



**TET ESTEL AS**  
ESTONIA

**November**  
**2013**

**Series**  
**T371C-320**

## Phase Control Stud Mounted Thyristor Type T371C-320

Center amplifying gate  
Low on-state and switching losses  
Designed for traction and industrial applications

Maximum mean on-state current	$I_{TAV}$ <b>320 A</b>				
Maximum repetitive peak off-state and reverse voltage	$U_{DRM}$ <b>1600 ÷ 2400 V</b>				
Turn-off time	$U_{RRM}$ $t_q$ <b>160; 200; 250 <math>\mu</math>s</b>				
$U_{DRM}, U_{RRM}, V$	1600	1800	2000	2200	2400
Voltage code	16	18	20	22	24
$T_{vj}, ^\circ C$	- 60 ÷ 125				

### MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	T371C-320	Conditions
$I_{TAV}$	Mean on-state current	A	320 420	$T_c=85^\circ C,$ $T_c=70^\circ C,$ 180° half-sine wave, 50 Hz
$I_{TRMS}$	RMS on-state current	A	502	$T_c=85^\circ C$
$I_{TSM}$	Surge on-state current	kA	9,0 10,0	$T_{vj}=125^\circ C$ $T_{vj}=25^\circ C$ tp=10 ms
$I^2t$	Limiting load integral	$kA^2s$	405 500	$T_{vj}=125^\circ C$ $T_{vj}=25^\circ C$ $U_R=0$
$U_{DRM}, U_{RRM}$	Repetitive peak off-state and reverse voltage	V	1600÷2400	$T_{j\ min} \leq T_{vj} \leq T_{j\ M}$ 180° half-sine wave, 50 Hz Gate open
$U_{DSM}, U_{RSM}$	Non-repetitive peak off-state and reverse voltage	V	1700÷2500	$T_{j\ min} \leq T_{vj} \leq T_{j\ M}$ 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	$A/\mu s$	320 160	$T_{vj}=125^\circ C ; U_D=0,67 U_{DRM},$ Gate pulse : 10V, 5 $\Omega,$ 1 $\mu s$ rise time, 10 $\mu s$
$U_{RGM}$	Peak reverse gate voltage	V	5	$T_{j\ min} \leq T_{vj} \leq T_{j\ M}$
$T_{stg}$	Storage temperature	$^\circ C$	-60÷80	
$T_{vj}$	Junction temperature	$^\circ C$	-60÷125	

### CHARACTERISTICS

$U_{TM}$	Peak on-state voltage	V	1,8	$T_{vj}=25^\circ C, I_{TM}=3,14 I_{TAV}$
$U_{T(To)}$	Threshold voltage	V	1,1	$T_{vj}=125^\circ C$
$R_T$	On-state slope resistance	$m\Omega$	0,7	$1,57 I_{TAV} < I_T < 4,71 I_{TAV}$
$I_{DRM}$ $I_{RRM}$	Repetitive peak off-state and reverse current	mA	40 40	$T_{vj}=125^\circ C,$ $U_D = U_{DRM}$ $U_R = U_{RRM}$

