	TET ESTEL AS ESTONIA	**March 2016**

Series
T653-800

Phase Control Press-Pack Thyristor Type T653-800

Distributed amplifying gate
Designed for traction and industrial applications

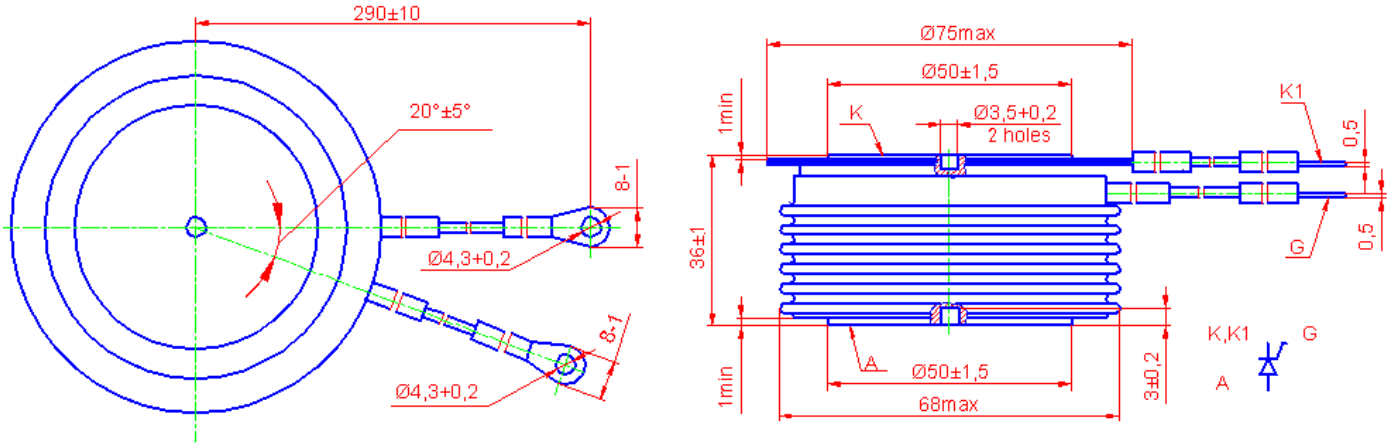
Maximum mean on-state current			**ITAV**	**800 A**	
Maximum repetitive peak off-state and reverse voltage			**UDRM** **URRM**	**4000 ÷4800 V**	
Turn-off time			**tq**	**400; 500 µs**	
UDRM , URRM , V	4000	4200	4400	4600	4800
Voltage code	40	42	44	46	48
Tvj, °C	- 60 ÷ 125				

MAXIMUM ALLOWABLE RATINGS					
Symbols and parameters		Units	T653-800	Conditions	
ITAV	Mean on-state current	A	800 1140	Tc=84 °C, Tc=55 °C, 180° half-sine wave, 50 Hz	
ITRMS	RMS on-state current	A	1255	Tc=84 °C	
ITSM	Surge on-state current	kA	15 16,5	Tvj=125°C Tvj=25°C	tp=10 ms UR=0
I^2t	Limiting load integral	kA^2s	1125 1360	Tvj=125°C Tvj=25°C	
UDRM,URRM	Repetitive peak off-state and reverse voltage	V	4000÷4800	Tj мin≤Tvj≤Tjм 180° half-sine wave, 50 Hz Gate open	
UDSM,URSM	Non-repetitive peak off-state and reverse voltage	V	4100÷4900	Tj мin≤Tvj≤Tjм 180° half-sine wave tp=10 ms, Single pulse Gate open	
(diT/dt) crit	Critical rate of rise of on-state current : non - repetitive repetitive	A/µs	 1250 630	Tvj=125°C ; UD=0,67 UDRM, Gate pulse : 10V,5 Ω, 1µs rise time, 10 µs	
URGM	Peak reverse gate voltage	V	5	Tj мin≤Tvj≤Tjм	
Tstg	Storage temperature	°C	-60÷80		
Tvj	Junction temperature	°C	-60÷125		
CHARACTERISTICS					
UTM	Peak on-state voltage	V	2,6	Tvj=25°C, ITM=3,14 ITAV	
UT(TO)	Threshold voltage	V	1,25	Tvj=125°C 1,57 ITAV< IT <4,71 ITAV	
RT	On-state slope resistance	mΩ	0,55		
IDRM IRRM	Repetitive peak off-state and reverse current	mA	 100 100	Tvj=125°C, UD = UDRM UR= URRM	

CHARACTERISTICS					
Symbols and parameters		Units	T653-800	Conditions	
I_L	Latching current	A	6	Tvj=25°C,U_D=12V Gate pulse : 10V, 5Ω, 1 µs rise time, 10µs	
I_H	Holding current	A	1,0	Tvj=25°C,U_D=12V,Gate open	
U_{GT}	Gate trigger direct voltage	V	2,5 5,0	Tvj=25°C, Tvj=-60°C	U_D=12V
I_{GT}	Gate trigger direct current	A	0,3 0,85	Tvj=25°C, Tvj=-60°C	
U_{GD}	Gate non-trigger direct voltage	V	0,25	Tvj=125°C, U_D = 0,67 U_{DRM}	
I_{GD}	Gate non-trigger direct current	mA	10	Direct gate current	
tgd	Delay time	µs	4,0	Tvj=25°C,U_D=500V I_{TM} = 800 A Gate pulse : 10V, 5Ω, 1 µs rise time, 10µs	
tgt	Turn-on time	µs	12		
tq	Turn-off time	µs	400÷500	Tvj=125°C, I_{TM} =800 A di_R/dt =10 A/µs, U_R=100V U_D = 0,67 U_{DRM} du_D/dt=50 V/µs	
Qrr	Recovered charge	µC	2900	Tvj=125°C, I_{TM} =800 A di_R/dt =10 A/µs, U_R=100V	
trr	Reverse recovery time	µs	38		
I_{RRM}	Peak reverse recovery current	A	153		
$(du_D/dt)_{crit}$	Critical rate of rise of off-state voltage	V/µs	500 1000	Tvj=125°C, U_D = 0,67 U_{DRM} Gate open	
Rthjc	Thermal resistance junction to case	°C/W	0,022	Direct current, double side cooled	

ORDERING							
	T	**653**	**800**	**46**	**7**	**1**	
	1	**2**	**3**	**4**	**5**	**6**	

1. Phase control thyristor
2. Design version.
3. Mean on-state current, A.
4. Voltage code (46=4600 V).
5. Critical rate of rise of off-state voltage (6 ≥ 500 V/µs, 7 ≥ 1000 V/µs).
6. Group of turn-off time (du_D/dt=50 V/µs, 1 ≤ 500 µs, H2 ≤ 400 µs).



Mounting force : 19 ÷ 28 kN
Weight : 700 grams