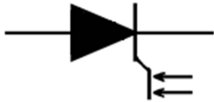




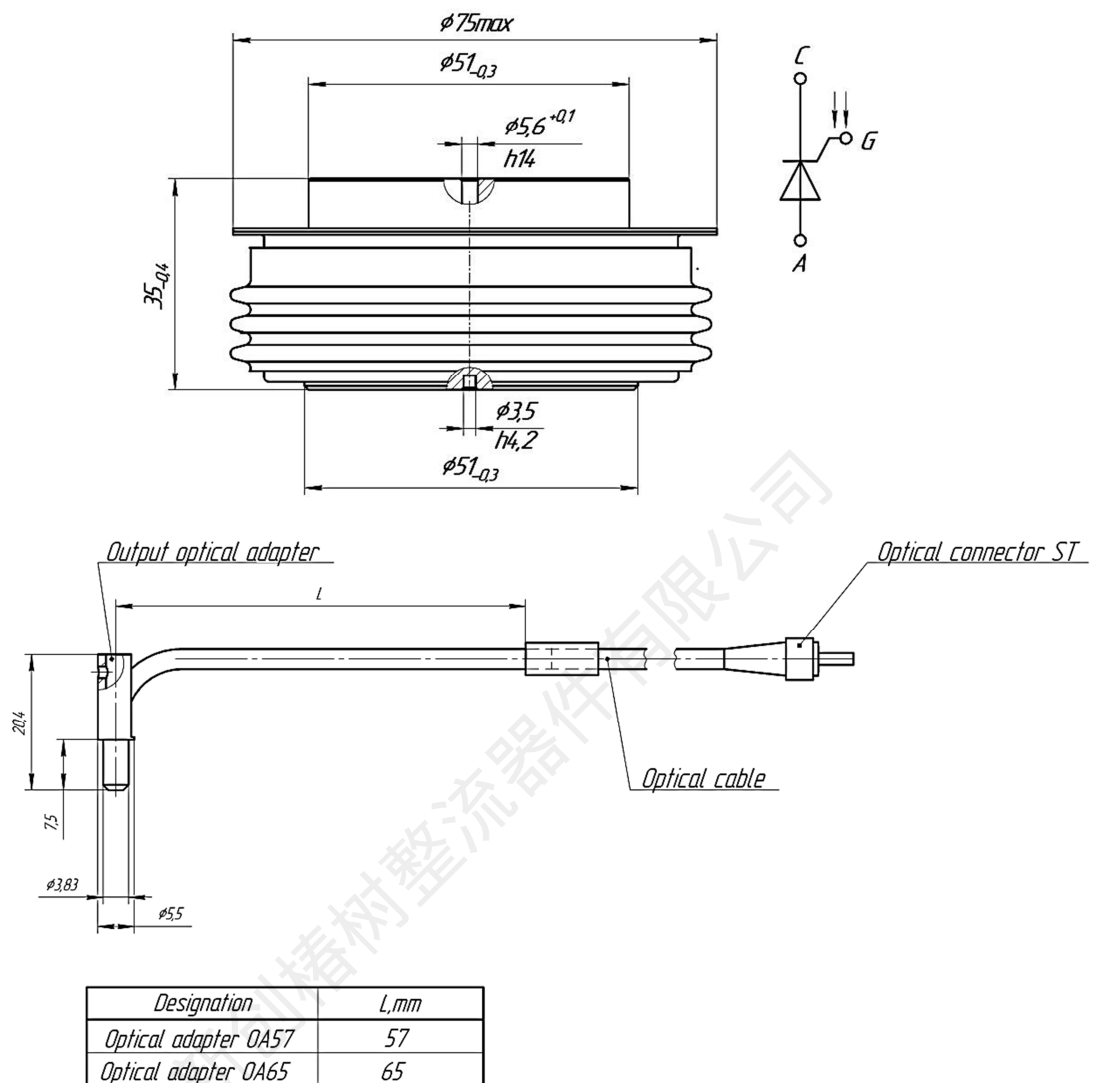
High-end Power Semiconductor Manufacturer