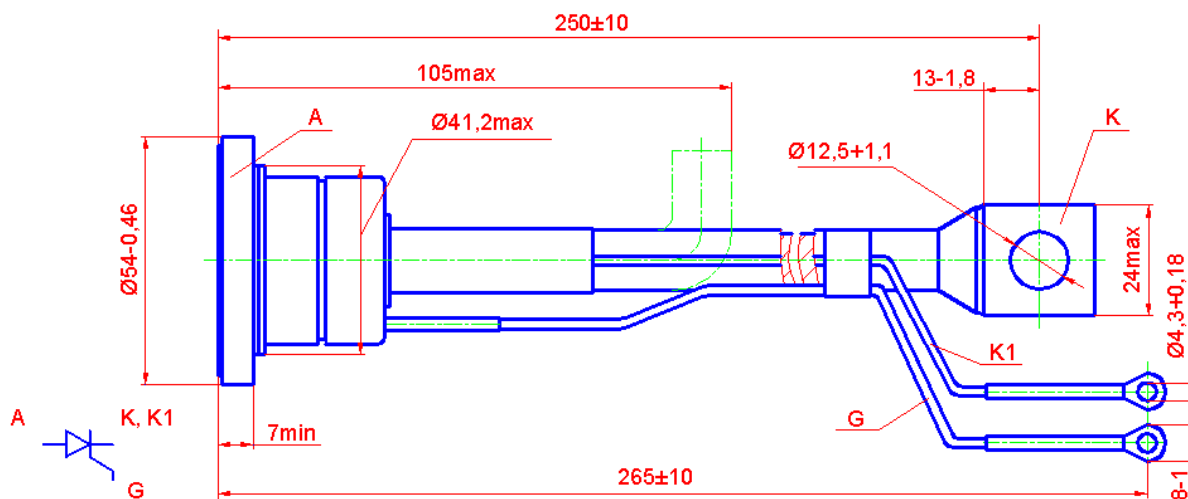
## CHARACTERISTICS

Symbols and parameters		Units	T371C-320	Conditions
$I_L$	Latching current	A	0,7	$T_{vj}=25^{\circ}\text{C}, U_D=12\text{V}$ Gate pulse : 10V, 5 $\Omega$ , 1 $\mu\text{s}$ rise time, 10 $\mu\text{s}$
$I_H$	Holding current	A	0,5	$T_{vj}=25^{\circ}\text{C}, U_D=12\text{V}$ , Gate open
$U_{GT}$	Gate trigger direct voltage	V	2,5 5,0	$T_{vj}=25^{\circ}\text{C}$ , $T_{vj}=-60^{\circ}\text{C}$ $U_D=12\text{V}$
$I_{GT}$	Gate trigger direct current	A	0,3 0,85	$T_{vj}=25^{\circ}\text{C}$ , $T_{vj}=-60^{\circ}\text{C}$
$U_{GD}$	Gate non-trigger direct voltage	V	0,25	$T_{vj}=125^{\circ}\text{C}$ , $U_D = 0,67 U_{DRM}$
$I_{GD}$	Gate non-trigger direct current	mA	10	Direct gate current
tgd	Delay time	$\mu\text{s}$	1,6	$T_{vj}=25^{\circ}\text{C}, U_D=500\text{V}$ $I_{TM} = 320 \text{ A}$
tgt	Turn-on time	$\mu\text{s}$	3,2	Gate pulse : 10V, 5 $\Omega$ , 1 $\mu\text{s}$ rise time, 10 $\mu\text{s}$
tq	Turn-off time	$\mu\text{s}$	160÷250	$T_{vj}=125^{\circ}\text{C}$ , $I_{TM}=320 \text{ A}$ $di_R/dt = 10 \text{ A}/\mu\text{s}$ , $U_R=100\text{V}$ $U_D = 0,67 U_{DRM}$ $du_D/dt=50 \text{ V}/\mu\text{s}$
Qrr	Recovered charge	$\mu\text{C}$	1500	$T_{vj}=125^{\circ}\text{C}$ , $I_{TM}=320 \text{ A}$ $di_R/dt = 10 \text{ A}/\mu\text{s}$ , $U_R=100\text{V}$
trr	Reverse recovery time	$\mu\text{s}$	27	
Irrm	Peak reverse recovery current	A	110	
( $du_D/dt$ )crit	Critical rate of rise of off-state voltage	V/ $\mu\text{s}$	500 1000	$T_{vj}=125^{\circ}\text{C}$ , $U_D = 0,67 U_{DRM}$ Gate open
Rthjc	Thermal resistance junction to case	$^{\circ}\text{C}/\text{W}$	0,075	Direct current

## ORDERING

	<b>T</b>	<b>371</b>	<b>C</b>	<b>320</b>	<b>24</b>	<b>7</b>	<b>2</b>		
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>		

- Phase control thyristor .
- Design version.
- Flat-base (anode).
- Mean on-state current, A.
- Voltage code (24 =2400 V).
- Critical rate of rise of off-state voltage ( $6 \geq 500 \text{ V}/\mu\text{s}$ ,  $7 \geq 1000 \text{ V}/\mu\text{s}$ ).
- Group of turn-off time ( $du_D/dt=50 \text{ V}/\mu\text{s}$ ,  $2 \leq 250 \mu\text{s}$ ,  $P2 \leq 200 \mu\text{s}$ ,  $3 \leq 160 \mu\text{s}$ ).



Mounting force : 5 ÷ 7 kN

Weight : 500 grams