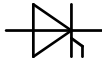

Netz-Thyristor
Phase Control Thyristor
T1930N
Vorläufige Daten
preliminary data
Elektrische Eigenschaften / Electrical properties
 Höchstzulässige Werte / Maximum rated values

Periodische Vorwärts- und Rückwärts-Spitzensperrspannung repetitive peak forward off-state and reverse voltages	$T_{vj} = -40^{\circ}\text{C} \dots T_{vj \max}$	$V_{\text{DRM}}, V_{\text{RRM}}$	3200 3400	3600 3800	V V
Vorwärts-Stosspitzensperrspannung non-repetitive peak forward off-state voltage	$T_{vj} = -40^{\circ}\text{C} \dots T_{vj \max}$	V_{DSM}	3200 3400	3600 3800	V V
Rückwärts-Stosspitzensperrspannung non-repetitive peak reverse voltage	$T_{vj} = +25^{\circ}\text{C} \dots T_{vj \max}$	V_{RSM}	3300 3500	3700 3900	V V
Durchlassstrom-Grenzeffektivwert maximum RMS on-state current		I_{TRMSM}		4200	A
Dauergrenzstrom average on-state current	$T_{\text{C}} = 85^{\circ}\text{C}$	I_{TAVM}		2180	A
Dauergrenzstrom average on-state current	$T_{\text{C}} = 55^{\circ}\text{C}, \theta = 180^{\circ}\sin, t_{\text{p}} = 10 \text{ ms}$	I_{TAVM}		3140	A
Durchlaßstrom-Effektivwert RMS on-state current		I_{TRMS}		4920	A
Stossstrom-Grenzwert surge current	$T_{vj} = 25^{\circ}\text{C}, t_{\text{p}} = 10 \text{ ms}$ $T_{vj} = T_{vj \max}, t_{\text{p}} = 10 \text{ ms}$	I_{TSM}		40000 37000	A A
Grenzlastintegral I^2t -value	$T_{vj} = 25^{\circ}\text{C}, t_{\text{p}} = 10 \text{ ms}$ $T_{vj} = T_{vj \max}, t_{\text{p}} = 10 \text{ ms}$	I^2t		8000 6850	$10^3 \text{ A}^2\text{s}$ $10^3 \text{ A}^2\text{s}$
Kritische Stromsteilheit critical rate of rise of on-state current	DIN IEC 60747-6 $f = 50 \text{ Hz}, i_{\text{GM}} = 1,6\text{A},$ $di_{\text{G}}/dt = 1,6 \text{ A}/\mu\text{s}$	$(di_{\text{T}}/dt)_{\text{cr}}$		150	$\text{A}/\mu\text{s}$
Kritische Spannungssteilheit critical rate of rise of off-state voltage	$T_{vj} = T_{vj \max}, V_{\text{D}} = 0,67 V_{\text{DRM}}$ 5.Kennbuchstabe / 5 th letter F	$(dv_{\text{D}}/dt)_{\text{cr}}$		1000	$\text{V}/\mu\text{s}$

Charakteristische Werte / Characteristic values

Durchlassspannung on-state voltage	$T_{vj} = T_{vj \max}, i_{\text{T}} = 8 \text{ kA}$ $T_{vj} = T_{vj \max}, i_{\text{T}} = 2 \text{ kA}$	v_{T}	max. max.	2,90 1,60	V V
Schleusenspannung threshold voltage	$T_{vj} = T_{vj \max}$	$V_{(\text{TO})}$		1,08	V
Ersatzwiderstand slope resistance	$T_{vj} = T_{vj \max}$	r_{T}		0,20	$\text{m}\Omega$
Durchlasskennlinie on-state characteristic $1000 \text{ A} \leq i_{\text{T}} \leq 11000 \text{ A}$ $v_{\text{T}} = A + B \cdot i_{\text{T}} + C \cdot \ln(i_{\text{T}} + 1) + D \cdot \sqrt{i_{\text{T}}}$	$T_{vj} = T_{vj \max}$	A= B= C= D=		2,085E+00 7,262E-05 -2,440E-01 2,706E-02	
Zündstrom gate trigger current	$T_{vj} = 25^{\circ}\text{C}, V_{\text{D}} = 12\text{V}$	I_{GT}	max.	300	mA
Zündspannung gate trigger voltage	$T_{vj} = 25^{\circ}\text{C}, V_{\text{D}} = 12\text{V}$	V_{GT}	max.	3	V
Nicht zündender Steuerstrom gate non-trigger current	$T_{vj} = T_{vj \max}, V_{\text{D}} = 12\text{V}$ $T_{vj} = T_{vj \max}, V_{\text{D}} = 0,5 V_{\text{DRM}}$	I_{GD}	max. max.	10 5	mA mA
Nicht zündende Steuerspannung gate non-trigger voltage	$T_{vj} = T_{vj \max}, V_{\text{D}} = 0,5 V_{\text{DRM}}$	V_{GD}	max.	0,25	V
Haltestrom holding current	$T_{vj} = 25^{\circ}\text{C}, V_{\text{D}} = 12\text{V}$	I_{H}	max.	300	mA
Einraststrom latching current	$T_{vj} = 25^{\circ}\text{C}, V_{\text{D}} = 12\text{V}, R_{\text{GK}} \geq 10 \Omega$ $i_{\text{GM}} = 1,6 \text{ A}, di_{\text{G}}/dt = 1,6 \text{ A}/\mu\text{s},$ $t_{\text{g}} = 20 \mu\text{s}$	I_{L}	max.	1500	mA
Vorwärts- und Rückwärts-Sperrstrom forward off-state and reverse current	$T_{vj} = T_{vj \max}$ $V_{\text{D}} = V_{\text{DRM}}, V_{\text{R}} = V_{\text{RRM}}$	$i_{\text{D}}, i_{\text{R}}$	max.	300	mA
Zündverzug gate controlled delay time	DIN IEC 60747-6 $T_{vj} = 25^{\circ}\text{C}, i_{\text{GM}} = 1,6 \text{ A},$ $di_{\text{G}}/dt = 1,6 \text{ A}/\mu\text{s}$	t_{gd}	max.	3	μs