TL353-630-7200

Light Triggered Thyristor

◆ $V_{\text{DRM}} = \underline{7200\text{ V}}$ ◆ $V_{\text{RRM}} = \underline{7200\text{ V}}$ ◆ $I_{\text{T(AV)}} = \underline{670\text{ A}}$ ($T_{\text{C}} = 70^{\circ}\text{C}$) ◆ $I_{\text{T(AV)}} = \underline{540\text{ A}}$ ($T_{\text{C}} = 85^{\circ}\text{C}$) ◆ $I_{\text{TSM}} = \underline{10.5\text{ kA}}$ ($T_{\text{j}} = 120^{\circ}\text{C}$) ◆ $P_{\text{LM}} = \underline{40\text{ mW}}$			
◆ Light triggering ◆ Low on-state and switching losses			
MAXIMUM RATED VALUES			
Parameter and conditions	Symbol	Values	Units
Repetitive peak off-state voltage, $T_{\text{j}} = -40 \dots + 120^{\circ}\text{C}$	V_{DRM}	7200	V
Repetitive peak reverse voltage, $T_{\text{j}} = -40 \dots + 120^{\circ}\text{C}$	V_{RRM}	7200	
Non-repetitive peak off-state voltage, $T_{\text{j}} = -40 \dots + 120^{\circ}\text{C}$	V_{DSM}	7300	
Non-repetitive peak reverse voltage, $T_{\text{j}} = -40 \dots + 120^{\circ}\text{C}$	V_{RSM}	7300	
Repetitive peak off-state current/ Repetitive peak reverse current, $T_{\text{j}} = 120^{\circ}\text{C}$, $V_{\text{D}} / V_{\text{R}} = V_{\text{DRM}} / V_{\text{RRM}}$	$I_{\text{DRM}} / I_{\text{RRM}}$	150	mA
Average on-state current, $f = 50\text{ Hz}$, double side cooling $T_{\text{C}} = 85^{\circ}\text{C}$ $T_{\text{C}} = 70^{\circ}\text{C}$	$I_{\text{T(AV)}}$	540 670	A
RMS on-state current, $T_{\text{C}} = 70^{\circ}\text{C}$, $f = 50\text{ Hz}$	I_{TRMS}	1060	
Surge non-repetitive on-state current, $T_{\text{j}} = 120^{\circ}\text{C}$, $V_{\text{R}} = 0$, $t_{\text{p}} = 10\text{ ms}$	I_{TSM}	10.5	kA
Safety factor	I^2t	5.5×10^5	A^2s
Critical rate of rise of on-state current, $T_{\text{j}} = 120^{\circ}\text{C}$, $V_{\text{D}} = 0.67V_{\text{DRM}}$, $I_{\text{T}} = 1260\text{ A}$, $P_{\text{LM}} = 40\text{ mW}$, $t_{\text{L}} = 10\text{ }\mu\text{s}$, $f = 50\text{ Hz}$	$(di_{\text{T}}/dt)_{\text{crit}}$	300	$\text{A}/\mu\text{s}$
Critical rate of rise of off-state voltage, $T_{\text{j}} = 120^{\circ}\text{C}$, $V_{\text{D}} = 0.67V_{\text{DRM}}$	$(dv_{\text{D}}/dt)_{\text{crit}}$	1000 - 2000	$\text{V}/\mu\text{s}$
Minimum gate trigger light power, $T_{\text{j}} = 25^{\circ}\text{C}$, $V_{\text{D}} = 12\text{ V}$	P_{LM}	40	mW
Operation junction temperature range	T_{j}	-40 ... +120	$^{\circ}\text{C}$
Storage temperature range	T_{sta}	-40 ... +50	

ELECTRICAL CHARACTERISTICS					
Parameter and conditions	Symbol	Values			Units
		min	typ.	max	
Peak on-state voltage, T _j = 25°C, I _T = 1980 A	V _{TM}	-	-	3.00	V
On-state threshold voltage, T _j = 120°C, I _T = 1000 - 3000 A	V _{T(TO)}	-	-	1.26	
On-state slope resistance, T _j = 120°C, I _T = 1000 - 3000 A	r _T	-	-	1.47	mΩ
Delay time, T _j = 25°C, V _D = 1000 V, I _T = 630 A, P _{LM} = 40 mW, t _L = 10 μs, t _r = 0.5 μs	t _d	-	-	5.0	μs
Turn off-time, T _j = 120°C, I _T = 630 A, di _T /dt = -5 A/μs, V _R ≥ 100 V, V _D = 0.67V _{DRM} , dv _D /dt = 50 V/μs	t _q	-	900	-	
Reverse recovery charge, T _j = 120 °C, I _T = 630 A, di _T /dt = -5 A/μs, V _R ≥ 100 V	Q _{RR}	-	-	3000	μAs
Holding current, T _j = 25°C, V _D = 12 V	I _H	-	-	100	mA
Latching current, T _j = 25°C, V _D = 12 V, P _{LM} = 40 mW, t _L = 10 μs, t _r = 0.5 μs	I _L	-	-	1000	
THERMAL PARAMETERS					
Thermal junction to case resistance, sin 180°: double side cooled DC: double side cooled	R _{th(j-c)} R _{th(j-c)}	-	-	0.0200 0.0190	°C/W
Thermal resistance case to heatsink, double side cooled single side cooled	R _{th(c-h)}	-	-	0.005 0.010	
MECHANICAL PARAMETERS					
Weight	w	-	0.65	-	kg
Clamping force	F	20	-	26	kN
Maximum acceleration (at nominal mounting force)	a	-	-	50	m/s ²
Minimal cathode-anode distance on insulator surface	D _s	-	28.8	-	mm
Air strike distance	D _a	-	22.5	-	



C – Cathode, A – Anode, G –Gate

Device Outline Drawing (dimensions in mm)

Recommended optical interface cable – OA57.