	TET ESTEL AS ESTONIA	**June 2013**

Series
TFI171-250

Fast Stud Mounted Thyristor
Type TFI171-250

Low turn-off time
Low reverse recovery charge
Distributed amplified gate for high di/dt

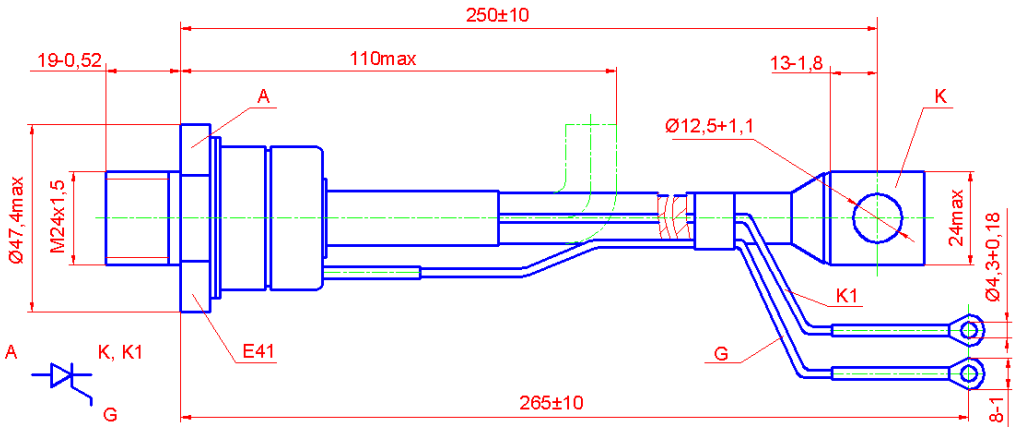
Maximum mean on-state current					I_{TAV}	**250 A**			
Maximum repetitive peak off-state and reverse voltage					U_{DRM} U_{RRM}	**300 ÷1100 V**			
Turn-off time					**tq**	**8; 10; 12,5; 16 µs**			
U_{DRM}, U_{RRM}, V	300	400	500	600	700	800	900	1000	1100
Voltage code	3	4	5	6	7	8	9	10	11
Tvj, °C	- 60 ÷ 125								

MAXIMUM ALLOWABLE RATINGS				
Symbols and parameters		Units	TFI171-250	Conditions
I_{TAV}	Mean on-state current	A	250 330	Tc=90 °C, Tc=75 °C, 180° half-sine wave, 50 Hz
I_{TRMS}	RMS on-state current	A	392	Tc=90 °C
I_{TSM}	Surge on-state current	kA	8,0 9,0	Tvj=125°C Tvj=25°C tp=10 ms U_R=0
I^2t	Limiting load integral	kA^2s	320 405	Tvj=125°C Tvj=25°C
U_{DRM},U_{RRM}	Repetitive peak off-state and reverse voltage	V	300÷1100	Tj min≤Tvj≤Tjm 180° half-sine wave, 50 Hz Gate open
U_{DSM},U_{RSM}	Non-repetitive peak off-state and reverse voltage	V	330÷1210	Tj min≤Tvj≤Tjm 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	 1600 800	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≤Tjm
Tstg	Storage temperature	°C	-60÷80	
Tvj	Junction temperature	°C	-60÷125	
CHARACTERISTICS				
U_{TM}	Peak on-state voltage	V	2,1	Tvj=25°C, I_{TM}=3,14 I_{TAV}
$U_{T(TO)}$	Threshold voltage	V	1,35	Tvj=125°C 1,57 I_{TAV}< I_T <4,71 I_{TAV}
R_T	On-state slope resistance	mΩ	0,8	
I_{DRM} I_{RRM}	Repetitive peak off-state and reverse current	mA	 50 50	Tvj=125°C, U_D = U_{DRM} U_R= U_{RRM}

CHARACTERISTICS					
Symbols and parameters		Units	TFI171-250	Conditions	
I_L	Latching current	A	5	Tvj=25°C,U_D=12V Gate pulse : 10V, 5Ω, 1 µs rise time, 10µs	
I_H	Holding current	A	0,5	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	1,6	Tvj=25°C,U_D=500V I_{TM} = 250 A Gate pulse : 10V, 5Ω, 1 µs rise time, 10µs	
tgt	Turn-on time	µs	2,5		
tq	Turn-off time	µs	8÷16 10÷20	Tvj=125°C, I_{TM}=250 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	100	Tvj=125°C, I_{TM}=250 A di_R/dt=50 A/µs, U_R=100V	
trr	Reverse recovery time	µs	3,1		
I_{RRM}	Peak reverse recovery current	A	70		
$(du_D/dt)_{crit}$	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	0,075	Direct current	

ORDERING								
	TFI	**171**	**250**	**10**	**7**	**8**	**3**	
	1	**2**	**3**	**4**	**5**	**6**	**7**	

1. Fast thyristor with interdigitated gate structure.
2. Design version.
3. Mean on-state current, A.
4. Voltage code (10=1000 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, 7 ≤ 16µs, 8 ≤ 12,5µs, A4 ≤ 10µs, 9 ≤ 8µs).
7. Group of turn-on time (3 ≤ 2,5µs).



Tightening torgue : 40 ÷ 60 Nm
Weight : 480 grams