prepared by:	H.Sandmann	date of publication:	2008-03-06
approved by:	J.Przybilla	revision:	1.3


Netz-Thyristor
Phase Control Thyristor
T1930N
Vorläufige Daten
preliminary data
Elektrische Eigenschaften / Electrical properties
 Charakteristische Werte / Characteristic values

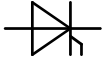
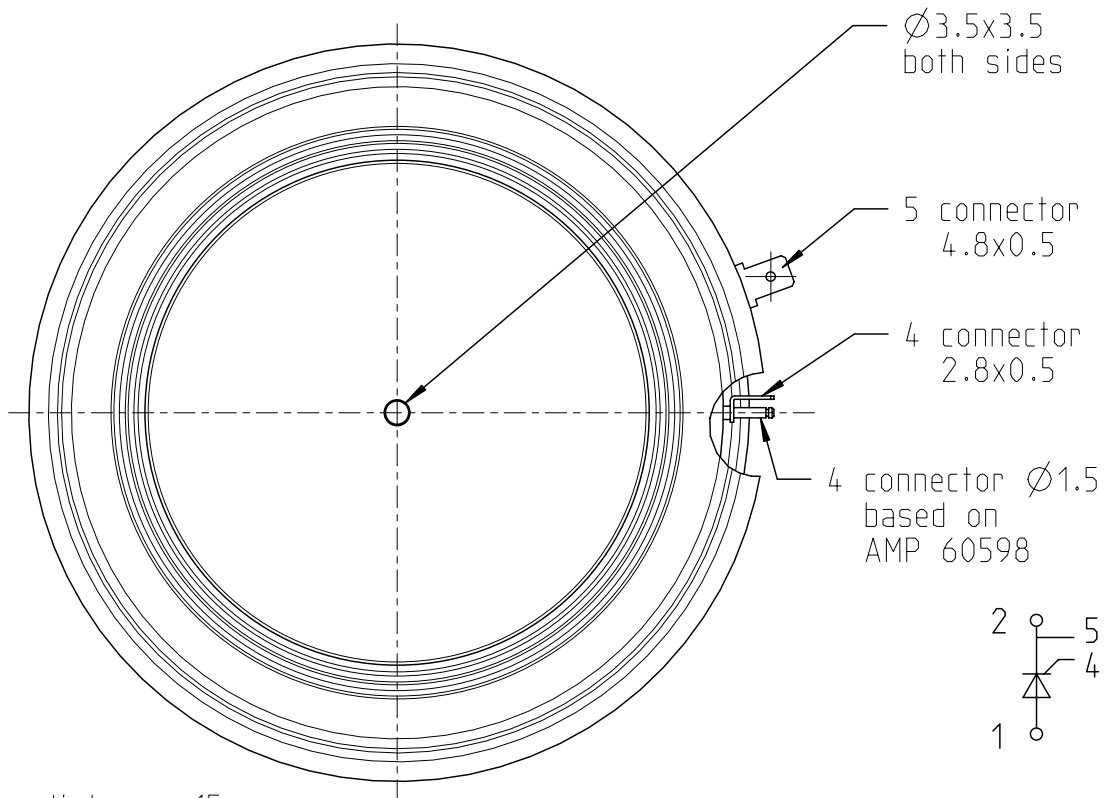
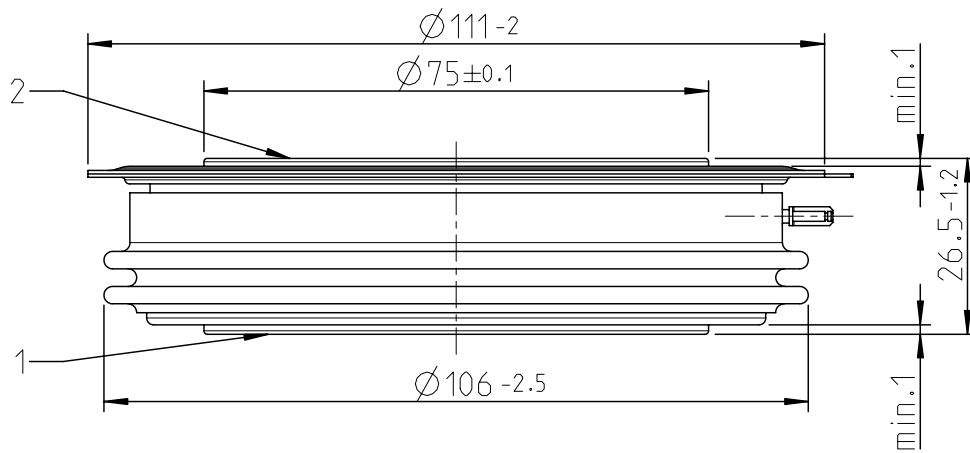
Freiwerdezeit circuit commutated turn-off time	$T_{vj} = T_{vj\ max}, I_{TM} = I_{TAVM}$ $V_{RM} = 100\ V, V_{DM} = 0,67\ V_{DRM}$ $dv_D/dt = 20\ V/\mu s, -di_T/dt = 10\ A/\mu s$ 4.Kennbuchstabe / 4 th letter O	t_q	typ. 450	μs
---	---	-------	----------	---------

