Тиристор быстродействующий
ТБ251-100

Mean on-state current				I_{TAV}		100 A		
Repetitive peak off-state voltage				U_{DRM}		500 - 1400 V		
Repetitive peak reverse voltage				U_{RRM}				
Turn-off time				t_q		20.0, 25.0 μs		
U_{DRM}, U_{RRM}, V	500	600	700	800	900	1000	1200	1400
Voltage code	5	6	7	8	9	10	12	14
T_j, °C	-60 ÷ 125							

ПРЕДЕЛЬНО ДОПУСТИМЫЕ ЗНАЧЕНИЯ ПАРАМЕТРОВ

Symbols and parameters		Units	Values	Conditions	
I_{TAV}	Mean on-state current	A	100	Tc=90 °C, 180° half-sine wave, 50 Hz	
I_{TRMS}	RMS on-state current	A	157	Tc=90 °C	
I_{TSM}	Surge on-state current	kA	2,0 2,82	Tvj=125°C Tvj=25°C	tp=10 ms U_R=0
I^2t	Limiting load integral	kA^2s	20,80 24,2	Tvj=125°C Tvj=25°C	tp=10 ms U_R=0
U_{DRM},U_{RRM}	Repetitive peak off-state and reverse voltage	V	500 - 1400	Tj min≤Tvj≤Tjм 180° half-sine wave, 50 Hz Gate open	
U_{DSM},U_{RSM}	Non-repetitive peak off-state and reverse voltage	V	550 - 1500	Tj min≤Tvj≤Tjм 180° half-sine wave tp=10 ms, Single pulse Gate open	
(di$_T$/dt) crit	Critical rate of rise of on-state current : non - repetitive repetitive	A/μs	 1000 400	Tvj=125°C ; U_D=0,67 U_{DRM}, Gate pulse : 10V,5 Ω, 1μs rise time, 10 μs	
U_{RGM}	Peak reverse gate voltage	V	5	Tj min≤Tvj≤Tjм	
Tstg	Storage temperature	°C	-60...+80		
Tvj	Junction temperature	°C	-60...+125		
U_{TM}	Peak on-state voltage	V	1,8	Tvj=25°C, I_{TM}=3,14 I_{TAV}	
$U_{T(TO)}$	Threshold voltage	V	1,3	Tvj=125°C 1,57 I_{TAV} < I_T <4,71 I_{TAV}	
R_T	On-state slope resistance	mΩ	1,5		
I_{DRM} I_{RRM}	Repetitive peak off-state and reverse current	mA	20 20	Tvj=125°C, U_D = U_{DRM} U_R= U_{RRM}	

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
I_L	Latching current	A	0,7	Tvj=25°C,U_D=12V Gate pulse : 10V, 5Ω, 1 µs rise time, 10µs	
I_H	Holding current	A	0,3	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	0,2 0,5	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	мA	10	Direct gate current	
tgd	Delay time	µs	1,6	Tvj=25°C,U_D=500V I_{TM} = 80 A Gate pulse : 10V, 5Ω, 1 µs rise time, 10µs	
tgt	Tum-on time	µs	3,2		
tq	Tum-off time	µs	20; 25 25; 32	Tvj=125°C, I_{TM} =80 A di_R/dt =10 A/µs, U_R=100V U_D = 0,67 U_{DRM} du_D/dt=50 V/µs du_D/dt=200 V/µs	
Qrr	Recovered charge	µC	150	Tvj=125°C, I_{TM} =80 A di_R/dt=50 A/µs, U_R=100V	
trr	Reverse recovery time	µs	2,5		
I_{rrM}	Peak reverse recovery current	A	120		
$(du_D/dt)_{crit}$	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	0,21	Direct current	

PART NUMBERING GUIDE

ТБ	251	100	14	А2	Р3	К4	УХЛ2
1	2	3	4	5	6	7	8

1. TF (ТБ) — fast thyristor
2. Design version
3. Mean on-state current, A
4. Voltage code
5. Critical rate of rise of off-state voltage
6. Group of turn-off time (dv_D/dt=50 V/ms)
7. Group of turn-on time
8. Ambient conditions: УХЛ2, Т2

