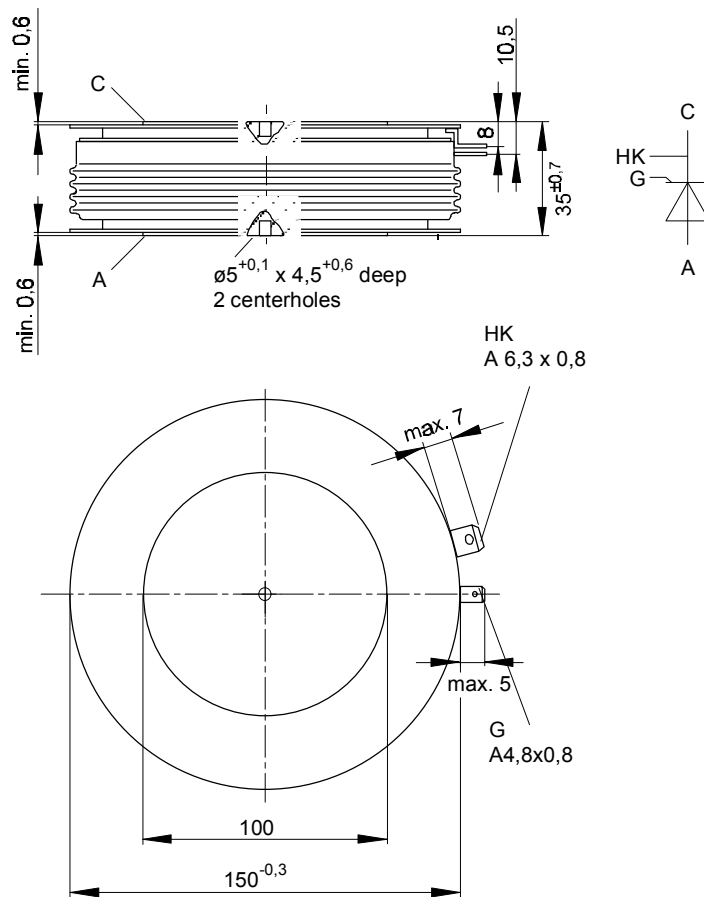




European Power-Semiconductor and Electronics Company

Marketing Information

T 2851 N



Netz Thyristor
Phase Control Thyristor

Elektrische Eigenschaften

Höchstzulässige Werte

Periodische Vorwärts- und Rückwärts-Spitzensperrspannung
Durchlaßstrom-Grenzeffektivwert
Dauergrenzstrom

Stoßstrom-Grenzwert

Grenzlastintegral

Kritische Stromsteilheit

Kritische Spannungssteilheit

Charakteristische Werte

Durchlaßspannung

Schleusenspannung

Ersatzwiderstand

Durchlaßrechenkennlinien

$$V_T = A + B \cdot I_T + C \cdot \ln(I_T + 1) + D \cdot \sqrt{I_T}$$

Zündstrom

Zündspannung

Nicht zündender Steuerstrom

Nicht zündende Steuerspannung

Haltestrom

Einraststrom

Vorwärts- und Rückwärts-Sperrstrom

Zündverzög

Freiwerdezeit

Sperrverzögerungsladung

Rückstromspitze

Electrical properties

Maximum rated values

repetitive peak forward off-state and reverse voltages

RMS on-state current

average on-state current

surge current

I² t-value

critical rate of rise of on-state current

critical rate of rise of off-state voltage

Characteristic values

on-state voltage

threshold voltage

slope resistance

on-state characteristics for calculation

gate trigger current

gate trigger voltage

gate non-trigger current

gate non-trigger voltage

holding current

latching current

forward off-state and reverse currents

gate controlled delay time

circuit commutated turn-off time

recovered charge

peak reverse recovery current

Thermal properties

thermal resistance, junction to case for two-sided cooling

thermal resistance, case to heatsink

max. junction temperature

operating temperature

storage temperature

Mechanical properties

Si-pellet with pressure contact

clamping force

weight

creepage distance

humidity classification

vibration resistance

t_{vj} = -40°C...t_{vj max}
f = 50 Hz

t_c = 85°C, f = 50 Hz
t_c = 60°C, f = 50 Hz

t_{vj} = 25°C, t_p = 10 ms, V_R = 0 V
t_{vj} = t_{vj max}, t_p = 10 ms, V_R = 0 V