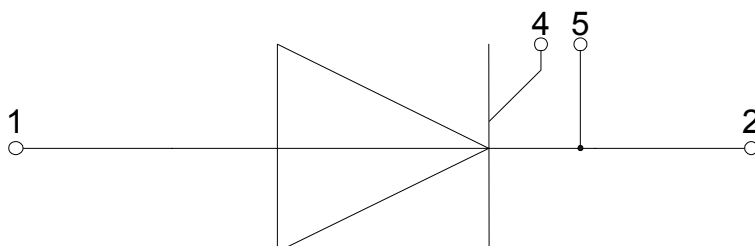
Thermische Eigenschaften / Thermal properties

Innerer Wärmewiderstand thermal resistance, junction to case	<u>Kühlfläche / cooling surface</u> beidseitig / two-sided, $\theta = 180^\circ\ sin$ beidseitig / two-sided, DC Anode / anode, $\theta = 180^\circ\ sin$ Anode / anode, DC Kathode / cathode, $\theta = 180^\circ\ sin$ Kathode / cathode, DC	R_{thJC}	max. 0,0085 max. 0,0078 max. 0,0152 max. 0,0146 max. 0,0183 max. 0,0169	$^\circ C/W$ $^\circ C/W$ $^\circ C/W$ $^\circ C/W$ $^\circ C/W$ $^\circ C/W$
Übergangs-Wärmewiderstand thermal resistance, case to heatsink	<u>Kühlfläche / cooling surface</u> beidseitig / two-sides einseitig / single-sides	R_{thCH}	max. 0,0025 max. 0,0050	$^\circ C/W$ $^\circ C/W$
Höchstzulässige Sperrschichttemperatur maximum junction temperature		$T_{vj\ max}$	125	$^\circ C$
Betriebstemperatur operating temperature		$T_{c\ op}$	-40...+125	$^\circ C$
Lagertemperatur storage temperature		T_{stg}	-40...+150	$^\circ C$

Mechanische Eigenschaften / Mechanical properties

Gehäuse, siehe Anlage case, see annex			Seite 3 page 3	
Si-Element mit Druckkontakt Si-pellet with pressure contact				
Anpresskraft clamping force		F	42...95	kN
Steueranschlüsse control terminals	Gate (flat) Gate (round, based on AMP 60598) Kathode / cathode		A 2,8x0,5 \varnothing 1,5 A 4,8x0,5	mm mm mm
Gewicht weight		G	typ. 1200	g
Kriechstrecke creepage distance			25	mm
Schwingfestigkeit vibration resistance	f = 50 Hz		50	m/s ²

N**Datenblatt / Data sheet**
Netz-Thyristor
Phase Control Thyristor
T1930N
Vorläufige Daten
preliminary data

 strike distance: 15mm
 creepage distance: 25mm

 overall height based
 on contact pressure
**1: Anode / Anode****2: Kathode / Cathode****4: Gate****5: Hilfskathode/
Auxiliary Cathode**