NOTES

[1] Critical rate of rise of off-state voltage

Sumbol of Group	К2	Е2	А2
$(dv_D/dt)_{crit}$, V/ms	320	500	1000

[2] Turn-on time

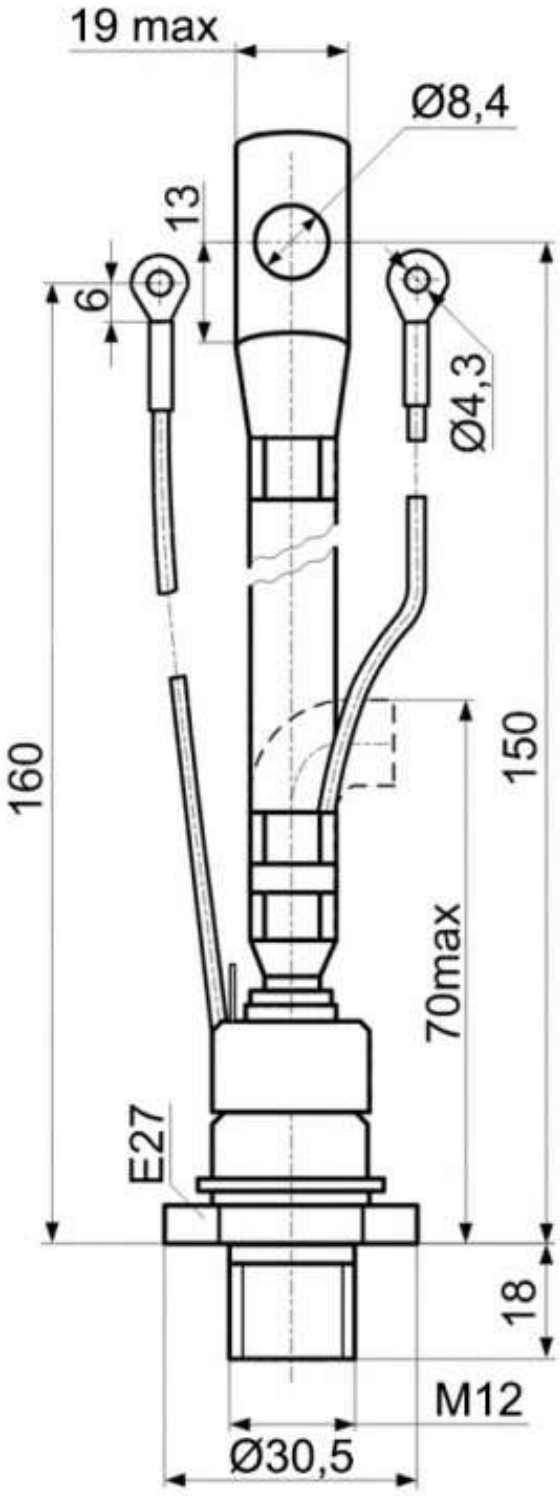
Sumbol of Group	К4
t_{gt}, ms	3.20

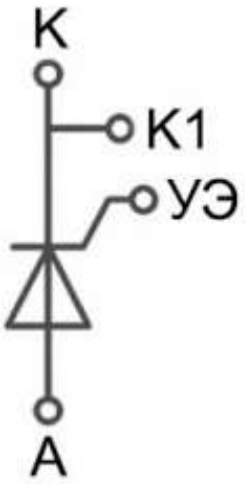
[3] Turn-off time (dv_D/dt=50 V/ms)

Sumbol of Group	Р3	М3
t_q, ms	20.0	25.0

OVERALL DIMENSIONS

Package type: ST5





К – cathode;

А – anode;

К1 – auxiliary cathode;

УЭ – gate;

All dimensions in millimeters