t_{vj} = 25°C, t_p = 10 ms
t_{vj} = t_{vj max}, t_p = 10 ms

DIN IEC 747-6
f = 50 Hz, i_{GM} = 3 A, di_G/dt = 6 A/μs

t_{vj} = t_{vj max}, v_D = 0,67 V_{DRM}
5. Kennbuchstabe / 5th letter H

t_{vj} = t_{vj max}, i_T = 4 kA

t_{vj} = t_{vj max}

t_{vj} = t_{vj max}

t_{vj} = t_{vj max}

t_{vj} = 25 °C, v_D = 6 V

t_{vj} = 25 °C, v_D = 6 V

t_{vj} = t_{vj max}, v_D = 6 V

t_{vj} = t_{vj max}, v_D = 0,5 V_{DRM}

t_{vj} = t_{vj max}, v_D = 0,5 V_{DRM}

t_{vj} = 25 °C, v_D = 12 V, R_A = 4,7 Ω

t_{vj} = 25 °C, v_D = 12 V, R_{GK} ≥ 10 Ω

i_{GM} = 3 A, di_G/dt = 6 A/μs, t_g = 20 μs

t_{vj} = t_{vj max}, v_D = V_{DRM}, v_R = V_{RRM}

DIN IEC 747-6, v_D = 0,5 V_{DRM}

t_{vj} = 25°C, i_{GM} = 3 A, di_G/dt = 6 A/μs

t_{vj} = t_{vj max}, i_{TM} = I_{TAVM}

v_{RM} = 100 V, v_{DM} = 0,67 V_{DRM}

dv_D/dt = 20 V/μs, -di_T/dt = 10 A/μs

4. Kennbuchstabe / 4th letter O

t_{vj} = t_{vj max}

I_{TM} = 2 kA, di/dt = 10 A/μs

V_R = 0,5 V_{RRM}, V_{RM} = 0,8 V_{RRM}

t_{vj} = t_{vj max}

I_{TM} = 2 kA, di/dt = 10 A/μs

V_R = 0,5 V_{RRM}, V_{RM} = 0,8 V_{RRM}

V_{DRM}, V_{RRM}

I_{TRMSM}

I_{TAVM}

I_{TSM}

I² t

(di_T/dt)_{cr}

(dv/dt)_{cr}

v_T

V_{T(TO)}

r_T

A

B

C

D

I_{GT}

V_{GT}

I_{GD}

V_{GD}

I_H

I_L

i_D, i_R

t_{gd}

t_q

Q_f

I_{RM}

R_{thJC}

R_{thCK}

t_{vj max}

t_{c op}

t_{stg}

F

G

4800 5000 V

5200 V

6200 A

2850 A

3900 A

70 kA

65 kA

24,5 · 10⁶ A²s

21,0 · 10⁶ A²s

150 A/μs

2000 V/μs

typ. max.

1,55 1,65 V

0,9 0,97 V

0,162 0,17 mΩ

-0,259 -1,923

0,000108 0,000285

0,172 0,543

-0,000866 -0,0328

max. 300 mA

max. 2,5 V

20 mA

10 mA

0,4 V

350 mA

max. 2 A

430 mA

2 μs

typ. 500 μs

typ. max.

15 20 mAs

400 A

0,0059 °C/W

0,0055 °C/W

0,0015 °C/W

120 °C

-40...+120 °C

-40...+150 °C

63...91 kN

typ. 3000 g

33 mm

C

50 m/s²

Mit dieser technischen Information werden Halbleiterbauelemente spezifiziert, jedoch keine Eigenschaften zugesichert. Sie gilt in Verbindung mit den zugehörigen Technischen Erläuterungen. This technical information specifies semiconductor devices but promises no characteristics. It is valid in combination with the belonging technical notes.

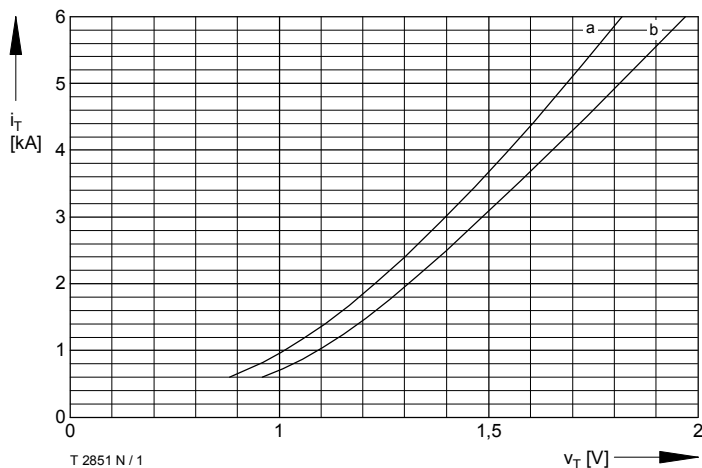


Bild / Fig. 1
 Durchlaßkennlinien / On-state characteristics $i_T = f(v_T)$
 a - Typische Kennlinie / Typical characteristic
 b - Grenzkennlinie / Limiting characteristic

