



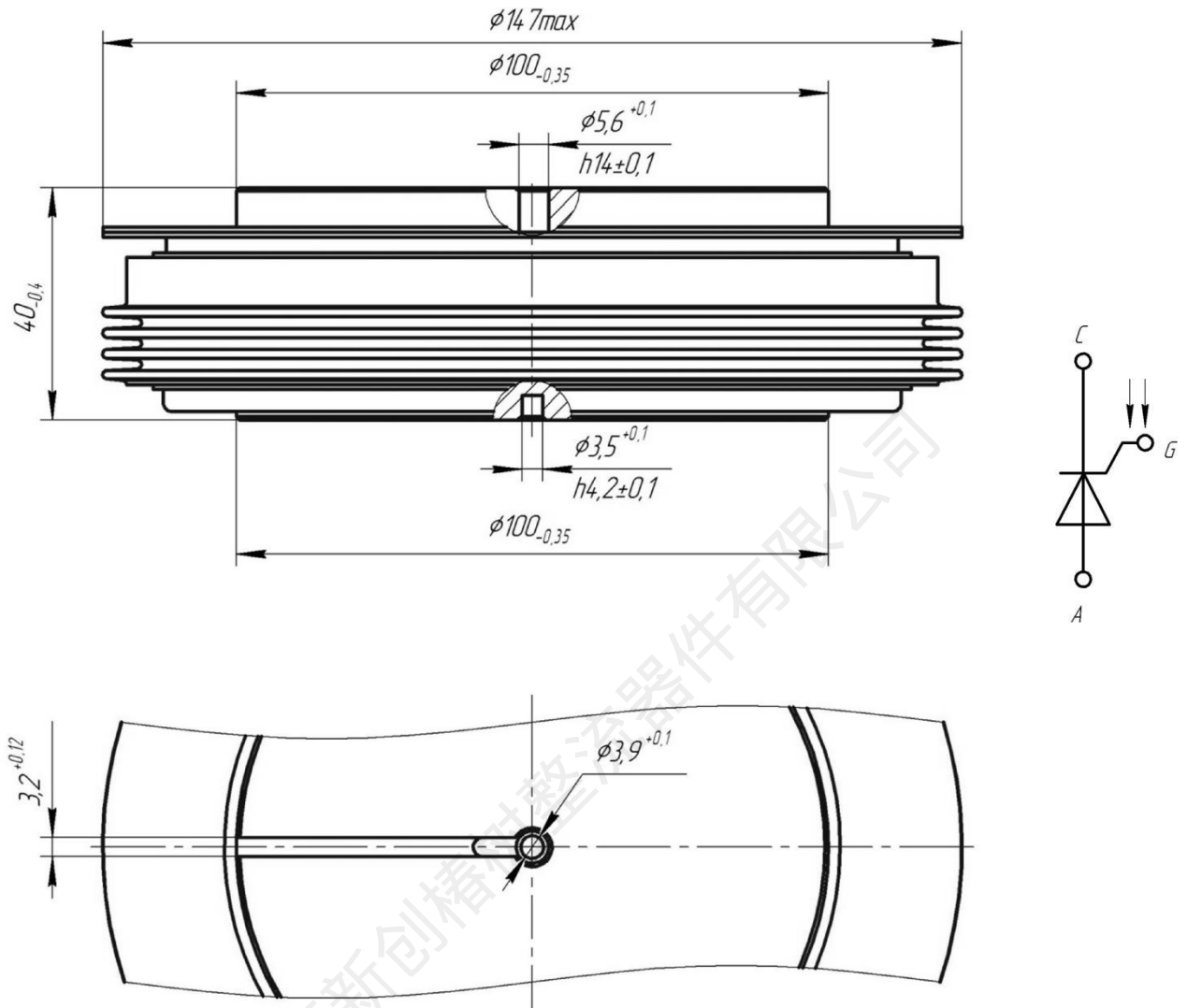
高端电力电子器件和装置制造商

## TLI193-2500

脉冲光控晶闸管

<ul style="list-style-type: none"> <li>◆ <math>V_{DRM} = \underline{4200-4600 V}</math></li> <li>◆ <math>V_{RRM} = \underline{4200-4600 V}</math></li> <li>◆ <math>I_{TRM} = \underline{100 kA}</math> (<math>t_p = 700 \mu s</math>)</li> <li>◆ <math>I_{T(AV)} = \underline{3064 A}</math> (<math>T_C = 70 \text{ }^\circ\text{C}</math>)</li> <li>◆ <math>I_{TSM} = \underline{55 kA}</math> (<math>T_j = 120 \text{ }^\circ\text{C}</math>)</li> <li>◆ <math>P_{LM} = \underline{25 mW}</math></li> </ul>			
<ul style="list-style-type: none"> <li>◆ 光触发</li> <li>◆ 低通态和开关损耗</li> </ul>			
最大额定数值			
参数及测试条件	符号	数值	单位
Repetitive peak off-state voltage, $T_j = -60 \dots +120 \text{ }^\circ\text{C}$	$V_{DRM}$	4200-4600	V
Repetitive peak reverse voltage, $T_j = -60 \dots +120 \text{ }^\circ\text{C}$	$V_{RRM}$	4200-4600	
Direct off-state voltage, $T_j = -60 \dots +120 \text{ }^\circ\text{C}$	$V_D$	3000	
Direct reverse voltage, $T_j = -60 \dots +120 \text{ }^\circ\text{C}$	$V_R$	3000	
Repetitive peak off-state current/ Repetitive peak reverse current, $T_j = 120 \text{ }^\circ\text{C}$ , $V_D / V_R = V_{DRM} / V_{RRM}$	$I_{DRM} / I_{RRM}$	300	mA
Average on-state current, $f = 50 \text{ Hz}$ , double side cooling $T_C = 85 \text{ }^\circ\text{C}$ $T_C = 70 \text{ }^\circ\text{C}$	$I_{T(AV)}$	2420 3064	A
Repetitive peak on-state current, $T_j = 25 \text{ }^\circ\text{C}$ , $V_D = V_{DRM}$ , $t_p = 700 \mu s$ (single pulse) $t_p = 10 \text{ ms}$ (single pulse)	$I_{TRM}$	100 30	kA
Surge non-repetitive on-state current, $T_j = 120 \text{ }^\circ\text{C}$ , $V_R = 0$ , $t_p = 10 \text{ ms}$	$I_{TSM}$	55	kA
Safety factor	$I^2t$	15216	kA <sup>2</sup> s
Critical rate of rise of on-state current, $T_j = 120 \text{ }^\circ\text{C}$ , $V_D = 0,67V_{DRM}$ , $I_T = 5000 \text{ A}$ , $P_{LM} = 25 \text{ mW}$ , $t_L = 10 \mu s$ , $f = 1 \text{ Hz}$ $f = 50 \text{ Hz}$	$(di_T/dt)_{crit}$	5000 1000	A/ $\mu s$
Critical rate of rise of off-state voltage, $T_j = 120 \text{ }^\circ\text{C}$ , $V_D = 0,67V_{DRM}$	$(dv_D/dt)_{crit}$	1600-2000	V/ $\mu s$
