B | A 47 | |
| | SKKH | A 48 | |

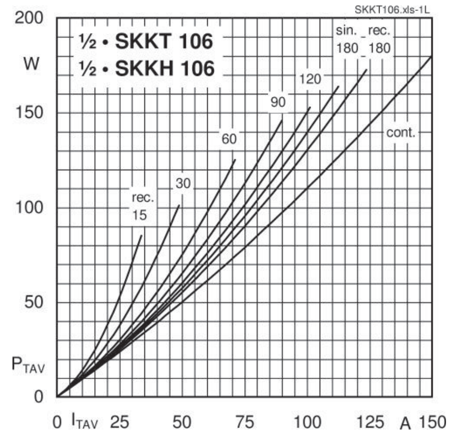


Fig. 1L Power dissipation per thyristor vs. on-state current

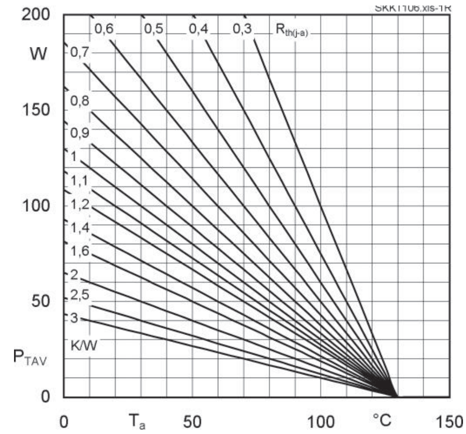


Fig. 1R Power dissipation per thyristor vs. ambient temp.

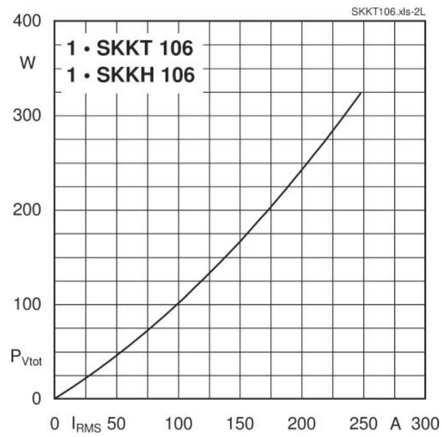


Fig. 2L Power dissipation per module vs. rms current

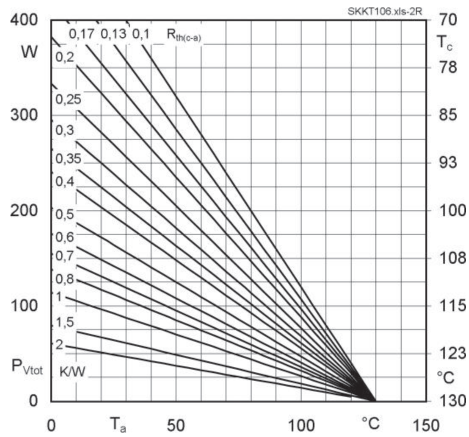


Fig. 2R Power dissipation per module vs. case temp.

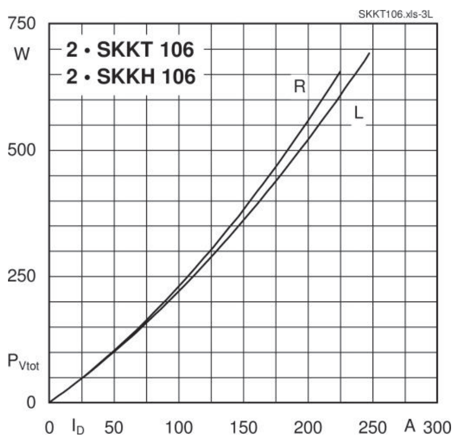


Fig. 3L Power dissipation of two modules vs. direct current

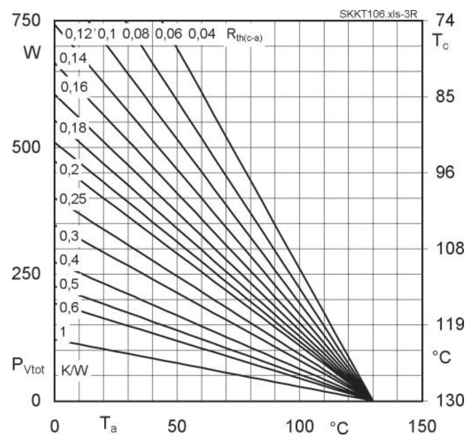


Fig. 3R Power dissipation of two modules vs. case temp.

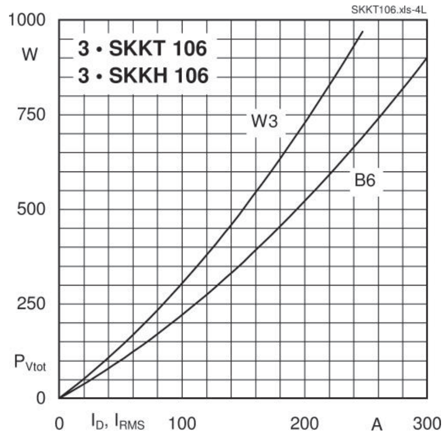



Fig. 4L Power dissipation of three modules vs. direct and rms current

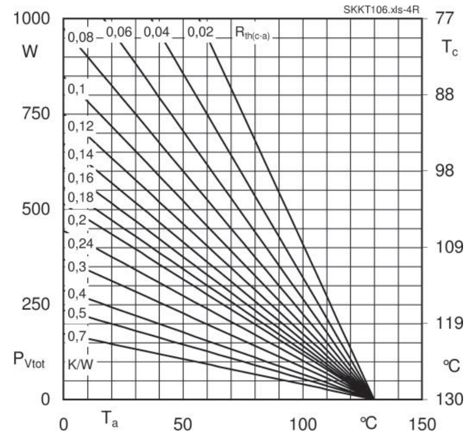



Fig. 4R Power dissipation of three modules vs. case temp.