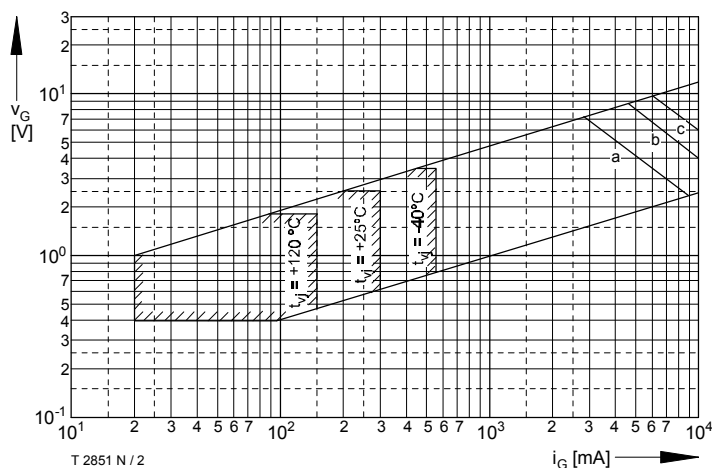


Bild / Fig. 2
 Steuercharakteristik mit Zündbereichen / Gate characteristic with triggering areas $v_G = f(i_G)$, $V_D = 6\text{ V}$
 Parameter:

	a	b	c
Steuerimpulsdauer / Puls duration t_{vj} [ms]	10	1	0,5
Höchstzulässige Spitzensteuerleistung / Maximum allowable peak gate power [W]	20	40	60

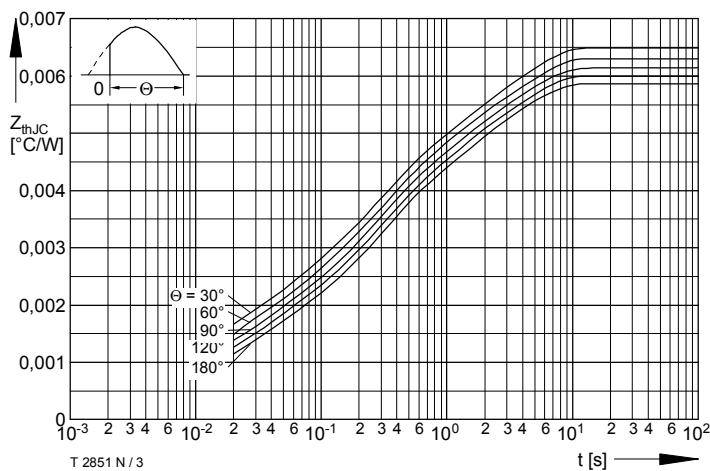


Bild / Fig. 3
 Transienter innerer Wärmewiderstand / Transient thermal impedance $Z_{thJC} = f(t)$
 Beidseitige Kühlung / Two-sided cooling
 Parameter: Stromflußwinkel / Current conduction angle θ

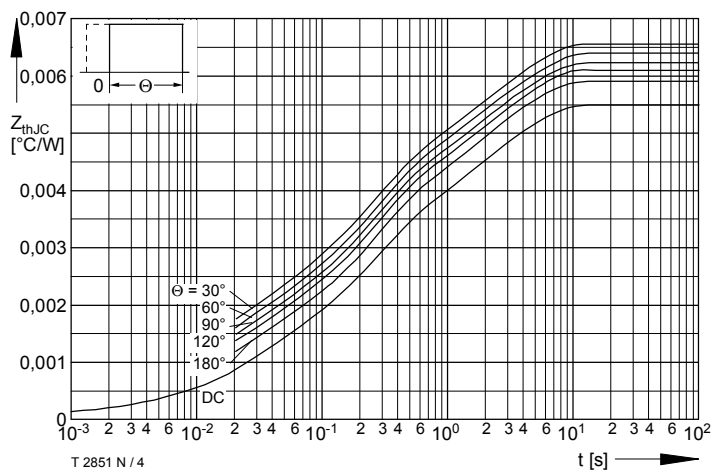


Bild / Fig. 4
 Transienter innerer Wärmewiderstand / Transient thermal impedance $Z_{thJC} = f(t)$
 Beidseitige Kühlung / Two-sided cooling
 Parameter: Stromflußwinkel / Current conduction angle θ

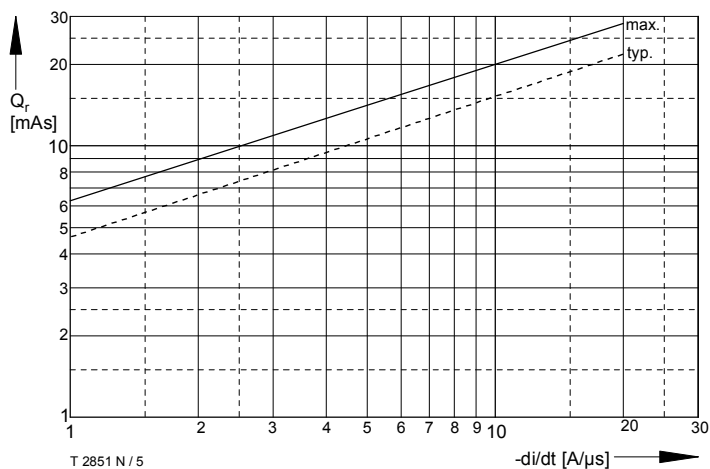


Bild / Fig. 5
 Sperrverzögerungsladung / Recovered charge $Q_r = f(di/dt)$
 $t_{vj} = t_{vj\ max}$, $V_R = 0,5 V_{RRM}$, $I_{TM} = 2000\text{ A}$, $V_{RM} = 0,8 V_{RRM}$