Minimum gate trigger light power, $T_j = 25 \text{ }^\circ\text{C}$ , $V_D = 12 \text{ V}$	$P_{LM}$	25	mW
Operation junction temperature range	$T_j$	-40 ... +120	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-40 ... +50	$^\circ\text{C}$

电学特性					
参数及测试条件	符号	数值			单位
		min	typ.	max	
Peak on-state voltage, $T_j = 25\text{ }^\circ\text{C}$ , $I_T = 7850\text{ A}$	$V_{TM}$	-	-	2,40	V
On-state threshold voltage, $T_j = 120\text{ }^\circ\text{C}$ , $I_T = 4000 - 12000\text{ A}$	$V_{T(TO)}$	-	-	1,15	
On-state slope resistance, $T_j = 120\text{ }^\circ\text{C}$ , $I_T = 4000 - 12000\text{ A}$	$r_T$	-	-	0,18	mΩ
Delay time, $T_j = 25\text{ }^\circ\text{C}$ , $V_D = 1000\text{ V}$ , $I_T = 2500\text{ A}$ , $P_{LM} = 25\text{ mW}$ , $t_L = 10\text{ }\mu\text{s}$ , $t_{rise} = 0,5\text{ }\mu\text{s}$	$t_d$	-	-	5,0	$\mu\text{s}$
Turn off-time, $T_j = 120\text{ }^\circ\text{C}$ , $I_T = 2500\text{ A}$ , $di_T/dt = -5\text{ A}/\mu\text{s}$ , $V_R \geq 100\text{ V}$ , $V_D = 0,67V_{DRM}$ , $dV_D/dt = 50\text{ V}/\mu\text{s}$	$t_q$	-	630	-	
Reverse recovery charge, $T_j = 120\text{ }^\circ\text{C}$ , $I_T = 2500\text{ A}$ , $di_T/dt = -5\text{ A}/\mu\text{s}$ , $V_R \geq 100\text{ V}$	$Q_{RR}$	-	-	2200	$\mu\text{As}$
Holding current, $T_j = 25\text{ }^\circ\text{C}$ , $V_D = 12\text{ V}$	$I_H$	-	-	300	mA
Latching current, $T_j = 25\text{ }^\circ\text{C}$ , $V_D = 12\text{ V}$ , $P_{LM} = 25\text{ mW}$ , $t_L = 10\text{ }\mu\text{s}$ , $t_{rise} = 0,5\text{ }\mu\text{s}$	$I_L$	-	-	1000	
热学特性					
Thermal junction to case resistance, sin 180°: double side cooled DC: double side cooled	$R_{th(j-c)}$ $R_{th(j-c)}$	-	-	0,0065 0,0062	$^\circ\text{C}/\text{W}$
Thermal resistance case to heatsink, double side cooled single side cooled	$R_{th(c-h)}$	-	-	0,0015 0,0030	
力学特性					
Weight	w	-	3,0	-	kg
Clamping force	F	70	-	90	kN
Maximum acceleration (at nominal mounting force)	a	-	-	50	m/s <sup>2</sup>
Minimal cathode-anode distance on insulator surface	$D_s$	-	62	-	mm
Air strike distance	$D_a$	-	27	-	mm



C – Cathode, A – Anode, G – Gate

Fig. 1. Device Outline Drawing (dimensions in mm)

Recommended optical interface cable – OA65.