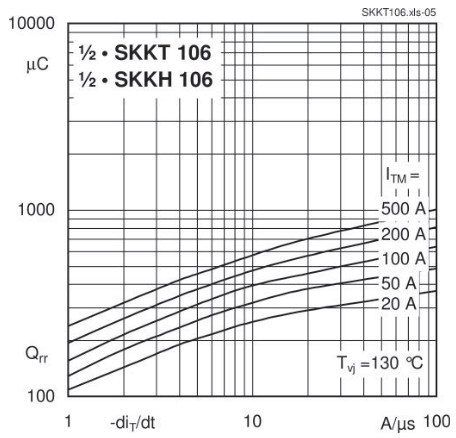



Fig. 5 Recovered charge vs. current decrease

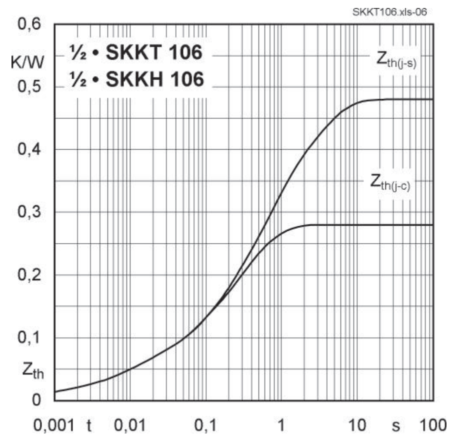



Fig. 6 Transient thermal impedance vs. time

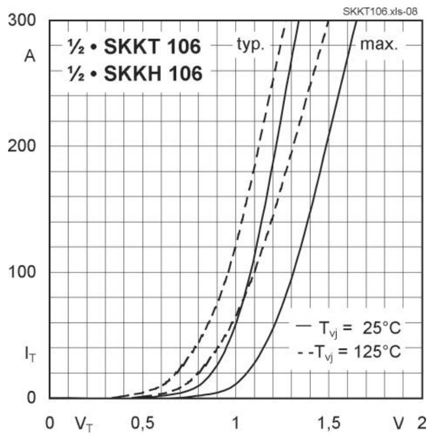



Fig. 7 On-state characteristics

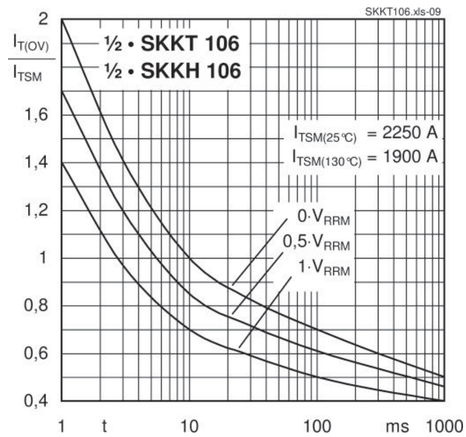
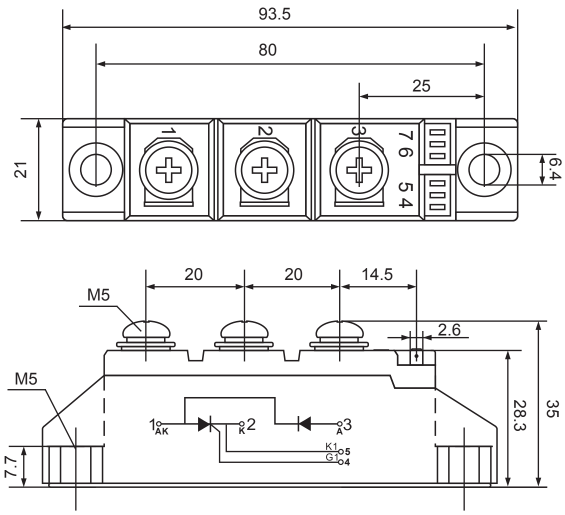



Fig. 8 Surge overload current vs. time



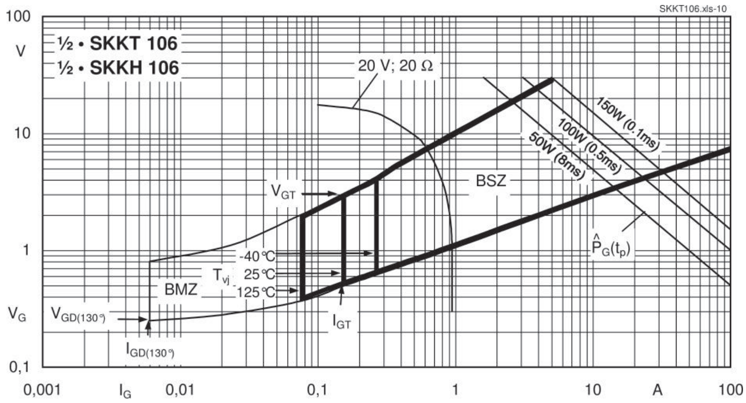




Fig. 9 Gate trigger characteristics

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