SHANDOR Ltd. Plovdiv, Bulgaria

Type SF333-xx32

High Frequency Inverter grade Capsule Thyristor

Distributed amplified gate for high di/dt and low switching losses

Maximum mean on-state current						I_{FAV}	**320 A**		
Maximum repetitive peak off-state and reverse voltage						U_{DRM} U_{RRM}	**1200 ÷2200 V**		
Turn-off time						**tq**	**20; 25; 32 µs**		
U_{DRM}, U_{RRM}, V		1200	1300	1400	1500	1600	1800	2000	2200
Voltage code - **XX**		12	13	14	15	16	18	20	22
Tvj, °C	- 60 ÷ 125								

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	SF333-xx32	Conditions
I_{FAV}	Mean on-state current	A	320 537	Tc=91°C, Tc=55°C, 180° half-sine wave, 50 Hz
I_{TRMS}	RMS on-state current	A	**502**	Tc=91 °C, 50 Hz
I_{TSM}	Surge on-state current	kA	6,3	Tvj=125°C U_R=0 tp=10 ms
(di$_T$/dt) cr	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,5Ω, 1µs rise time, 10µs
U_{RGM}	Peak reverse gate voltage	V	5	
Tstg	Storage temperature	°C	-60 ÷ 125	
Tvj	Junction temperature	°C	-60 ÷ 125	

CHARACTERISTICS

Symbols and parameters		Units	SF333xx32	Conditions
U_{TM}	Peak on-state voltage	V	2,7	Tvj=25°C, I_{TM}=3,14 I_{TAV}
$U_{T(TO)}$	Threshold voltage	V	1,6	Tvj=125°C
r_T	Slope resistance	mΩ	1,25	Tvj=125°C
I_{DRM} I_{RRM}	Repetitive peak off-state and reverse current	mA	70 70	Tvj=125°C, U_D= U_{DRM} U_R= U_{RRM}

I_L	Latching current	A	5	Tvj=25°C; U_D=12V, Gate pulse: 10V,5Ω, 1µs rise time, 10µs
I_H	Holding current	A	1,0	Tvj=25°C; U_D=12, Gate open
U_{GT}	Gate trigger direct voltage	V	2,5	Tvj=25°C; U_D=12V
I_{GT}	Gate trigger direct current	A	0,3	Tvj=25°C; U_D=12V
U_{GD}	Gate non-trigger direct voltage	V	0,25	Tvj=125°C; U_D=0,67 U_{DRM}
tgd	Delay time	µs	1,6	Tvj=25°C, U_D=500V, I_{TM}=320A Gate pulse: 10V,5Ω, 1µs rise time, 10µs
tgt	Turn-on time	µs	2,5	
tq	Turn-off time	µs	20÷32 25÷40	Tvj=125°C, I_{TM}=320A, di_R/dt= 10 A/µs U_R=100V U_D=0,67 U_{DRM} Di_D/dt= 50 A/µs Di_D/dt= 200 A/µs
Qrr	Recovered charge	µC	300	Tvj=125°C, I_{TM}=320A, di_R/dt= 50 A/µs, U_R=100V
(di_D/dt) cr	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	0,04	Direct current, double side cooled

Mounting force : 10 ÷ 15 kN
Weight : 250 gram